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Exploration of the Comprehensive Education Model of Landscape Design Job Course Competition and Certificate

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Abstract: This article mainly introduces the current development status, market demand, and suggestions for integrating and optimizing the industrial chain of the landscaping industry. The article analyzes the market demand growth in downstream fields such as municipal landscaping, real estate landscaping, and home gardening, emphasizing the importance of technological innovation and intelligent development in the landscaping industry. At the same time, measures such as promoting technological innovation, expanding application areas, and strengthening talent cultivation were explored to optimize the industrial chain. The article also looks forward to the technological innovation and intelligence, green environmental protection and sustainable development trends of the landscaping industry, as well as the integration and expansion prospects of domestic and foreign markets, and proposes that the landscaping industry will actively explore sustainable development models.

In the current social context, the landscape design industry is gradually becoming a key force in promoting the construction of ecological civilization. With the deepening practice of the concept of "green mountains and clear waters are as valuable as mountains of gold and silver", the public's demand for a beautiful ecological environment is increasing day by day. As a bridge connecting nature and culture, the importance of landscape design is self-evident. In this context, exploring the integration of skills [1], courses, competitions, and certifications in landscape design positions is not only a positive response to vocational education reform, but also an effective way to alleviate the contradiction between market demand and talent supply.

1. Overview of Landscape Design Positions

Against the backdrop of the current wave of urbanization, the landscape design industry, as a bridge connecting natural and artificial environments, is becoming increasingly important. This industry not only carries the responsibility of beautifying urban space and improving residents' quality of life, but also plays a key role in promoting ecological civilization construction and sustainable development.

The landscape design position, as the core driving force of the entire project, has broad and far-reaching responsibilities. Designers need to have profound artistic cultivation and solid technical skills. From the initial conceptual conception of the project to the later construction guidance and maintenance management, every link needs to be carefully planned and executed. Specifically, job responsibilities include creative development of landscape plans, precise presentation of construction drawings, precise control of material sampling, and real-time follow-up of on-site technical guidance. The smooth progress of this series of work requires designers not only to have rich design creativity, but also to have excellent communication and coordination skills and practical operation abilities to ensure the perfect implementation of design concepts[2].

With the acceleration of urbanization and the continuous improvement of people's requirements for quality of life, the landscape design industry has ushered in unprecedented development opportunities. The government's increasing investment in urban greening and ecological construction has provided vast development space for the landscape design industry; People's yearning and pursuit for a better living environment have also prompted landscape design to develop towards a more specialized, refined, and personalized direction. The deep integration of technology and design is gradually becoming a new trend in the development of the industry. The application of technologies such as big data, the Internet of Things, and virtual reality not only improves design efficiency and quality, but also provides designers with unprecedented creative space and display platforms. In the future, the landscape design industry will pay more attention to innovation and technological integration, promoting the industry to move towards a more intelligent, green, and sustainable development direction.

2. Curriculum Design and Teaching Reform

In the context of the rapid development of the landscape design industry, the close integration of education and job requirements has become the key to improving the quality of industry talents. To address the challenges brought by future smart cities and climate change, it is imperative to adjust and optimize the course content[3].

2.1. Accurate alignment between course content and job requirements

With the rise of the concept of intelligent garden systems and the increasing demand for adaptive design, course content must keep up with industry development trends and accurately match the actual needs of positions. Through such adjustments, students can comprehensively grasp the latest industry trends and skill requirements, laying a solid foundation for their future careers.

2.2. Construction and Implementation of Modular Curriculum System

Building a modular curriculum system is particularly important for achieving efficient transmission of course content and significant improvement in student learning outcomes. We have divided the course content into modules such as Design Fundamentals, Botany, Landscape Planning, and Construction Drawing Design, with clear learning objectives and assessment standards set for each module. This modular design not only helps students to selectively deepen their learning based on their own interests and career plans[4], but also facilitates teachers to dynamically adjust and optimize teaching effectiveness, ensuring a continuous match between teaching quality and job requirements.

2.3. Strengthening the combination of theory and practice

The combination of theory and practice is an important way to enhance students' comprehensive abilities. In course design, we focus on using case analysis, project training, and other methods to enable students to apply their learned knowledge to solve practical problems while simulating real work scenarios. For example, by participating in the planning and design projects of intelligent garden systems, students can personally experience the application of IoT technology and master the operation methods of intelligent management such as intelligent irrigation. This practice oriented teaching model not only enhances students' hands-on abilities, but also effectively improves their innovative thinking and problem-solving skills[5].

