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Exploring the Cultivation Path of Practical Innovation Ability for Undergraduate Students in Educational Technology from the Perspective of Design Thinking

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Abstract: This article aims to explore the cultivation path of practical innovation ability for undergraduate students in educational technology from the perspective of design thinking. By analyzing the connotation of design thinking and its application value in the field of educational technology, combined with the current situation and problems of talent cultivation in the field of educational technology, this paper proposes a training path design from four dimensions: teaching objectives and content, teaching links, teaching modes, and teaching evaluation. In order to promote the comprehensive improvement of practical and innovative abilities of undergraduate students majoring in educational technology through this path, and meet the demand for educational technology talents in various fields of society.

Keywords: design thinking, educational technology, undergraduate, practical innovation ability, cultivation path

Introduction

With the proposal of development strategies such as building an innovative country and building an education powerhouse, the spirit and ability of innovation are becoming important indicators for talent cultivation in higher education in China. Experimental practical teaching is an important part of cultivating students' scientific spirit, innovation ability, and practical ability. Relevant documents from the Ministry of Education clearly state the need to "shift from emphasizing knowledge transmission to placing greater emphasis on ability and quality cultivation", and to "organize students to conduct innovative experiments and practices to enhance their innovative spirit and ability". Educational technology is the study of practice, and the cultivation of practical innovation ability should become the focus and breakthrough point of its talent cultivation. However, the existing talent cultivation models are often limited to static models and difficult to adapt to the dynamic needs of social development. Design thinking, as a user centered and problem-solving oriented innovative thinking method, provides a new perspective for solving practical problems in the training of educational technology professionals.[1] This article will explore the cultivation path of practical innovation ability for undergraduate students in educational technology from the perspective of design thinking, in order to provide guidance for the construction of educational technology majors and talent cultivation.

2. The connotation of design thinking and its application value in the field of educational technology

2.1 The connotation of design thinking

Design thinking is a theory that integrates methods, processes, and ways of thinking to solve problems and achieve innovation. In recent years, professional fields such as engineering, architecture, design, and business have gradually realized that design thinking can more effectively solve complex and unclear problems than solving systemic problems. At present, scholars in the fields of economics and education have defined the concept of design thinking from different perspectives, mainly including methods, processes, and ways of thinking.

Lawson (1980) first explicitly proposed the concept of design thinking and believed that design is a special and highly developed form of thinking.[2] Design thinking is a complex way of thinking that distinguishes designers from others. The concept of design thinking represents designers' understanding of design and how they carry out design activities based on their own understanding. This design activity space includes a complex collection of various interacting ideas. Design thinking is a comprehensive, unique, and people-oriented way of thinking that designers need to solve real-world needs in the artificial world. As a methodology for innovative problem-solving, design thinking can enhance the potential value practice of innovative outcomes, whether they are products, services, or strategies. Design thinking views the pathological, poorly defined, complex, and contradictory challenges in real life as opportunities rather than obstacles to solve problems.[3]

2.2 The application value of design thinking in educational technology major

The Education Technology major serves the field of education, mainly based on the relevant knowledge of the Education Technology major when applying design thinking to think about problems, analyzing problems in educational practice, and promoting the improvement of students' learning outcomes. The application value of design thinking in the field of educational technology is mainly reflected in the following aspects:

Firstly, promote the reform and change of curriculum teaching. Design thinking emphasizes user centricity and problem-solving orientation, which helps to update the teaching content and methods of educational technology courses, making them more in line with social development and student needs.

Secondly, enhance students' practical and innovative abilities. Design thinking emphasizes the improvement of knowledge and ability structure through practical interaction, which helps undergraduate students majoring in educational technology to discover and solve problems in practice, thereby enhancing their practical innovation ability.[4]

Finally, cultivate the ability to adapt to future work. Design thinking focuses on cultivating students' innovative thinking and problem-solving abilities, which helps undergraduate students majoring in education.

3. The current situation and problems of talent cultivation in educational technology major

3.1 Talent cultivation is limited to a static mode and difficult to adapt to social development

The existing talent training model for educational technology majors has not been effectively aligned with the dynamic development of society, and the distance between the training objectives and the needs of real society is too large, which to some extent restricts the cultivation of practical abilities of talents.[5] As a highly applied major, educational technology should pay more attention to the cultivation of practical and innovative abilities in its talent development, which is often overlooked in the existing static training model.

3.2 There are few full-time experimental teaching personnel and some teachers need to improve their practical teaching abilities

With the large-scale expansion of enrollment in universities, the teaching staff of educational technology majors is not strong enough, and teachers lack practical teaching experience and practical teaching ability. This often makes it difficult for students to receive sufficient guidance and support in experimental teaching, which affects the cultivation of their practical abilities.

