Reforming the Teaching of Urban Master Planning Courses in Private Colleges within the Context of National Land Spatial Planning

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Abstract: The implementation of national land spatial planning presents new requirements for urban and rural planning education. The core compulsory course of urban master planning faces challenges such as limited teaching time and an overwhelming amount of course content, particularly in private colleges. This paper focuses on the characteristics of students in private colleges, including weak foundations and insufficient innovation capabilities within the urban master planning field. Building upon the Outcome-Based Education (OBE) teaching philosophy, the paper proposes the need to establish multidimensional teaching objectives and reconstruct the teaching content in alignment with industry developments. Moreover, it advocates for the utilization of systematic thinking and Problem-Based Learning (PBL) teaching methods to enhance teaching efficiency and foster stronger teacher-student interactions. By incorporating professional competitions and planning practice, the aim is to cultivate students' proactive learning and planning practical abilities.

Keywords: OBE Philosophy; National Land Spatial Planning; Urban Master Planning; Teaching Reform

1. Introduction

Over the years, the coexistence of three parallel planning systems, namely land use planning, urban planning, and functional zoning, has resulted in an inconsistent planning framework. The proliferation of diverse planning types, overlapping conflicts, and delayed information exchange has led to conflicting interests and disconnect between different government departments, undermining the effectiveness of planning implementation. The document highlights the establishment of a nationally unified, scientifically efficient spatial planning system, aiming to achieve the integration of principal function zoning, land use planning, and urban-rural planning, commonly referred to as the "integration of multiple plans into one". As the fundamental basis for various development, conservation, and construction activities in our country's future, national land spatial planning serves as a crucial measure to promote ecological civilization and achieve high-quality development in cities.

Compared to the previous urban-rural master planning, the national spatial master planning has undergone significant changes in terms of planning concept, content, technical standards, and platforms: 1. In terms of planning concept and content, the national spatial master planning places greater emphasis on the protection of arable land and the ecological environment. It advocates for a "bottom-line" thinking approach and emphasizes boundary control. Before allocating land for construction purposes, planners are required to conduct evaluations of the resource and environmental carrying capacity of the planning area, as well as the suitability of land development in the national spatial context. This process involves clearly defining the three zones and three lines, reflecting the trend of focusing on ecological and cultural heritage preservation in planning work. This also necessitates comprehensive and solid research and data collection during the current stage, with a considerably larger workload for analyzing existing data compared to the previous urban master planning approach. 2. In terms of planning regulations, the national land spatial planning prioritizes the "integration of multiple plans into one". As a

result, there have been reforms in planning regulations, particularly in land classification standards. In addition to more detailed delineation of non-construction land, the national land spatial planning incorporates content related to marine planning, making the planning content more comprehensive. 3. In terms of technical platforms, traditional urban master planning mostly relied on CAD software. In contrast, national land spatial planning is built upon the foundation of the national spatial basic information platform. All planning content needs to be input into the platform's database. Planners are required to be proficient in using the data platform and have a higher level of proficiency in GIS software operations.

In summary, the national spatial master planning encompasses a richer content and places stronger emphasis on planning values such as ecological priority and people-oriented development. It also prioritizes the foundation of data analysis in planning. Consequently, the industry's development demands planning professionals with analytical and innovative abilities, rather than merely being draftsmen. national land spatial planning represents the development trend in the planning industry and is a key area of focus for industry reforms promoted by the government. It also presents significant challenges to the teaching of planning and design courses, necessitating timely adjustments to the content and teaching methods of these courses in higher education institutions. This is crucial for nurturing practical and industry-ready talents that meet the evolving needs of society.

2. The Challenges in Teaching Urban Master Planning under the Background of national land spatial planning

In general, national land spatial planning has undergone significant reforms in terms of planning content, standards, and data platforms. The scope and content of urban master planning have become more comprehensive compared to the previous iterations. Consequently, the following challenges have emerged in teaching the subject:

(1) Extensive course content: Urban master planning itself encompasses a wide range of complex topics. It includes aspects such as current situation analysis, urban industrial planning, nature positioning, urban development strategies, land layout, public and commercial service facilities, green landscapes, comprehensive disaster prevention, and more. With limited class hours (only 72), it becomes challenging to cover all the necessary knowledge and allocate sufficient time for guiding students in practical assignments. Moreover, the implementation of national land spatial planning introduces additional requirements such as environmental carrying capacity assessment, suitability evaluation for land development, delineation of specialized areas and protected ecological lines (three zones and three lines), as well as considerations for coastal city planning that involves marine development and construction. Explaining these additional knowledge points and allowing students to engage in practical exercises would require a significant number of class hours, which cannot be adequately covered within the constraints of 72 hours. Therefore, collaboration among multiple courses becomes necessary.

