Discussion on O+P Landscape Architecture Teaching Mode under the Background of Internet

Xiaobo Wang, Weinan Liang* and Hui Wang

College of Architecture and Arts, North China University of Technology, Beijing, China

*Corresponding author e-mail: liangwn@ncut.edu.cn

Abstract. The landscape architecture teaching model under the Internet background needs to make full use of the O+P model that combines online teaching with on-site offline practice. The curriculum group of landscape architecture is divided into three types: knowledge, operation, and practice. Each type of course uses different online and offline teaching methods. This teaching mode is conducive to the integration of internationally superior teachers, demonstrates the practical value of landscape architecture, and enhances college students' awareness of serving the society.

Keywords: MOOC, Online, Practice, Landscape Architecture, Curriculum Group

1. Introduction

The combination of the Internet and higher education is an inevitable development trend. Online teaching through the Internet can connect first-class experts and scholars at home and abroad, and its feasibility has been verified. The teaching of landscape architecture needs to strengthen the practicality while docking network knowledge, and construct the curriculum system with the goal of talent production and direct service to the society. The multi-faceted combination of online teaching and offline practice is a new model suitable for landscape architecture teaching under the background of the Internet [1]. It is of great value to make full use of the extensive Internet teaching resources, seize opportunities, and improve the landscape architecture teaching system.

1.1 The Combination of the Internet and Higher Education Is an Inevitable Development Trend

Under the influence of COVID-19, many universities all over the world are adopting various types of online teaching. The Internet is like a strong wind, with an irreversible trend, profoundly affecting higher education [2].

Online courses such as MOOC (massive open online courses) have developed extremely rapidly, which has brought tremendous impact and challenges to classroom teaching in colleges and universities. In 2012, top universities in the United States successively set up online learning platforms. In 2014, China launched China's MOOC platform. At present, the well-known MOOC platforms include foreign EDX, Udacity, and Cousera, and domestic Chinese university MOOC and School
Online. Many MOOC resources provide a rare opportunity for the teaching reform of colleges and universities.

In the actual teaching process, teachers from various colleges and universities use multiple platforms such as Zoom, Enterprise WeChat, Tencent Classroom, Tencent Conference, Rain Classroom, Blackboard (Bb), etc., to teach remotely. The knowledge content of the courseware is explained to students remotely by live broadcast or audio conference. Students submit assignments through these platforms, and teachers make online comments and give guidance. Some schools also combine virtual reality technology, multimedia crossover and interpersonal interaction to construct virtual simulation experiments and conduct networked teaching of experiments [3, 4].

1.2 Practice Is the Direct Goal of Landscape Architecture Teaching
Landscape architecture is a national first-level discipline, which is the discipline of planning, design, protection, construction and management of outdoor natural and artificial environments [5,6]. Its core content is outdoor space creation, and its fundamental mission is to coordinate the relationship between man and nature. Landscape architecture has the characteristics of a strong applied discipline, and most of the talents it trains need to serve the society through project practice. The "Undergraduate Guiding Professional Standards for Landscape Architecture in Colleges and Universities" pointed out that the professional education of landscape architecture emphasizes the professional knowledge system and professional practice system. The professional knowledge needs to be applied to practice to realize the transformation of landscape architecture to serve people [7]. In the field of landscape architecture education, there have been many discussions on practical teaching. Just like Liu Yuelai of Ji University and others used landscape environmental surveying and mapping practice as an example to analyze practical teaching [8], Liu Tong and others took the "Garden of the Soul" project as an example to discuss the cultivation of practical skills in landscape architecture teaching [9], and Liu Hui and others' practical teaching of habitat garden. At the same time, the community garden co-construction advocated by Liu Yuelai integrates the practice of universities, enterprises, government, and residents, and truly serves the society through practice. This way of going deep into the site has been widely praised by students, government and residents [10].