2.4. Innovation and Application of Teaching Methods

To stimulate students' interest and initiative in learning, we actively adopt modern teaching methods such as flipped classroom and project-based learning. The flipped classroom model breaks the time and space limitations of traditional classrooms, encouraging students to learn basic knowledge independently before class, while in class, the focus is on exploring and solving problems. And project-based learning simulates real projects, allowing students to complete the entire process from design concept to implementation in team collaboration, thereby gaining a profound understanding of industry norms and workflow. The application of these teaching methods not only improves teaching effectiveness, but also cultivates students' self-learning ability and teamwork ability, providing strong support for their future career development.

3. Construction and Practice of Skills Competition Platform

Building a competition guidance team composed of professional teachers and enterprise experts is the key to ensuring high-quality promotion of competition projects. Professional teachers provide solid theoretical foundations and teaching experience, while enterprise experts bring rich practical cases and industry insights. The deep integration between the two makes the planning, guidance, and evaluation of competition projects more precise and effective.

Establishing on campus training bases and off campus internship bases to provide students with a real competitive and practical environment is an important way to achieve the combination of theory and practice. The on campus training base helps students familiarize themselves with the design process and software operation by simulating real design scenarios[6]; The off campus internship base provides students with the opportunity to participate in practical projects and experience the real workplace environment.

4. Introduction and Implementation of Certificate System

The introduction of vocational qualification certification has set clear professional standards and thresholds for the landscape design industry. Encouraging students to participate in certification exams for professional qualifications such as landscape designers can help them gain a deeper understanding of industry norms, technical standards, and cutting-edge concepts, thereby demonstrating stronger professionalism and competitiveness in the job search process. This type of certificate is not only a recognition of students' professional abilities, but also an important reference for companies to recruit, which helps to form a more fair and transparent evaluation system.

5. The Application of Integration of Job Course Competition and Certification in Landscape Design

5.1. Curriculum System Optimization and Practice

Practice oriented teaching is an indispensable component of landscape design education. By introducing project-based learning, case analysis, and other teaching methods, students can apply their learned knowledge in simulated or real project environments to solve practical problems. This teaching model not only exercises students' design thinking and innovation abilities, but also enhances their teamwork and project management skills, paving the way for their future career development. The provision of internship opportunities provides students with the opportunity to directly engage with the forefront of the industry, combine theoretical knowledge with practical experience, and accelerate personal growth.

5.2. Skills Competition Organization and Achievement Display

Skills competitions provide students with a key stage to transform theoretical knowledge into practical works. By building this diversified competition platform, students can exercise their design thinking and operational skills in real or simulated project environments, laying a solid foundation for their future careers.

In the competition results display section, it is necessary to make full use of various channels such as exhibitions, official websites, and social media to comprehensively showcase students' excellent works. This is not only a recognition of students' hard work, but also an effective way to enhance their sense of honor and confidence. At the same time, these exhibition activities have attracted the attention of numerous enterprises and society, providing students with more employment and internship opportunities[7], and promoting the deep integration of industry, academia, and research.

5.3. The correlation between certificate acquisition and career development

In the current field of landscape design, establishing a scientific certificate system and clear career development path has become the key to improving the quality of professional talents in the industry and promoting the rational flow of talents. Regarding the construction of the certificate system, it should closely focus on the core skill requirements of landscape design positions, and establish certificates such as the "Landscape Designer Certificate" and the "Flower Gardener Certificate". These certificates are not only authoritative certifications of practitioners' skill levels, but also important measures to guide the standardized development of the industry.

5.4. Teaching effectiveness evaluation and feedback

In the continuous optimization process of the vocational education system, building a comprehensive and in-depth teaching evaluation and feedback mechanism is crucial for improving the quality of teaching and the accuracy of talent cultivation. This mechanism not only requires the use of diversified evaluation methods, but also the establishment of an effective feedback loop to promote continuous improvement and optimization of teaching practices.

