

Research on the Construction Path of the Training Model for Applied Talents in the Architecture Major of Universities in the New Era

Huinan Liu, Yukang Cheng

Quzhou University, Quzhou 324000, Zhejiang, China

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: In the context of the new era, deepening education reform and improving the quality of talent cultivation are important measures for universities to align with industry trends and the development needs of students. With the continuous growth of the economy, the construction industry is undergoing rapid development and transformation, and there is an increasing demand for high-quality and high-level applied talents, which poses certain challenges to the architecture majors in universities. Therefore, universities should actively follow the industry development trends and the characteristics of talents, clarify the talent cultivation objectives, optimize the professional teaching system, and promote the high-quality development of education. The cultivation of applied talents in the architecture major of universities is not only an internal requirement for the development of the construction industry but also an important part of the country's innovation-driven development strategy. It is of great significance for promoting scientific and technological progress, enhancing cultural confidence, and promoting the comprehensive development of the economy and society.

Keywords: Interdisciplinary; New era; Architecture; Innovative thinking; Talent cultivation; Industry

Online publication: July 1, 2025

1. Introduction

With the continuous development of society, the construction industry has gradually become a major force in promoting economic development. There is a sharp increase in the demand for applied architecture talents who possess professional knowledge and skills, as well as innovative awareness and design capabilities. In the context of the new era, the development of the construction industry needs to meet the trends of the times and the characteristics of technological development. This requires universities to actively promote the teaching reform process and cultivate more high-level applied talents for the industry. In the new-era context, optimizing the talent-cultivation model for the architecture majors in universities is not only an important measure to improve teaching quality and talent-cultivation quality, but also a crucial topic for enhancing the educational level of universities, keeping up with industry changes, and serving national development. It has far-reaching significance for

cultivating high-quality and high-level professionals who meet the development needs of the construction industry.

2. Training requirements for applied talents in the architecture major of universities in the new era

2.1. Mastering advanced information technology tools

With the transformation of the industry and the changes in job requirements, the talent-cultivation objectives of the architecture major in universities have changed. From the perspective of the teaching characteristics of the architecture major, its teaching resources tend to focus on practical teaching, aiming to cultivate students' practical operation ability and problem-solving ability^[1]. At the same time, universities should also guide students to maintain a positive learning attitude based on the specific learning situation and talent-development needs, and continuously improve and expand their knowledge systems according to industry changes, to better adapt to the development of the construction industry and lay a good foundation for serving the construction engineering industry.

In addition, with the update and iteration of information technology, the software tools used in the construction industry are constantly changing, including measurement, design, and drawing software. Under such circumstances, university teachers should help students master advanced information technology tools and enable them to have the ability to learn and adapt to new technologies. Finally, in the context of the new era, the talents required by the construction industry should have innovative thinking and learn to transform from a two-dimensional design concept to a three-dimensional building information model, to improve the efficiency and quality of architectural design and contribute to the informatization development of the construction industry^[2].

2.2. Improving independent design ability

With the continuous transformation of the construction industry, the demand for applied talents with innovative abilities is increasing rapidly. Universities should deeply integrate the characteristics of industry transformation and talent requirements, so that the talent-cultivation plan must be closely aligned with the actual needs of industry development, and pay attention to the in-depth integration of theory and practice^[3]. In particular, it is necessary to strengthen the cultivation of software application ability to meet the constantly improving talent standards in the construction industry. Specifically, on the one hand, students majoring in architecture in universities not only need to deeply understand and master the principles of architectural design, including knowledge in aspects such as space planning, functional layout, and plastic arts, but also should have the thinking and innovative ability for independent design. Teachers can start from practical requirements and help students create aesthetically pleasing and practical design plans by using factors such as graphics, text, and data, and combining multiple dimensions such as the environment, culture, and society^[4]. At the same time, students should also be familiar with building structures, building safety, and the performance of building materials. With the assistance of architectural design software, they can design buildings with stability and safety.

On the other hand, in the teaching process of the architecture major, it often involves a lot of interdisciplinary knowledge, such as environmental science, energy efficiency, and interior decoration. Therefore, applied innovative talents in the architecture major should have good interdisciplinary integration capabilities, be able to effectively coordinate knowledge and resources in different professional fields, and achieve the overall optimization of construction projects.