2. O+P Landscape Architecture Teaching Mode
O+P teaching mode: O is the abbreviation of Online Online, P is the abbreviation of Practice Practice, O+P teaching mode refers to the teaching mode that uses Internet online teaching (O) and in-depth on-site practical teaching (P). The O+P teaching mode is very suitable for teaching landscape architecture.

The teaching mode of "online MOOC" and "offline practice" can better convey the knowledge of landscape architecture and strengthen the nature of landscape architecture practice and service to society. The "offline practice" teaching model can use the Internet to achieve a more scientific and effective organization. Operational and practical teaching have the possibility of online communication and sharing.

Different courses of landscape architecture are suitable for different teaching modes. For knowledge-based courses, the content of MOOCs should be fully utilized to connect with first-class teaching resources at home and abroad. For operational and practical courses, it is necessary to strengthen the integration with actual projects, take root in cities and villages, penetrate into communities, transform the theoretical results of universities, and cultivate students' awareness of serving the society.
2.1 Construct Knowledge-Based, Operational and Practical Courses
Study the teaching framework of landscape architecture majors in excellent colleges and universities, and summarize the curriculum group of knowledge courses, operational courses and practical courses.

1) Construct a knowledge-based curriculum group
Knowledge-based courses are knowledge-oriented, such as the principles of landscape architecture planning and design, and the history of Chinese and foreign landscape architecture. The teaching content is knowledge-based, focusing on the understanding and mastery of knowledge.

2) Design an operational course theme
Operational courses are subject-oriented, such as a series of courses on landscape architecture planning and design. The teaching content is operability, focusing on the application of knowledge in actual projects, and it needs to strengthen the combination with practice. Different teachers can form a teacher guidance team and establish studios with different themes, and students can choose independently. The setting of the Studio subject should rely on actual projects and serve the society. Such as themed Studio community garden + community activity organization, themed Studio micro garden + alley life transformation, themed Studio greenway + residents' life service along the line, etc.

3) Implement practical teaching courses
Practical courses are project-oriented, such as internships for landscape architects, garden botany, etc. The teaching content is practical, focusing on practical operations, and requires the use of experienced designers, engineers, and even construction workers and other human resources. Relying on specific actual projects to improve students' ability to control actual projects.

2.2 Exploring the Ways of Networked Teaching of Different Nature of Course Groups
1) MOOC and MOOC + explanation
For knowledge-based courses, the teaching methods can be self-directed MOOC and MOOC + explanation, so that students can directly receive the teaching of the best teachers in the country. Depending on the level of students, colleges and universities can choose to choose independent MOOC, or MOOC + explanation. Students have strong receptive ability and self-discipline, so they can choose independent MOOC. Students have limited comprehension ability and need supervision, so they can choose MOOC + explanation for teaching.

2) Remote teaching + offline in-depth site
For operational courses, the teaching focuses on the teachers' concentrated and individual tutoring for students on specific topics. Teaching methods can use corporate WeChat, Zoom, etc. to use remote teaching methods.
teaching, or face-to-face teaching. During the teaching process, it is necessary to go deep into the subject site many times, conduct surveys and research, organize public participation in the design, report on the project to experts and design service objects, listen to opinions and modify the plan. Throughout the teaching process, teachers and students jointly organize various activities related to the subject, make full use of the convenience of the Internet, establish WeChat groups for design services, organize online voting, and questionnaire surveys. The teaching results are publicized with the help of online videos, so that everyone can see the future of the site, enhance the public's sense of belonging and autonomy, and increase their willingness to make full use of the landscape environment. Excellent teaching results can be used to guide site construction.

3) Network sharing + "hands-on" teaching

For practical courses, in the teaching process, experts and engineers from design institutes can be invited to give guidance through Internet technology, and at the same time strengthen the offline communication of "hands-on" teaching practical work experience. Such courses also need to explore the networked application and promotion of teaching models, so that more human resources can join the ranks of imparting practical experience, so that more students can acquire relevant skills.