5.5. Case analysis

The comprehensive education of vocational education through on-the-job course competition

and certification is an important way to effectively improve the quality of education and promote the high-quality development of vocational education. Adhering to the principle of "setting courses based on positions, educating students through courses, guiding courses through competitions, and verifying courses through certification", we strive to achieve a student-centered approach, from the combination, collaboration, and integration of on-the-job course competition and certification to the integration, integration, mutual promotion, and recyclability of "typical positions", "practical courses", "real competitions", and "passes" in a closed-loop cycle of "on-the-job course competition and certification". At the same time, we will implement a comprehensive and diversified evaluation system, improve the evaluation feedback mechanism, avoid the one-sided pursuit of "results over process" such as medalism and textual criticism, and truly cultivate students who are willing to learn, able to learn, and master both moral and technical skills, consistent in learning and application, have their own strengths, and achieve success in their studies.

This case study is based on the guidance of teachers Yanglin Hu and Zhong Luo from our school from January to May 2019, who guided students Wenxin Liu and Shouying Lin from Class 1701 of Landscape Architecture Design to win the second prize in the Landscape Design Competition (Vocational Group) of the 3rd National Vocational College Forestry and Grassland Skills Competition. It illustrates the importance of comprehensive education in landscape design courses and certifications

The 'job' corresponds to the position of landscape designer (clerk) in the garden;

The 'course' corresponds to the course of garden and green space planning and design;

The "competition" corresponds to the landscape design competition of the National Vocational College Forestry Skills Competition;

The "certificate" corresponds to the professional qualification of landscape designer in the forestry industry.

6. “Job course competition and certificate”

6.1. “Job”

The “Job” corresponds to the position of landscape designer (clerk). The job responsibilities for students who work as landscape designers (clerks) after graduation are as follows:

(1) Responsible for participating in the formulation and review of landscape design schemes, and collaborating with relevant departments to jointly oversee the review of landscape design;

(2) Responsible for coordinating the technical docking and communication work of the design institute, supervising the design institute to produce drawings according to the plan;

(3) Responsible for technical support related to landscape architecture, technical handling of construction issues, cooperating with relevant departments of the company to go deep into the construction site, understanding the construction situation, and timely solving and correcting problems found during construction;

(4) Responsible for maintaining and tracking design materials in the field of landscape architecture;

(5) Responsible for organizing the project department to complete the organization, statistics, analysis, and maintenance of landscape design materials.

In addition to mastering the knowledge of design, students must also possess the qualities of hard work and innovation to meet the requirements of the above job responsibilities. Therefore, in the process of educating students, it is necessary to strengthen labor education in universities in the new era, deeply integrate innovation and entrepreneurship education with professional education and ideological and political education, and cultivate students' qualities of hard work and innovation.

6.2. “Course”

The "course" corresponds to the course of landscape and green space planning and design, which mainly includes the types, theories, and methods of landscape and green space design. Specific knowledge and skill points: the concept and connotation of garden and green space planning and design; Urban landscape green space system and its constituent elements; General procedures for planning and designing garden and green spaces; The design content, principles, and methods of various garden green spaces such as road green spaces, residential green spaces, unit affiliated green spaces, and rooftop gardens. Through course learning, students are able to carry out planning and design of small and medium-sized green spaces, as well as garden building sketches. They can proficiently complete the preparation of design text and display explanations, use software such as CAD, PS, 3DMAX, SU to draw garden design drawings, and use hand drawing techniques to draw local green space planning renderings.

During the teaching process, flexible and vivid teaching modes such as case explanation, scheme deduction, and project implementation are used to extract educational resources such as professional spirit, competitive spirit, and labor spirit. Based on the professional curriculum system, educational resources are matched with the curriculum to achieve the systematic integration of ideological and political elements with professional knowledge and skills, so that ideological and political teaching in the curriculum leads the learning of knowledge and skills in a directed, powerful, and orderly manner. Through course learning, students will have good ideological and professional ethics, good physical and labor consciousness, good interpersonal communication skills, teamwork spirit, and innovation and entrepreneurship abilities.

6.3. “Competition”

The "competition" corresponds to the landscape design competition of the National Vocational College Forestry Skills Competition. The competition requires full consideration of the current conditions, grasping the characteristics of the site, and correctly analyzing various relevant elements. The design scheme can reasonably utilize landscape design elements such as terrain, water, plants, and garden architecture, with a reasonable layout, clear and smooth transportation, innovative ideas, and can fully reflect the characteristics of rural areas. It has originality, economy, and feasibility. Pay attention to the reasonable allocation of trees, shrubs, and grasses, as well as the seasonal effects of plants. The design needs to meet the management concept of people-oriented and comply with the conventional requirements of ergonomics and landscape design. The graphic representation should be clear and aesthetically pleasing, and comply with the standards of landscape mapping. The design should comply with relevant national laws and regulations. Contestants are required to use hand drawn tools or computer applications such as AutoCAD, Photoshop, 3Dmax, SketchUp, and Office provided within the specified time frame. Based on the designated design environment of the competition, they will independently propose a landscape design plan. The content should at least include:

(1) One overall layout plan, with a list of plant configurations marked, and the scale determined based on the A1 drawing;

(2) 2 partial renderings and 1 aerial view;

(3) Design description (not exceeding 300 words).