2.3. Meeting industry requirements

With the continuous changes in the construction industry market and technological updates, the construction industry's demand for professionals with professional technical skills, innovative abilities, and interdisciplinary awareness is increasing day by day^[5]. This is not only the overall demand of the industry but also the key driving force for promoting the sustainable development of China's construction industry. On the one hand, in the process of cultivating applied architecture talents, universities should closely combine with the actual needs of the industry, closely integrate theoretical knowledge with practice, and improve the teaching efficiency and quality of various links such as architectural design, construction, and management, so that students can better serve the development of the construction industry. On the other hand, architecture talents with application and innovation abilities are the key to promoting the sustainable development and innovation of the construction industry. Such composite talents dare to try more novel technologies, design methods, and design materials, and are sensitive to capturing market and technological changes, promoting the construction industry to develop in a more intelligent, green, and efficient direction.

3. Problems existing in the cultivation of architecture majors

3.1. High proportion of theoretical knowledge explanation

Compared with other majors, the architecture major has certain characteristics such as practicality, comprehensiveness, interdisciplinarity, and applicability. These characteristics indicate that universities should actively carry out practical teaching and increase the proportion of practical teaching. However, according to the current teaching system of the architecture major in universities, the explanation of theoretical knowledge still occupies the main teaching proportion, which has an adverse impact on the cultivation of students' practical abilities^[6]. The proportion of practical courses in architecture is low, and it does not cover relevant knowledge such as engineering drawing, field measurement, and model making. As a result, students have difficulty transforming theoretical knowledge into practical operations, thus reducing the teaching effect. In addition, due to the single explanation of theoretical knowledge, students can only passively accept knowledge. Over time, students will form a fixed thinking mode and find it difficult to solve practical problems with the knowledge they have learned. This not only affects the teaching effect but also hinders the talent-cultivation plan of universities to a certain extent, resulting in students' inability to meet the needs of industry development^[7].

3.2. Insufficient attention to practical teaching

In the past talent-cultivation system, some universities paid more attention to theoretical knowledge teaching and often ignored the importance of practical teaching, resulting in problems such as imperfect infrastructure for practical teaching, an incomplete curriculum system, and inadequate construction of practical internship bases, which are difficult to meet the development needs of students^[8]. At the same time, because architecture courses are highly practical, the lack of practical teaching will affect the cultivation of students' abilities in material perception, understanding of construction details, and on-site management. Moreover, the practical teaching methods are relatively single and traditional, mainly focusing on visits and simple operations, lacking comprehensive and innovative practical projects based on projects and problem-oriented. This is not conducive to cultivating students' innovative thinking and the ability to solve complex problems. Due to limited practical opportunities or practical tasks that do not match students' interests, some students have low enthusiasm and participation in practical sessions and fail to make full use of practical opportunities to improve their abilities.

4. Training strategies for applied talents in the architecture major of universities in the new-era context

4.1. Optimizing the curriculum system and strengthening the effectiveness of professional course teaching

As a comprehensive major, architecture in universities has strong practicality. In order to improve the quality of talent cultivation, universities need to optimize the curriculum teaching system in combination with industry employment requirements, job-specific employment standards, the current situation of courses, and talent-cultivation objectives. In the current teaching modules, some universities divide the curriculum system into three teaching modules: professional foundation, vocational foundation, and disciplinary foundation. According to the systematic principle of the teaching system, the teaching proportion of courses in each module should be scientifically adjusted to increase the importance of practical courses in the cultivation of architecture majors^[9]. Take practical teaching as an important part of the curriculum system, so as to strengthen core courses and improve the quality of talent cultivation.

First, while retaining the existing teaching advantages, universities need to sort out and integrate the courses of the architecture major to form an internally related course series, promoting the organic connection and integration of theoretical teaching and practical teaching. This allows students to apply the knowledge they have learned to practical activities while learning professional theoretical knowledge, so as to better improve their practical abilities and further improve the quality of talent cultivation^[10]. Second, universities should actively give play to the leading role of architectural design teaching in the entire talent-cultivation process and make architectural design courses a compulsory part of the curriculum system for architecture majors. At the same time, in architectural design courses, teachers should focus on cultivating students' architectural design abilities, especially their independent design abilities after the design plan is determined. For example, teachers can guide students to participate in competitions to exercise their design thinking and adaptability. Finally, teachers can divide the teaching system of architecture courses into three stages. The first stage focuses on cultivating students' basic design abilities, such as hand-drawn sketches and software applications; the second stage gradually increases the complexity and depth of design, such as single-building design and building-group design, to cultivate students' design abilities and innovative thinking^[11]; the third stage can cultivate students' professional adaptability and professional qualities in combination with industry requirements. In this way, the curriculum system can be optimized, and the effectiveness of professional course teaching can be improved.

