Research on TACR Teaching Mode of Architectural Postgraduate Course Based on the Cultivation of Scientific Research and Innovation Ability

——Taking Landscape History Theory and Practice Course as an Example

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Abstract

Postgraduate education aims at cultivating students' scientific research and innovation ability, and its course teaching pays more attention to the cultivation of students' ability. Based on the construction problems of graduate teaching reform scheme is put forward, and based on "take the student as the center, ability training as the goal, with teachers to control as the core" of the teaching idea, the teaching content, mode and the final assessment to explore open mode, curriculum theory and practice of landscape architecture history, for example, seeking to conform to the goal of cultivating the graduate students teaching methods, to explore teaching theory and practice of landscape architecture history.

Keywords

Scientific research innovation; Graduate education; Teaching reform; Construction; Landscape architecture theory.

1. Introduction

With the development of construction industry, the increasingly rigorous standard requirements for graduate students, including the education foundation education course reform outline is put forward based on students, promoting the organic integration of knowledge, ability and attitude, at the same time, in 2013 the ministry of education issued the opinions for the reform of graduate education, put forward: to strengthen education graduate student course, introduces academic frontiers of knowledge, through high quality education method to improve the graduate student's science and technology as well as the academic accomplishment.

Postgraduate education is different from basic education in focusing on broad-field and heavy-interest training models. Its focus and core are to cultivate scientific research and innovation capabilities and to cut into problems and solve problems from different perspectives. Therefore, the teaching of postgraduate degree courses is the highest level of education model with the aim of cultivating postgraduate research and innovation ability, taking curriculum teaching as the starting point, integrating knowledge framework and exercising its speculative ability. To a certain extent, in-depth exploration of the significance of the degree course teaching, setting up a reasonable teaching program that meets the objectives of postgraduate training will help improve the quality of postgraduate training and deliver excellent talents for the society.

The existing degree course system for postgraduate students in architecture is not able to meet the requirements of contemporary research and innovation capabilities, and various aspects of the teaching and learning process. Based on the current situation, taking the historical theory and practice of architectural landscape elective courses as an example, exploring suitable reform programs and implementing them will help improve the quality of graduate students.

2. Problems in the postgraduate course of architecture

2.1 The teaching concept is conservative and lacks innovation

The teaching concept is the theoretical basis for guiding educators to organize and implement teaching activities in the process of educational practice, which directly affects the teaching objectives and teaching methods of teachers in teaching activities. Most teachers follow the previous teaching philosophy, adopting the "teacher-led" approach to imparting knowledge, lacking the awareness to guide students to learn independently, discover problems, analyze problems and solve problems, and use multimedia teaching but still use unilateral teacher classrooms. Lecture-based, lack of innovation and teacher-student empathy in the teaching process, is also not conducive to the cultivation of learning interests.

2.2 Subject orientation is vague and the teaching content is outdated

At present, the colleges and universities offering courses in landscape architecture involve science, engineering, agriculture and forestry, and comprehensive universities, but the analysis of the content and nature of landscape gardens is different. Moreover, for architectural graduate students, the relevant knowledge of landscape architecture is too low, the relevant disciplines are not targeted and there is no complete knowledge system, and there is a lack of clear positioning of the discipline. Moreover, the teaching content of the relevant courses for landscape architecture is quite old. It is only the past teaching plan that follows the original teachings. The lack of cutting-edge knowledge combined with the curriculum is advancing with the times, resulting in partial loss of teaching passion and a dead classroom environment.

Taking the historical theory and practice course of landscape architecture as an example, although the historical process and theory of landscape development should be explained in the teaching process, some teachers in the previous teaching only pay attention to the teaching of the history of unilateral landscape development. Taking the development process of Chinese and Western gardens as the main teaching content, and taking this as the ultimate teaching goal, it lacks the extension of relevant knowledge, ignoring the practical application of landscape architecture in today and the significance of training for architectural graduate students, ignoring the graduate students. The cultivation of scientific research level, innovative perspective and practical hands-on ability.

