# The Cultivation of Quality and Ability of Environmental Design Professionals in Universities under the Digital Background

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**Abstract**

Grasping the talent demand orientation and vigorously cultivating applied talents with practical and innovative abilities are in line with the professional talent training goals of universities in the digital age. Reflecting on the current talent cultivation system in the field of environmental design based on the school's own educational model and talent cultivation status, keeping pace with the times, following the laws of sustainable development, and exploring strategies for professional talent cultivation in the digital age is the historical mission of environmental art and design education. Actively adjusting the professional system, determining training objectives based on market demand, continuously reforming teaching methods, and restructuring the curriculum system, with the aim of enhancing students' innovative and practical abilities in the field of professional design, and solving the practical problems of graduates' employment and entrepreneurship difficulties.

**Keywords:** digital technology, environmental design, practical ability, teaching reform

## 1. Introduction

Environmental design is a form of artistic creation characterized by meeting people's production and living needs through technological and artistic means. It mainly conducts research on indoor and outdoor living environment design and environmental creation practice, involving a wide range of disciplines, including architectural engineering technology and humanities science, as well as urban and rural landscape and other fields(2022)[1]. With the advent of the digital economy era, the demand for environmental design professionals in the market has quietly changed, especially with the penetration of modern information technology into traditional environmental design, which has put forward higher requirements for graduates' knowledge structure, vocational skills, design management abilities, and other aspects.

Colleges and universities should be rooted in the local context, always keeping in mind the "greater good of the country", seeking truth and being pragmatic, and placing the employment of graduates in a prominent position as the top priority of school work. Fully implement the fundamental task of cultivating morality and talents, guided by the demand for talents in the digital economy era, make good use of the "catalyst" of interdisciplinary integration, timely adjust the goals and specifications of professional talent training, and cultivate compound talents with high humanistic literacy, strong project practice ability, and innovative ability.

## 2. Present Situation

### 2.1 Outdated Concept

The connotation of interdisciplinary intersection refers to the research, teaching, and application of interdisciplinary and interdisciplinary integration(2018)[2]. Its purpose is to better integrate resources, easily achieve original and significant scientific breakthroughs, facilitate the integration of ideas, comprehensively solve practical problems, stimulate innovation, and promote the cultivation of interdisciplinary and composite talents.

The professional knowledge of environmental design covers a wide range and is rich in content, covering many fields such as architecture, interior, landscape, and exhibition, with a large span of expertise(2021)[3]. Breaking disciplinary boundaries will greatly help improve problem-solving skills. At present, the cultivation of talents in environmental design majors in universities still lacks a clear positioning, and the professional characteristics and advantages are not obvious enough. The practical skills for students to enter the workforce after graduation are not well considered. The curriculum focuses on imparting single professional knowledge, while practical training projects mainly focus on training in professional skills, lacking depth in professional knowledge and breadth in crossing with other disciplines.

*2.2 Outdated Methods*

The advent of the digital economy has brought profound impacts and challenges to the field of environmental design. To adapt to the digital economy situation, environmental design professionals must possess a knowledge structure and abilities that keep up with the times to meet the needs of industry positions. This talent concept must have a solid theoretical knowledge foundation in the field, as well as good professional practical skills, innovative consciousness, and the ability to apply new technologies to solve various problems in practical work(2012)[4].

In the current teaching practice, the teaching methods are outdated and there is a situation where theory is emphasized over practice. The disconnect between theory and practice leads to a significant increase in the teaching hours of theoretical knowledge compared to practical experience, making it difficult for students to gain necessary practical experience through course learning, which poses challenges for job hunting and entrepreneurship.

*2.3 Fuzzy Positioning*

Under the severe competition for employment in the current environmental design major, the positioning of talent cultivation goals is vague, making it difficult to accurately determine the employment direction of students. Specifically, influenced deeply by traditional exam oriented education ideas, there is a lack of dynamic understanding of industry demand specifications, and the courses set are too hollow and extensive, resulting in a disconnect between goals and educational reality, and contradictions between practical activities and training programs. The research on the requirements for the abilities, knowledge structure, and literacy of professional talents in the digital age is too superficial, which makes it difficult for actual educational activities to play their role and the ultimate effect of talent cultivation cannot meet expectations.

Most practical courses still remain at the stage of computer-aided design, focusing only on the technical expression of scheme drawings and lacking rational analysis and evaluation in scheme design. There are still problems with inadequate systems, scattered resources, and a disconnect between industry and education in practical education. The lack of depth in school enterprise cooperation and exchange has prevented the construction of off campus practice bases from truly complementing each other. There is no effective measurement and guidance mechanism for students' practical ability, and their practical hands-on ability to solve complex engineering problems is weak.