4.2. Implementing the studio teaching model to exercise students' practical application abilities

First, universities should establish a working scene close to the real construction industry according to the development status of the industry and talent requirements, and guide students to conduct practical learning in a real-life scenario. Specifically, universities can cooperate with relevant enterprises to introduce some real projects, allowing students to participate in the entire process from project planning, design, implementation, to evaluation^[12]. This enables students to experience a real working environment and exercise their project management abilities. At the same time, universities also need to form a tutor team in each studio, consisting of in-school teachers, industry experts, and designers. These tutors should have rich practical and teaching experience, guide students to complete projects, and help them solve practical problems in the projects, so as to cultivate their professional adaptability and employment competitiveness.

Second, the architecture major in universities has an interdisciplinary nature. In the studio, tutors can

encourage students to cooperate with studios of other majors such as structural engineering, environmental design, and urban planning to form interdisciplinary teams and complete projects together. This can not only improve students' comprehensive problem-solving abilities but also cultivate their teamwork spirit^[13]. In addition, under the studio teaching model, teachers should pay attention to cultivating students' practical abilities, guide students to independently design works, and comprehensively exercise their design abilities from sketch drawing to 3D modeling and then to physical model making. Teachers should also organize students to conduct on-site inspections of construction sites to understand the construction process and technology, and participate in construction supervision to develop targeted and precise design plans, so as to ensure the quality of the works.

Finally, after the studio teaching model is implemented, university teachers can organize work exhibitions or assessment meetings according to students' performances, allowing students to display their design results and receive evaluations from other students, teachers, and industry experts. This can improve students' expression abilities and self-confidence and help them understand industry standards and market demands. During the implementation of the studio model, universities should deepen cooperation with enterprises to provide students with more realistic teaching resources and advanced practical technologies.

4.3. Utilizing information technology to innovate the teaching model

In the context of the new era, information technology has developed rapidly and been widely applied in various industries, including the education field. The integration of information technology and education and teaching can effectively break the shackles of the traditional teaching system, innovate the teaching model, stimulate students' learning interests, and thus improve the quality of applied-talent cultivation.

First, implement blended teaching. In the process of architecture teaching, teachers should use information technology to integrate diverse teaching resources. According to the teaching characteristics of the architecture major, teachers can use online platforms such as open-network courses, online education platforms, and big-data learning platforms to provide students with rich online learning resources, including teaching courseware, case summaries, and project analyses, to meet the needs of students at different levels and with different interests. At the same time, teachers should also give full play to the advantages of offline classroom teaching. After students have a preliminary understanding of the knowledge, teachers can organize students to answer difficult points in classroom teaching and carry out corresponding practical teaching activities^[14]. For example, project-based teaching, case-based teaching, and practical operations can be carried out to transform the theoretical knowledge mastered by students.

Second, adopt the flipped-classroom model. The core of the flipped-classroom teaching model is to center around students. It realizes a flip in teaching forms, teaching processes, and other aspects, so as to cultivate students' autonomous learning abilities and exploration abilities. In the process of architecture teaching, teachers can guide students to use online learning platforms to preview the basic theories and concepts of the course in advance; in classroom teaching, the problems summarized by students can be discussed intensively and practical operations can be carried out, so as to improve the teaching effect and quality^[15]. At the same time, teachers can also use the powerful functions of information platforms to solve students' problems online and increase the interaction frequency between teachers and students. Teachers can provide personalized guidance according to students' needs and learning situations.

Third, virtual reality technology and simulation technology in information technology play an important role in improving teaching quality. Teachers can use virtual reality technology and augmented reality technology to

construct virtual working environments, allowing students to exercise their skills and conduct practical operations in real-life work scenarios, improving students' understanding of future work and enabling them to better meet the employment requirements of the construction industry.