2.3 The form of assessment is single, ignoring the learning process

In the past, the assessment of the curriculum was based on the assessment of theoretical knowledge. The closed-book examination was used as the test result. There may be problems in the students' perfunctory assessments, such as the use of rote memorization, and the inability to apply their knowledge. Teachers only pay attention to the final assessment results, ignoring the performance of students in the teaching process. As a result, most students do not participate in the curriculum with a learning attitude, but as an inherent task that needs to be completed. This negative emotion and subjective assumptions will make it more difficult for students to achieve satisfaction and a sense of accomplishment in their studies, thus curbing students' interest in research and innovation.

In summary, from the above problems that are prevalent in the postgraduate teaching process of architecture, we can see the current negligence of graduate education. Therefore, in order to improve the quality of teaching and the cultivation of students' learning ability, scientific research ability and innovative ability, it is necessary to make various adjustments to the architectural graduate degree course.

3. Cultivation of scientific research and innovation ability

The ability of graduate research and innovation means that based on the experience of predecessors, based on their own independent thinking, creatively reproduce the understanding of things, propose new ideas and new ideas, and solve problems in the practice process.

Regarding the cultivation of scientific research and innovation ability, Mr. Tang Jiwei once mentioned that the postgraduate training model should shift from focusing on knowledge learning to

knowledge learning and ability training, and more prominently innovating the spirit of innovation and practical ability training. The model also highlights the combination of science and education and the combination of industry and education. The mode is more open and cooperative, and it is tailored according to different needs such as talent diversification needs, subject characteristics and postgraduate individualization requirements. For the construction graduate students, optimizing the curriculum system, updating the teaching concept, broadening the teaching content, and reforming the assessment method are also conducive to the cultivation of their research and innovation capabilities.

All in all, the cultivation of scientific research and innovation ability is not only a problem that needs to be paid attention to in current teaching, but also the cultivation of graduate students is related to the stability of social development and the advancement of science and technology. Paying attention to the cultivation of scientific research and innovation ability of architectural graduate students is not only a call for policy response, but also a continuous exploration on improving the quality of teaching and the quality of postgraduate training. Therefore, the author takes the historical theory and practice course of landscape architecture as the object, and explores the teaching mode suitable for the cultivation of scientific research innovation ability, in order to bring new methods and ideas.