**3. Set Goals**

*3.1 Combining Theory with Practice*

Environmental design needs to combine various disciplines and fields such as landscape architecture, architecture, urban and rural planning, environmental art, and municipal engineering design. The design level is diverse and the technology is complex. In addition to combining scientific and artistic aspects, it also considers economic, ecological, and social benefits, presenting a development trend of interdisciplinary, multi-disciplinary, and highly comprehensive application. Integrating career planning, practical skills, comprehensive qualities, and the ability to apply relevant knowledge throughout the entire education process, helping students make progress on their career path and gain recognition in the job market.

To cultivate students' comprehensive application ability and enhance their ability to cope with industry and industrial transformation and upgrading, the environmental design major needs to closely track new materials, new technologies, new processes, and new information in the professional field. The inheritance and development of real estate, construction, urbanization process, smart cities, and traditional architecture require new concepts and technological developments as a basis. Therefore, it is imperative to upgrade the training objectives of professional talents.

*3.2 Improve Professional Quality*

Environmental design cleverly combines natural and social attributes, fully utilizing natural and cultural elements to create a multi-level, fully functional, regionally distinctive, and culturally inherited environmental space, truly achieving the goal of putting people first. Natural attributes include perceptible factors such as light, shape, color, and volume, and have a certain spatial form. Social attributes have social and cultural connotations, and people can trigger psychological reactions such as emotions, interests, associations, etc. through their connotations(2014)[5].

The level of refinement in environmental design is increasing, and people are no longer just satisfied with the pursuit of functionality, but are paying more attention to details and taste in design, seeking a sense of identity and belonging to the space. The human centered refined design can be subdivided into different subjects, such as child friendly design, health care design, etc., reflected in the refined presentation of cultural and regional characteristics.

By exploring cultural resources from different regions, protecting historical and cultural heritage, and continuing ethnic cultural styles, traditional cultural heritage is highlighted in environmental space design, highlighting the characteristics of the times and humanistic atmosphere. The AI education concept guided by digital literacy will be beneficial for students to understand and apply design ethics, morality, and social responsibility.

*3.3 Relying on Digital Technology*

With the further development of modern information and intelligent technology, the construction and development of informatization, networking, and digitization have become significant symbols of modern society. The use of digital technology to construct a design curriculum system is an inevitable trend in the development of design courses. Environmental design combines leading information technologies such as big data, cloud computing, the Internet of Things, and artificial intelligence with green ecological concepts. While enriching people's material living space and spiritual needs, it organically integrates spatial design theory with modern digital virtual technology, which is conducive to enhancing students' enthusiasm for participating in environmental design teaching, improving their spatial imagination, and enhancing their basic ability to connect theory with practice.

Digital technology has promoted the development of practical training modes for environmental design courses, and has put forward higher requirements for the software and hardware construction of environmental design training platforms. The practical teaching course of environmental design collects and organizes natural environment and historical and cultural information of the site, uses computer software for comprehensive application and analysis, constructs parameterized model simulation forms, and makes environmental design more convenient and efficient.

*3.4 Cultivate Innovative Thinking*

With the continuous promotion of urbanization and rural revitalization strategies, the development of urban and rural public space environment design projects is increasing. Such projects require organic integration of landscape design, architectural design, natural ecology, etc., while controlling the entire design process. Market centralization and refined management have become the future trends of the environmental design industry, and the full process design service model is an inherent requirement for the industry's development. The rapid development of modern educational technologies such as multimedia and network technology has enabled professional teachers to diversify their teaching methods. The application of advanced PBL (problem-based learning) teaching method, through setting classroom situations and using field research and other methods, transfers classroom teaching from traditional indoor to real-life environments, promoting students' innovative qualities and personality development.

Combining classroom teaching with the cultivation of moral education, integrating it into various aspects of environmental design courses, strengthening and refining top-level design and systematic planning, enriching teaching forms and methods, with the construction goal of "imparting knowledge, cultivating abilities, and innovating consciousness", and addressing urgent issues such as "novelty, comprehensiveness, practicality, and outstanding characteristics" in teaching.