(2) Lack of conceptual framework awareness among students: Due to the extensive and intricate nature of national land spatial planning and its diverse knowledge points, students often struggle to form a systematic knowledge framework and comprehend the key aspects. Urban master planning involves a wide range of content, and with the addition of environmental assessment, suitability evaluation for land, and the delineation of three specialized zones and three ecological lines, the complexity only increases. Conceptually, students need to understand the macro-level aspects of urban positioning and development strategies, the mid-level considerations of land and facility layout, as well as the utilization of various facilities and urban aesthetics. The overall breadth of the master planning content can overwhelm students, leading to a tendency to simply memorize individual knowledge points without achieving a holistic understanding and integration.

(3) Lack of innovation awareness and weak data analysis skills among students: Students in private colleges generally have weaker foundations and lack planning conceptualization and innovative thinking

skills. Based on feedback from internship sites in recent years, although students demonstrate diligence during internships and satisfactory professional skills, various organizations have expressed concerns about the students' insufficient ability to conceive planning proposals. In particular, they struggle to integrate current mainstream planning ideologies into their design plans. This deficiency primarily stems from students' inadequate theoretical foundations and analytical thinking training. Additionally, the early development of urban and rural planning programs in private colleges focused more on developing drafting skills, neglecting the cultivation of data analysis abilities. However, as urban development increasingly emphasizes scientific and rational approaches rather than solely focusing on aesthetically pleasing drawings, the industry's demand for skills in data analysis and innovative conceptualization continues to grow. Therefore, it is crucial to prioritize the enhancement of these skills in future course teaching.

As a private independent college specializing in human geography and urban-rural planning, our educational objectives are primarily focused on the cultivation of applied talents who can adapt to industry development. However, as urban-rural planning continues to integrate with new technologies such as big data and geographic information, the demands of planning work are gradually increasing. Private colleges, due to the limitations of four-year study programs, face constraints in terms of instructional time. Therefore, it is necessary to reform our teaching methods and improve teaching efficiency in order to realize the cultivation of practical talents.

3. Practical Exploration of Teaching Reform of Urban Master Planning Based on OBE Teaching Philosophy

3.1 The Concept and Characteristics of OBE Teaching Philosophy

The teaching philosophy of "Outcome-based Education" (OBE), first proposed by Spady in 1982[1], quickly gained attention in the field of education and became a mainstream concept in Western educational reforms[2]. This philosophy advocates for teaching to be guided by learning outcomes. In the teaching process, the desired abilities and levels of achievement that students need to develop are determined in advance. These anticipated goals are then used to design the teaching process, and timely assessment and evaluation of student learning outcomes are conducted [3]. Research on the OBE teaching philosophy in China started relatively late and was introduced in the 21st century, prompting educational reforms in our country. Currently, research on the OBE educational concept in China primarily focuses on theoretical understanding[4], course design[5,6], practical application[7,8], and other aspects. Through exploration and practical implementation, scholars have significantly improved classroom teaching effectiveness through teaching models based on the OBE philosophy. It has played an optimizing role in constructing competence indicators for professional development, adjusting course structures, developing instructional designs, and evaluations [9].

In general, the OBE teaching philosophy helps to fully unleash students' learning autonomy and transforms the traditional teaching model characterized by one-sided teacher-centered instruction. By being outcome-oriented, OBE strengthens the targeted nature of teaching work and enhances teaching efficiency. Additionally, it places greater emphasis on adopting flexible and diverse teaching approaches for different students. Therefore, it is highly suitable for courses in urban-rural planning and design that prioritize the enhancement of practical skills.

3.2 Reforming Teaching in Urban Master Planning Based on the OBE Teaching Philosophy

3.2.1 Setting multidimensional development goals based on student needs analysis

Guided by the analysis of students' various learning situations, such as weak theoretical foundations, limited ability to apply knowledge flexibly, insufficient design and practical skills, and a notable disparity in learning progress accumulated over three years, the teaching goals for urban master planning are determined based on innovation, higher-order thinking, and challenging aspects. Through the study and practice of this course,

students will be able to accurately assess urban development issues and potentials using fundamental theoretical knowledge. They will present rational urban development objectives, creatively devise city land layout plans, and form a correct planning value system. The set goals encompass three dimensions: value shaping, competency development, and knowledge transmission (as shown in Figure 1).