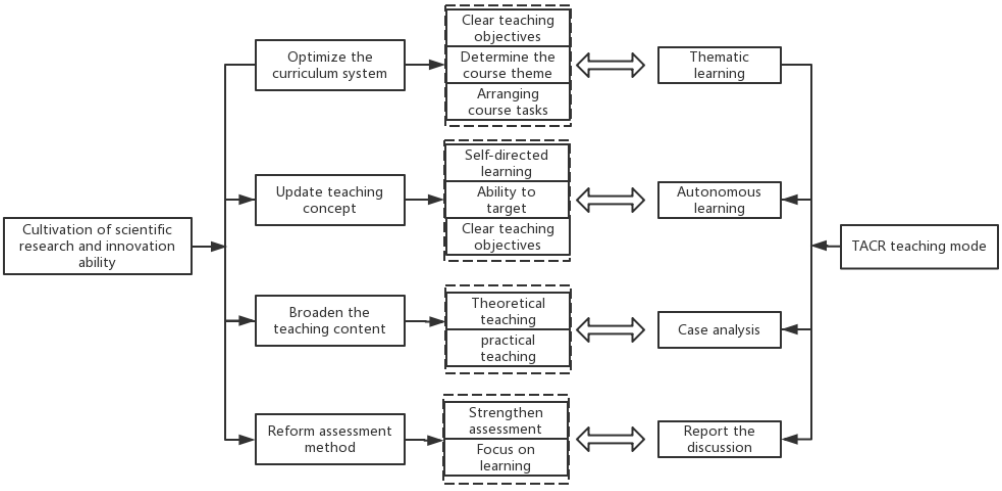

Fig. 1Research and innovation capacity building structure

4. TACR teaching model reform for degree programs

Course teaching is no longer composed of only teachers, textbooks or teaching plans, but consists of basic text materials and teachers and students' learning and experience of the curriculum, and the learning and experience of teachers and students will account for the curriculum. Subject status. And in view of the problems existing in the teaching process, we should focus on the main purpose of cultivating the research and innovation ability of graduate students, and follow the teaching philosophy of "taking self-directed learning as the center, taking the ability training as the goal, and taking the teacher as the core". Establish a TACR teaching model that combines the combination of subject learning and independent learning, case analysis and classroom reporting; design the teaching field of "history theory combined with cutting-edge practice"; form a "combination of summative evaluation and diversified assessment" The assessment method; set the dual protection mechanism of “relationship between learning feedback and teaching quality monitoring”.

4.1 Update teaching concept

With the development of the times, the society needs more and more compound talents, and many cases such as “paper talks” in history also tell us that the teaching of a glimpse of knowledge has no more meaning than the ability to create a theoretical giant. The cultivation of abilities is the correct way to educate the historical process. At the same time, the historical theory and practice course of landscape architecture is a theoretical discussion on the history of landscape architecture development, combined with the teaching objectives of architectural graduate students, using landscape garden

knowledge to solve the design problems that are currently and will soon be encountered. To a certain extent, the course needs to combine the knowledge content of multiple disciplines in order to integrate its knowledge system.

Therefore, teachers need to change traditional concepts, guide students to learn independently, cultivate interest in learning, and make students change from “passive” participatory learning to “active” desire for knowledge. Therefore, in the face of the new goal of current graduate education, we have updated the teaching concept, from “teaching of knowledge” to “cultivating ability”, from “teaching with teachers as the center” to “centering with students' independent learning”.

4.2 Building a TACR Teaching Model

Postgraduate education is a process from passive acceptance to active learning and exploration. How to arrange teaching in teaching and make students become the protagonists of teaching is a challenge for both teachers and students. Therefore, based on the “student-centered” teaching philosophy, we introduce teaching modes such as Thematic study, Autonomous learning, Case analysis and Report the discussion in classroom teaching. Give full play to students' subjective initiative and consciously guide students' ability in scientific research and innovation.

4.2.1 Designing Landscape Architecture History Theory and Practice Curriculum System

Thematic learning

Topic learning sets the theme and uses the method of inquiry to learn. According to the content of the teaching, the teacher arranges the subject content and recommends relevant reference books and documents before the class. Each student is responsible for one part. For example, we compare the Chinese classical gardens with the western gardens in different countries and report them according to the theme .

Table 1 Landscape Architecture History Theory and Practice Course

	Special subject	Date	Claim
Chinese classical garden	Generation period	First period	Summarize the historical background, artistic features, architectural features, etc. of the period; Select case to analyze the design ideas and gardening techniques of the period; connect with the reality and think about the enlightenment of gardens to modern garden design during this period; Each person presents his or her own views or questions for different historical periods.
	Transition period	Second period	
	heyday	Third period	
	Maturity	Fourth period	
	Late maturity	Fifth period	
	Royal Garden	Sixth period	
	Summary	Seventh period	
Western garden	Japanese garden	Eighth period	
	West Asian Garden	Ninth period	
	French garden	Tenth period	
	Italian garden	Eleventh period	
	British garden	Twelfth period	
	American garden	Thirteenth period	
	Summary	Fourteenth period	

(2) Autonomous learning

In the past, teachers mainly taught in the classroom, and students accepted passively. This method is not conducive to cultivating students' autonomy, and it is easy to produce a series of bad habits that rely on the teacher to explain the psychology. Therefore, based on this kind of situation, on the historical theory and practice course of landscape architecture, we take independent learning, consult relevant literature, and complete the theme tasks of each life. This method is more able to cultivate graduate students' self-learning ability, which helps them to better discover, analyze and solve problems in future study and work.