According to the competition requirements, the guidance teacher team selected students with strong conceptual thinking ability and good computer software level from the 2017 class for training, and developed the following training plan:

(1) First month: Training in design thinking and design logic;

(2) Second month: Training software skills such as CAD, SU, PS, etc

(3) Third month: Plan practice

(4) Fourth month: Simulate the competition time and format, conduct 3-4 game simulations.

During the training process, the instructor uses flexible and vivid training methods such as case explanation, scheme deduction, on-site visits, and model making to implement curriculum ideology, innovation and entrepreneurship, and labor education, cultivating students' professional ethics, labor awareness, teamwork spirit, and innovation and entrepreneurship abilities. Hard work pays off. Wenxin Liu and Shouying Lin from Class 1701 of Landscape Architecture Design won the second prize in the Landscape Design category (vocational group) of the 3rd National Vocational College Forestry and Grassland Skills Competition.

6.4. “Certificate”

The "certificate" corresponds to the professional qualification of landscape designer in the forestry industry. According to the reward method of the 3rd National Vocational College Forestry and Grassland Skills Competition, Wenxin Liu and Shouying Lin from Class 1701 of Landscape Architecture Design have obtained the qualification certificate of Landscape Designer (Level 3), and our school has also won the Excellent Organization Award.

7. Summary and Reflection

In the process of exploring and practicing the integrated education model of curriculum, competition and certification, we can easily find that this model plays a key role in promoting the high-quality development of landscape design education. By deeply integrating the professionalization, project-based, and information-based curriculum system, we have successfully built a comprehensive education platform that integrates teaching [8], competition, and certification. This not only significantly improves the quality of talent cultivation, but also promotes innovation and upgrading of teaching models.

In terms of achievement summary, the integrated model of course competition and certification has effectively stimulated students' learning motivation and innovation ability. Through the specialized design of the curriculum system, students can not only master a solid theoretical foundation, but also participate in practical project operations, quickly transforming theoretical knowledge into practical abilities. At the same time, various design competitions held regularly provide students with a broad stage to showcase their talents and exchange ideas, further enhancing their practical experience and teamwork abilities. By combining industry certification standards, students' comprehensive qualities have been comprehensively improved, better meeting the practical needs of landscape design positions and achieving a high degree of alignment between talent cultivation and market demand [9].

At the level of problem reflection, although the integrated model of job, course, competition, and certification has achieved significant results, it has also encountered some challenges in the implementation process. For example, how to better balance the time allocation between theoretical teaching and practical operation, ensuring effective connection between the two; How to maintain fairness in competition activities and avoid the impact of uneven resource allocation on student motivation; And how to adjust teaching content and methods in a timely manner in the context of constantly updating industry certification standards, ensuring that students always master the most cutting-edge knowledge and skills. To address these issues, we need to strengthen the construction of the teaching staff, enhance the teaching ability and industry sensitivity of teachers; At the same time, optimize the allocation of teaching resources to ensure that every student can enjoy high-quality educational resources; We should also establish a sound feedback mechanism to timely understand students' learning needs and confusion, and provide strong support for teaching

improvement.

Looking ahead to the future, with the continuous development and changes of the landscape design industry, the integrated education model of job, course, competition, and certification will usher in a broader development space. We will continue to uphold the design concepts of specialization, project-based, and information technology, continuously optimize the curriculum system and teaching content, introduce more cutting-edge information technology teaching methods, and enhance students' comprehensive quality and innovation ability [10]. At the same time, we will closely monitor industry trends and changes in market demand, adjust teaching strategies and methods in a timely manner, and ensure that talent cultivation always stays at the forefront of industry development. We will also strengthen cooperation and exchanges with industry associations, enterprises, and other units to jointly promote the continuous innovation and development of the integrated education model of curriculum, competition, and certification, and cultivate more high-quality talents with international perspectives and innovative abilities in the field of landscape design.

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