![Excellent Colleges and Universities Landscape Architecture Teaching System](image)

Figure 2. Teaching focus of different curriculum groups

3. Conclusion

Landscape architecture teaching under the background of the Internet, its teaching content uses MOOC resources to enable students to establish a complete knowledge system, and cultivate students' innovative practical ability through thematic and project-based operation and practical courses; the teaching method combines online MOOC and online courses. The lower entry site is combined with normalization, breaking through the traditional form of teaching in classrooms; the network mode of practical teaching seeks new possibilities for the promotion and dissemination of practical teaching.

The O+P landscape architecture teaching model clarifies the practical teaching purpose of landscape architecture in the context of Internet +, based on the essence, highlighting the value of landscape architecture higher education; using Internet technology to strengthen the practice of landscape architecture, so that college students can establish a service to society The awareness of cultivating its methods and skills to serve the society, so that the talents trained by higher education can directly meet the needs of society.

In future research, the following content needs to be focused on:

1) For knowledge courses, collect network information, summarize and summarize the existing online resources of various courses that can be used in landscape architecture.
2) For operational courses, summarize the types of topics that are closely integrated with practice, and analyze the methods and skills of remote teaching.

3) For practical courses, integrate human and environmental resources, establish an off-campus practical professional instructor system, and explore environmental resources that may be used for practical teaching. In addition to actual projects, resources such as virtual reality VR environments can also be developed.

4) Explore operational courses and practical courses, and the possibility of network promotion.

Acknowledgments
The research was funded by "Yuhang" Talent Project of North China University of Technology. The project title was “Competition to promote teaching-training and improvement of teaching”. Item Number: 215051360020XN160/004.

References
[1] D. Luo, Z. Zhang, Y. Pan, and H. Tian, “Exploration of teaching mode of engineering courses combining MOOC and project-based teaching,” Research in Higher Education of Engineering. Wuhan, vol. 02, pp. 164–168, 2020.
[2] F. Wang, “Research on Classroom Teaching Reform of Visual Communication Specialty in MOOC Environment,” Home Drama. Wuhan, vol. 08, pp. 132–134, 2020.
[3] Z. Dai and C. Li, “Multi-dimensional construction and practice of economic virtual simulation experiment teaching system,” China Management Informationization. Changchun, vol. 33, pp. 223–225, Jul 2019.
[4] M. Shen, X. Zhan, R. Yuan, H. Lin, C. Ma, Q. Wu, and J. Huang, “Construction of Multidimensional Experiment Teaching System in Chinese Medicine Majors,” Pharmaceutical Education. Nanjing, vol. 22, pp. 33–36, Dec 2017.
[5] “Demonstration Report on Adding Landscape Architecture as the First Level Discipline,” Chinese Landscape Architecture. Beijing, vol.05, pp. 4–8, May 2011.
[6] L. Qi, Y. Lv, “Exploration and practice of unbounded classes teaching for urban planning specialty under the background of science of human settlements,” Journal of Architectural Education in Institutions of Higher Learning. Chongqing, vol. 01, pp. 99–105, Feb 2019.
[7] X. Li, “Research and Practice of the Undergraduate Teaching System Reform of Landscape Architecture Specialty, Beijing Forestry University”, Chinese Landscape Architecture. Beijing, vol. 01, pp. 1–5, Jan 2008.
[8] Y. Liu, N. Dong, M. Wang, and D. Dai, “Inheritance and Infiltration—An Analysis of the LA Practical Internship of Tongji University—Case Study of Landscape and Environmental Mapping Internship,” Chinese Landscape Architecture. Beijing, vol. 12, pp. 71–75, Dec 2013.
[9] T. Liu and Q. Lin, “Discussing Value & Practical Skill Improvement in Landscape Architecture Education—Case Study of Garden of Hearts,” Chinese Landscape Architecture. Beijing, vol. 07, pp. 102–106, Jul 2013.
[10] M. Wang, S. Liang, and J. Wang, “Exploration on Transformation of Teaching Thought and Establishment of Learning Path in Landscape Architecture Theory,” Chinese Landscape Architecture. Beijing, vol. 26(S2), pp. 41–44, Dec 2019.