(3) Case analysis

In view of the important role of landscape architecture in the history of Chinese art and humanity development, especially in the ancient aristocracy and royal family, how to let students understand the connotation of landscape architecture has become our thinking. In order to stimulate students' interest in learning and to fully utilize professional knowledge to analyze typical cases of each historical period or country, we encourage students to put forward their views on the case from different angles, and to link with the actual situation from their own profession to explore the case. There is no reference to the design methods and artistic methods, and finally the teachers will make a comprehensive summary. For example, in the period of the formation of Chinese classical gardens, Jianzhang Palace is the first representative case of the period in the history of the Xianyuan-style royal garden with the complete Sanxian Mountain. First of all, in the process of learning, the cultural background of Taichichi, Penglai, Abbot and Pazhou represented by "One Pool and Three Mountains" and the pursuit of immortality by the rulers under the imperial power system It is necessary for students to learn independently; secondly, "one pool, three mountains", which builds islands in the palace garden, uses the way of gardening to simulate the sea of Xianshan, the significance of the development of traditional Chinese garden space and the art of Jianzhang Palace. The combination of philosophy and garden requires students to explore in the classroom; ultimately, the teacher systematically analyzes and summarizes the spatial types and artistic methods of the Jianzhang Palace, and extends the construction method for the modern landscape such as the construction of the West Lake landscape in Hangzhou. influences.

The historical theory teaching of landscape architecture in the case analysis mode provides students with an open space for self-learning and independent thinking, which fully mobilizes students' enthusiasm for learning. On the other hand, it solves the limited time in class and the communication between teachers and students is not deep enough. The problem makes the content of the teaching process more fulfilling, the students' memory is more profound, and the students participate in the course study without any falsehood, showing a better learning effect.

(4) Report the discussion

We draw on the teaching mode of other professional courses and the advantages of multimedia teaching, and apply it to the historical theory and practice teaching of landscape architecture, and set up as a report discussion class. As far as the historical theory and practice courses of landscape architecture are concerned, when students learn from the historical period of a certain stage of landscape architecture or the characteristics of landscape architecture in a certain western country, their learning results are made into corresponding ppt and reported in the classroom. After the report is over, the teacher reviews and guides the students to discuss each other, and then the teacher and classmates ask questions in the class, and the questions are given by the topic students.

As a new type of teaching mode, the special report mode introduces Chinese and foreign classic gardens by showing the teaching methods such as ppt. At the same time, for a garden case, it is not just an image at the text level, but an image. Intuitive understanding and learning, get more rich emotional experience. It also has a certain promotion effect on cultivating students' self-learning and scientific research ability, and pays attention to guiding students' scientific research ideas. At the same time, students can be more devoted to curriculum learning. The learning model for reporting and discussion has also been widely recognized by students.

4.3 Broaden the field of teaching

Based on the historical theory and practice curriculum of landscape architecture, in addition to the study of historical theory of landscape architecture, it is necessary to strengthen the practical application of landscape architecture and architecture majors and the teaching of landscape architecture theory.

4.3.1 Strengthen theoretical study

In order to strengthen students' scientific research and innovation awareness, we also need to explore the breadth and depth of the teaching content, follow the principle of advancing with the times, and

constantly introduce some hot issues and latest developments in cutting-edge research into the classroom. Therefore, in the actual teaching and on the basis of the course materials, the contents of the textbooks are adjusted, increased and decreased, and some teaching contents are reformed. For example, in the actual construction of gardens, designers are required to understand the garden styles and characteristics of various regions and ethnic groups, and master the design points. However, the relevant content in the textbooks is very small, and the explanations are too thin. During the lecture, the teacher summed up the characteristics of Western classical gardens, Islamic gardens, and oriental garden styles. Western classical gardens mainly introduce the Italian platform gardens, French classical gardens, British natural landscape gardens and West Asian gardens with far-reaching influences. On this basis, Japanese gardens and American modern gardens are added accordingly, and the natural geographical conditions of these countries are analyzed. The historical background, as well as its style characteristics and reasons for its formation, explain in detail the theory and practice of garden construction in the region. In addition, the course also mentions that Islamic gardens are a kind of gardens with artistic characteristics. In the course teaching, the introduction of the characteristics of Spanish Islamic gardens and Indian Islamic gardens is introduced. The Oriental Garden is represented by the Chinese Natural Landscape Garden. When teaching the characteristics of Chinese classical garden art style, the representative gardens of the North, Jiangnan and Lingnan in China are compared and introduced from different aspects.