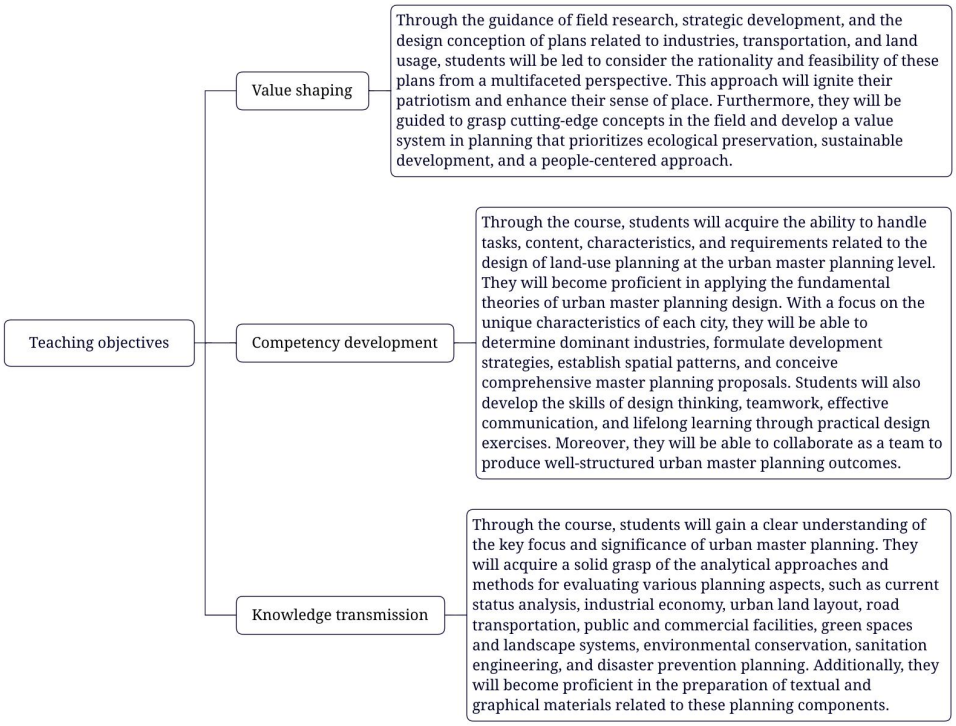

Figure 1. Teaching Objectives

3.2.2 Revamping course content reform in line with industry development trends

The implementation of national land spatial planning will lead to significant changes in planning content, land classification standards, and planning approaches. This educational reform aims to adjust the course syllabus and content by integrating it with courses on land use planning and GIS software operation. Through providing relevant data and case studies, students will complete assessments of resource and environmental carrying capacity, as well as suitability evaluations for territorial spatial development, as outcomes of these courses. Furthermore, thematic chapters on "Three Zones and Three Lines" will be added to the course content. Based on the completed dual evaluations, the urban space, agricultural space, and ecological space of the case study area will be delineated. Additionally, the new planning classification standards and design approaches will be incorporated into the design course, forging a connection with the latest industry developments. This alignment with industry trends will better equip students to meet market demands in their future employment endeavors.

3.2.3 Enhancing teaching methods through systematic thinking

By incorporating mind mapping techniques, students will be guided in memorizing key concepts and constructing a comprehensive knowledge framework. Presenting the main design principles and strategies of the overall planning in a structured flowchart format will transform abstract content into concrete and manageable work procedures. This approach will provide students with clear directions for their design thinking, fostering a systematic approach to planning.

Furthermore, adopting a problem-based learning (PBL) approach will empower students as active learners and emphasize teamwork as the core of classroom instruction. The practical component of the course will employ project-based, experiential, and gamified teaching methods, engaging students and enhancing their learning focus and initiative.

3.2.4 Enhancing practical skills development through improved integration of competitions and internship feedback mechanisms

Integrating the course with design competitions facilitates students' engagement in external learning and fosters their motivation to learn. As the future of the planning industry lies in national land spatial planning, ongoing research and practical applications in this field continuously introduce innovative planning concepts. Such concepts cannot be effectively taught solely through traditional coursework. Therefore, combining the overall planning course with national national land spatial planning competitions encourages students to proactively explore the current development trends and research achievements in this field. This approach cultivates students' ability to engage in continuous learning and broaden their horizons.

Collaborating with actual organizations allows the teaching process to receive practical feedback. By collecting and summarizing feedback from previous internship placements, adjustments and improvements can be made to the teaching content. Furthermore, utilizing existing partnership-based internship sites provides an avenue for validating the educational outcomes, showcasing the distinctive feature of our institution in nurturing applied talents.

4. Conclusions

Establishing and implementing the national land spatial planning system has presented opportunities for the development of urban and rural planning industries. However, it has also posed significant challenges to the field of urban and rural planning education. Higher demands are placed on the teaching content, level of difficulty, and student competency standards. As a second-tier university, our urban and rural planning education must continually adjust its teaching methods. To meet these challenges, it is necessary to enhance the teaching model by continuously improving the teaching objectives, content, and methods. Interactions between universities and enterprises need to be strengthened, and the cultivation of new technologies should be emphasized. Only through these efforts can our institution contribute to the education of planning professionals who are equipped to meet the needs of future urban development.

Acknowledgments

Supported by the Higher Education Teaching Reform Research Project (2021J045) and the Ideological and Political Education Demonstration Course, Urban Master Planning (2022KCSZ002), provided by Guangzhou Xinhua University.

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