3.3 The talent practical ability training system is not perfect enough, and the experimental teaching content and methods need to be updated in a timely manner

The existing talent cultivation system often emphasizes theoretical knowledge and neglects practical skills. The

experimental teaching content and methods are outdated and difficult to adapt to the development needs of the educational technology major. This often makes it difficult for students to apply their learned knowledge to practical problems in practice, which affects the cultivation of their practical innovation ability.

4. The cultivation path of practical innovation ability for undergraduate students in educational technology from the perspective of design thinking

In response to the problems in the cultivation of talents in the field of educational technology, this article proposes the design of a training path from four dimensions: teaching objectives and content, teaching processes, teaching modes, and teaching evaluation.

4.1 Design of teaching objectives and content

Firstly, clarify the training objectives. Based on the development needs and social demands of the Educational Technology major, clarify the talent training objectives. In the training objectives, attention should be paid to the cultivation of practical innovation ability, emphasizing that students should have the ability to solve practical problems.

Secondly, optimize the curriculum system. Optimize the curriculum system of Educational Technology major based on the connotation and application value of design thinking. In course design, attention should be paid to the combination of theory and practice, and the proportion of practical courses should be increased. At the same time, relevant courses on design thinking, such as innovative thinking and methods, design principles, etc., should be introduced to enhance students' design thinking abilities.

Finally, update the teaching content. Update teaching content in a timely manner based on the latest developments and social demands in the field of educational technology. In the teaching content, attention should be paid to introducing cutting-edge technologies and practical cases, so that students can understand and master the latest educational technology knowledge and skills.

4.2 Design of teaching process

Firstly, strengthen practical teaching. In the teaching process, attention should be paid to the design and implementation of practical teaching. By designing challenging practical tasks, stimulate students' interest and motivation in practice. At the same time, sufficient practical resources and guidance should be provided to enable students to discover and solve problems in practice.

Secondly, introduce project-based teaching. Project based teaching is an effective teaching method that can help students apply the knowledge they have learned to practical problems. In the teaching of educational technology majors, project-based teaching can be introduced to enhance students' practical innovation and teamwork abilities by organizing their participation in the design and implementation of actual projects.

Thirdly, conduct design thinking training. In design thinking training, emphasis should be placed on cultivating students' innovative thinking and problem-solving abilities. Organizing design thinking workshops, design competitions, and other activities can stimulate students' innovative thinking and creativity. At the same time, students should be guided to use design thinking methods to solve practical problems and enhance their design thinking abilities.

4.3 Design of teaching mode

Firstly, implement a flipped classroom. Flipped classroom is a student-centered teaching model that can help students better grasp knowledge and skills. In the teaching of educational technology majors, flipped classrooms can be implemented to enhance students' self-learning and teamwork abilities through a combination of pre class self-learning and classroom discussions.

Secondly, adopt case-based teaching. Case teaching is an effective teaching method that can help students apply the knowledge they have learned to practical problems. In the teaching of educational technology majors, case-based teaching can be adopted to enhance students' practical innovation and problem-solving abilities by introducing practical cases for analysis and discussion.

Thirdly, promote blended learning online and offline. Blended online and offline teaching is a new teaching model

that can fully utilize the advantages of online resources and offline interaction. In the teaching of educational technology majors, blended online and offline teaching can be promoted, which combines online self-learning with offline practice to enhance students' practical innovation ability and information literacy.

4.4 Design of teaching evaluation

In teaching evaluation, it is necessary to establish a diversified evaluation system and focus on evaluating students' practical and innovative abilities. By designing diverse evaluation tasks and methods, such as project reports, design works, practical operations, etc., students' practical and innovative abilities can be comprehensively evaluated.

Process evaluation is an evaluation method that focuses on students' learning process and learning outcomes. In the teaching of educational technology, process evaluation can be introduced to help students identify problems and improve their learning methods in a timely manner by evaluating and providing feedback on their performance during the learning process.

In the assessment of practical ability, attention should be paid to the assessment of students' practical operation ability and problem-solving ability. Students' practical abilities can be comprehensively assessed through the design of practical assessment tasks and practical operation exams.

5. Conclusion and prospect

This article explores the cultivation path of practical innovation ability for undergraduate students in educational technology from the perspective of design thinking. By analyzing the connotation of design thinking and its application value in the field of educational technology, combined with the current situation and problems of talent cultivation in the field of educational technology, a training path is proposed from four dimensions: teaching objectives and content, teaching links, teaching modes, and teaching evaluation. Through the implementation of this path, the practical innovation ability of undergraduate students majoring in educational technology can be effectively enhanced, meeting the demand for educational technology talents in various fields of society.

In the future, with the continuous development of information technology and the deepening of educational reform, the talent cultivation of educational technology majors will face more challenges and opportunities. The training path proposed in this article will provide useful reference and inspiration for the construction of educational technology majors and talent cultivation. At the same time, we also need to constantly explore and innovate new models and methods of talent cultivation to adapt to changes in social development and student needs.

Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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