4.3.2 Strengthening teaching practice

The postgraduate education in architecture is not taught in a one-sided closed field, but is a combination of multi-faceted theoretical foundations and social talents. The purpose of strengthening practical ability is to better combine historical theory with professional fields, so that abstract theoretical knowledge is more concrete and profoundly involved in postgraduate study.

Therefore, in the actual teaching, students are required to carry out the integration of the historical period of the landscape architecture and the selection of the case, learn how to develop and change the landscape garden in the historical background; connect the reality with the part of their interest and broaden the field of thinking. Establish a relationship between landscape architecture courses and architectural graduate studies, not just a science course. In addition, the students will be guided to learn how to apply the relevant knowledge of landscape architecture in the future planning and design, combined with the students' own research direction and the knowledge of landscape architecture, and design and plan the actual projects. In this process, the ability to integrate and integrate the content systems of various interdisciplinary subjects is also the cultivation of their research and innovation capabilities.

4.4 Optimization assessment form

With the emphasis on the cultivation of students' comprehensive ability, practical teaching has become an important part of the curriculum teaching content. The assessment methods of the curriculum have also been adjusted accordingly. The specific performance is: comprehensively examine the learning effect and change the previous single theoretical knowledge written examination. In the form of a combination of multiple assessment methods, the curriculum assessment is increased, and the proportion of mid-term assessment (ppt) and usual grades (including classroom reporting performance and problem-solving) is increased, and the proportion of final exam results is reduced. In the assessment method, the main papers are written, accounting for 60% of the total scores; the mid-term assessment (ppt) accounts for 20% of the total scores; the usual grades account for 20% of the total scores. Based on the writing of the thesis, students are required to select an independent perspective on each topic and submit a check report. In a sense, this method can ensure the authenticity of the essay writing and its corresponding quality, and at the same time give students more space for scientific research and innovation. At the same time, this will enable students to maintain their enthusiasm for learning in the learning process. Leading the learning content, rather than perfunctory, to conduct a surprise review at the end of the period to cope with the exam.

4.5 Real-time effect monitoring

In order to sum up the experience from the existing teaching and continuously improve the teaching of postgraduate degree courses, after the end of the course, we conducted a teaching feedback survey on the selected students for the teaching content and teaching mode. The feedback from the students is as follows: Most students think that the model The teaching effect contributes to the in-depth study of the historical theory and practice curriculum of landscape architecture, and opens up the relevant vision of landscape architecture, and perfects the gap of the knowledge system of landscape architecture; while a few students have different stages in the classroom reporting process and discussion issues. The view that the students in this part think that each person learns each chapter, which has a certain weakening of the overall study of landscape architecture. Therefore, when facing the practical problems of landscape architecture, there is still a lack of a complete knowledge system. When the classroom report answers the questions, it is very Hard to be comprehensive.

5. Summary

The cultivation of scientific research and innovative ability is not only the core of postgraduate training, but also an important task for cultivating high-quality innovative talents. Therefore, starting from the training program of graduate students, we aim to train graduate students' scientific research and innovation ability, take the degree course teaching as the entry point, carry out a series of reforms in the teaching content, teaching mode and assessment form, and explore the suitable postgraduate degree in architecture. The teaching system of the course. In the teaching practice, the teaching philosophy of "taking self-learning as the center, taking the ability training as the goal, and taking the teacher as the core" is implemented in the form of subject learning + case analysis + report discussion, with theoretical knowledge and practical teaching mode. To make students more intuitive to learn the relevant knowledge of the history of landscape architecture. In the teaching process of historical theory and practice courses, teachers and students learn together to awaken their interest in learning and scientific research, enhance the understanding and grasp of the aesthetics of landscape architecture, and work together to make the knowledge system perfect and achieve good teaching results. Make new recommendations for curriculum reform.

Acknowledgements

Fund projects: Jiangxi Normal University Degree and Postgraduate Education and Teaching Reform Research Project: Research on optimization strategy of scientific research ability of design academic graduate.

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