5. Conclusion

In conclusion, in the context of the new era, in order to better adapt to the transformation and change of the construction industry, universities urgently need to adjust the current teaching system and talent-cultivation plan, and cultivate students into applied talents who can better adapt to industry development and the trends of the times. Therefore, universities can improve teaching quality and talent-cultivation quality by optimizing the curriculum system, implementing the studio teaching model, and utilizing information technology, so as to output higher-quality applied talents for the industry and enable them to better serve the sustainable development of the construction industry.

Disclosure statement

The authors declare no conflict of interest.

References

- [1] Liu R, 2025, Exploration on the Teaching Practice of Architecture Courses From the Perspective of the Integration of “Industry–University–Research”. *Learning Weekly*, 2025(11): 7–9.
- [2] Yu R, 2024, Ideological and Political Teaching Design of Architecture Courses Under the Background of “Internet+” – Taking the Course Practice of “Architectural Design Principles” as an Example. *Internet Weekly*, 2024(23): 38–40.
- [3] Xiong D, 2024, Research on the Path of the Innovative Development of the Teaching Model of Applied Undergraduate Education Boosted by Artificial Intelligence – Taking the Architecture Major as an Example. *Neijiang Science & Technology*, 45(11): 97–99.
- [4] Huang N, Luo H, Ying Z, 2024, Exploration and Innovation of the “One-Body, Two-Wings” Model for Cultivating Applied Talents in the Architecture Major Under the OBE Concept. *University Education*, 2024(20): 137–142.
- [5] Tang H, Peng L, 2024, Research on the Talent–Cultivation Model of the Architecture Major Based on the Studio System. In: Henan Private Education Association. *Proceedings of the 2024 Higher Education Development Forum and Ideological and Political Seminar (Volume I)*. Hunan Institute of Technology, 2024: 122–124.
- [6] Cai C, Shi Q, Jiao L, 2024, Exploration and Practice of the Talent–Cultivation Model for the Architecture Major in Local Applied–Oriented Universities Facing the New Engineering. *Industrial Innovation Research*, 2024(04): 178–180.
- [7] He L, 2023, Research on the Talent–Cultivation Path of the Architecture Major With Mining Characteristics – Taking China University of Mining and Technology (Beijing) as an Example. *Journal of Architectural Education in Institutions of Higher Learning*, 32(03): 75–83.
- [8] Ma M, Li L, Ma Z, 2025, Exploration and Practice of the “Building Structure” Course in the Architecture Major Under the Context of School–Enterprise Cooperation. *International Journal of Social Science and Education Research*, 8(2): 309–314.
- [9] Jiang J, Goepel G, Crolla K, et al., 2024, Impact of Extended Reality on Students’ Interest, Self–Efficacy and

Performance in Architecture Education: A Mixed-Methods Research. *Advanced Engineering Informatics*, 62(PB): 102744–102744.

- [10] Zhang H, 2022, Research on the Training Plan for Applied Talents in the Architecture Major of Local Independent Colleges Under the Background of the New Engineering. *Heilongjiang Human Resources and Social Security*, 2022(09): 100–102.
- [11] Zhang N, Hao J, 2021, Exploration and Innovation of the Training Model for Applied Talents in the Architecture Major Under the OBE Concept. *Housing Industry*, 2021(Z1): 89–91.
- [12] Guo J, 2020, Research on the Teaching Reform of the Fifth-Grade Practical Courses in the Architecture Major With the “Three-Joint” Model for Cultivating High-Quality Applied Talents. *Chinese Artists*, 2020(06): 259 + 261.
- [13] Zhai Y, Wang N, Liang X, 2020, Research on the Innovative Cultivation of Architecture Majors in Local Universities Against the Background of Green Architecture. *Education Modernization*, 7(36): 44–48.
- [14] Yao Q, 2020, Discussion on the Training Paths for Architecture Majors Based on BIM Technology. *Urbanism and Architecture*, 17(11): 62–63.
- [15] Yu X, 2020, Research on the Optimization of Professional Foundations in the Training Plan for Applied Architecture Talents Under the Background of New Engineering Construction. *Think Tank Era*, 2020(12): 210–211.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.