## 4. Methods and Strategies

*4.1 Management Mechanism*

The quality of education has always been the lifeline of educational development, transforming the concept of talent quality and promoting the reform and innovation of teaching management systems. The new concept of talent quality requires placing students' abilities and personality development in a prominent position in talent cultivation, and establishing a management mechanism that is conducive to students' comprehensive development. Ensuring the quality of talent in universities requires a rigorous and effective internal teaching quality assurance system, including scientific and modern teaching management methods, innovative education systems, and a sound supervision and evaluation system for teaching quality. Gradually improve the internal self-discipline mechanism, enrich and perfect the internal teaching quality supervision and evaluation system. Utilize modern educational technology to promote the modernization of teaching management methods. With the development and widespread application of digital technology, the informatization and networking of teaching management have become a major trend in higher education and teaching management. Teaching management has jumped from traditional manual mode to automated mode(2017)[6].

*4.2 Cultivation Philosophy*

Change the problems of single knowledge structure, lack of digital thinking, and disconnection between classroom teaching and design practice to meet the needs of cross-border integration, open sharing, and intelligent innovation in the digital age. Carry out learning situation analysis, improve the teaching quality evaluation system, enhance cross-border integration awareness, optimize the existing professional education and teaching platform and

curriculum system of the school, and cultivate students' cross disciplinary knowledge integration ability and practical ability. In the formulation of talent training programs, new professional content and technologies are incorporated to provide students with comprehensive interdisciplinary education and build a knowledge and ability structure that integrates multiple disciplines. Schools should actively explore the operability of enterprise participation in professional construction, and strive to establish and regulate it from a systemic perspective(2006)[7].

Adhere to the student-centered approach, implement the diversified application-oriented innovative talent cultivation concept of individual development, and promote the comprehensive development of individuals. Integrating value shaping, knowledge imparting, and ability cultivation, strengthening cross-cultural communication, exchange, and collaboration capabilities, and promoting the comprehensive transformation and upgrading of environmental design talents' thinking, knowledge, abilities, and literacy.

*4.3 Course Setting*

The setting of professional courses is the concretization of training objectives and specifications, and is an important basis for higher education and teaching work. Build a diversified curriculum model consisting of different course platforms and modules, with a wide range of knowledge, strong applicability, and theoretical and practical penetration, focusing on cultivating students' comprehensive application abilities and highlighting professional characteristics. Offering corresponding professional practical training courses, combining theoretical knowledge with practical teaching, strengthening design thinking, and enhancing innovative ability to solve practical problems in the field of environmental design. Encourage students to participate in professional design competitions, cultivate their innovative thinking and competitive awareness, and stimulate their learning enthusiasm. Add humanistic quality courses, attach importance to the connection between relevant field course knowledge and environmental design, strengthen students' interdisciplinary knowledge reserves, and improve students' humanistic spirit and professional qualities.

*4.4 Teaching Staff Team*

Professional teachers are the first resource for universities to implement the goal of cultivating applied talents. Focusing on building a group of innovative teams that excel in both morality and technology, collaborate innovatively, and have a reasonable structure is the key to ensuring the quality of education and sustainable development in universities. Guided by problems, modular teaching is regarded as an important content, breaking down disciplinary and professional barriers, collaborating and sharing high-quality resources both inside and outside the school, and promoting cross college and cross disciplinary faculty joint teaching. Integrate industry enterprises into the professional construction cycle, participate in the development of talent training plans, curriculum system reconstruction, teaching design implementation, etc. throughout the process, cooperate to establish a high-level cross disciplinary teaching team, lead and drive the overall improvement of environmental design professional construction level, and empower the high-quality development of environmental design professional education with practical actions.

## 5. Conclusion

The global digital transformation has promoted comprehensive innovation and improvement in both urban and rural areas, becoming the core driving force for sustainable development and promoting economic development and social progress. The demand for personalized and high-quality environmental design has increased, and digital environmental design will become an important means to meet these needs. How universities can effectively ensure the quality of talent cultivation while advancing technology has become one of the core challenges in the digitalization process.Based on the actual situation of universities, actively explore the inherent laws of talent cultivation, optimize and integrate existing teaching resources, and innovate talent cultivation models from different dimensions. Emphasize practical training in teaching and strengthen practical training abilities; Emphasis is placed on on-site teaching and thematic design guidance in the curriculum to cultivate the comprehensive qualities of graduates; Pay attention to classified training in the construction of the teaching staff, support the personal development of young teachers, use scientific research to support teaching, and strengthen professional and industry exchanges with the outside world; In the classroom teaching of professional theory and design practice, linking the "small classroom" with the "big classroom" of society, fully exerting students' subjectivity in course learning, enriching students' learning activities, and improving graduates' core competitiveness.

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