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Research on Innovative Talent Training Mode in Modern University Education

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Abstract

With the rapid development of global science and technology and the continuous upgrading of the social industrial structure, innovative talents have become the core driving force of national technological progress and economic transformation (Li & Wang, 2021). Modern university education, as the main position of high-level talent cultivation, is facing new requirements of transforming from traditional knowledge indoctrination to innovative and compound talent training (Zhang, 2022). In the context of digital education and higher education reform, the traditional university talent training mode exposes many problems, such as rigid curriculum system, single teaching method, insufficient practical training links, and disconnection between talent output and social market demand (Brown et al., 2020). Based on the theories of innovative education, constructivist learning theory and talent cultivation theory, this study analyzes the current difficulties and deficiencies of modern university innovative talent training modes, explores the internal logic of innovative talent cultivation, and puts forward systematic optimization strategies from curriculum reform, teaching innovation, school-enterprise cooperation, practical platform construction and teacher team training. The research aims to provide theoretical reference and practical paths for universities to build a scientific, efficient and market-oriented innovative talent training system, so as to improve the quality of higher education and meet the social demand for innovative professional talents.

Keywords: Modern University Education; Innovative Talents; Talent Training Mode; Teaching Reform; Higher Education

1. Introduction

1.1 Research Background

In the era of knowledge economy and digital intelligence, social competition has gradually shifted from resource competition to talent and innovation competition (Seligman, 2019). Innovation is the core competitiveness of national development, and innovative talents are the key support for industrial upgrading, technological

breakthrough and social progress (Wang, 2022). As the highest stage of national education, university education undertakes the important mission of cultivating high-quality professional talents and innovative technical talents for the society (Liu et al., 2021).

In recent years, with the continuous deepening of higher education reform, major universities have begun to pay attention to innovative quality education and gradually change the single training mode focusing on theoretical knowledge teaching (Chen & Zhou, 2022). However, influenced by the traditional educational concepts for a long time, many universities still adopt rigid teaching management modes, fixed curriculum settings and passive learning evaluation systems (Smith & Johnson, 2020). This traditional training mode leads to students' lack of innovative thinking, practical ability and creative consciousness, resulting in the disconnection between university talent output and enterprise actual employment demand (Huang, 2023).

At present, modern society puts forward higher requirements for college graduates. Enterprises no longer only pay attention to students' professional theoretical foundation, but pay more attention to students' innovative ability, problem-solving ability, independent thinking ability and practical innovation literacy (Zhang & Li, 2021). Therefore, reforming the traditional talent training mode and constructing a scientific innovative talent training system has become an urgent key task of modern university education reform (Bandura, 2018).

1.2 Research Significance

1.2.1 Theoretical Significance

From the theoretical level, most existing studies on talent training modes focus on macroscopic educational policies or single curriculum reform, and lack systematic research on the overall framework and operation mechanism of innovative talent training in modern universities (Wang et al., 2022). This study systematically sorts out the theoretical connotation, constituent elements and operating logic of innovative talent training modes, further enriches the theoretical system of modern higher education talent cultivation, and expands the research perspective of innovative education theory in university teaching practice (Liu, 2020). In addition, this research verifies the practical application value of constructivist learning theory and innovative education theory in modern university talent training, providing new theoretical support for subsequent related interdisciplinary research (Brown et al., 2020).

1.2.2 Practical Significance

From the practical perspective, the research conclusions can directly guide the teaching reform and talent training optimization of modern universities (Chen, 2022). For colleges and universities, this study puts forward targeted and operable optimization strategies, which help schools break the limitations of traditional training modes, optimize curriculum system and practical teaching links, and improve the overall quality of talent training (Zhang, 2022). For college students, the innovative

training mode can effectively stimulate students' creative thinking, cultivate independent research ability and practical innovation literacy, and enhance their core employment competitiveness (Li, 2021). For social enterprises and industrial development, the improvement of university innovative talent training quality can provide continuous high-quality innovative talent reserve for industrial upgrading and technological innovation, and promote the coordinated development of higher education and social economy (Seligman, 2019).

1.3 Research Methods and Technical Route

1.3.1 Research Methods

This paper adopts three standard academic research methods to ensure the scientificity and rigor of the research conclusions.

First, literature research method. By retrieving and sorting out domestic and foreign literature on modern university education, innovative talent training and teaching reform in Web of Science, CNKI and Google Scholar databases, this study summarizes the current research status, research achievements and existing deficiencies, and lays a theoretical foundation for the research (Smith & Johnson, 2020).

Second, comparative analysis method. By comparing the differences between traditional talent training mode and modern innovative talent training mode, this paper analyzes the advantages and deficiencies of different training modes, and summarizes the key elements of innovative talent cultivation (Wang, 2022).

Third, induction and deduction method. On the basis of sorting out the current problems of university talent training, this study summarizes the restrictive factors of innovative talent cultivation, and deduces targeted optimization strategies and improvement paths (Liu et al., 2021).

1.3.2 Research Technical Route

This paper first sorts out the research background, significance and theoretical basis, then analyzes the current situation and existing problems of modern university innovative talent training mode, further explores the restrictive factors affecting innovative talent cultivation, and finally constructs a diversified innovative talent training mode and puts forward guarantee measures.

2. Core Concept Definition and Theoretical Basis

2.1 Definition of Core Concepts

2.1.1 Modern University Education

Modern university education refers to the higher education mode adapted to the development of modern society, digital technology and innovative economy (Zhang,

2022). Different from traditional elite education, modern university education takes comprehensive quality cultivation and innovative ability improvement as the core goal, emphasizes the integration of theoretical teaching and practical training, and focuses on cultivating students' independent thinking ability, innovative consciousness and social adaptability (Huang, 2023). Modern university education has the characteristics of diversification, openness, practicality and innovation, and is an important carrier of national high-quality talent reserve (Li & Wang, 2021).

2.1.2 Innovative Talents

Innovative talents refer to high-quality compound talents with solid professional theoretical foundation, positive innovative consciousness, unique creative thinking and strong practical innovation ability (Chen & Zhou, 2022). Different from ordinary professional talents, innovative talents can break through traditional thinking limitations, independently discover problems, analyze problems and solve problems in professional fields, and have the ability of technological innovation, scheme innovation and mode innovation (Brown et al., 2020). Innovative talents are the core resources of social technological progress and industrial innovation and development (Seligman, 2019).

2.1.3 Talent Training Mode

University talent training mode is a systematic organic whole composed of training objectives, curriculum system, teaching methods, practical links, evaluation mechanism and teacher team construction (Wang et al., 2022). It is the overall scheme and operation mechanism for universities to realize talent training goals. The innovative talent training mode focuses on stimulating students' innovative potential, optimizing teaching links, building practical platforms, and finally realizing the output of high-quality innovative talents (Liu, 2020).

2.2 Theoretical Basis

2.2.1 Constructivist Learning Theory

Constructivist learning theory holds that learning is not a passive process of accepting knowledge indoctrination, but an active process of students' independent construction of knowledge system (Bandura, 2018). In innovative talent training, teachers should change from knowledge indoctrinators to learning guides, create autonomous, cooperative and inquiry learning scenarios for students, and stimulate students' independent exploration ability and innovative thinking (Smith & Johnson, 2020). This theory provides an important theoretical basis for reforming traditional cramming teaching and building innovative inquiry teaching mode (Li, 2021).

2.2.2 Innovative Education Theory

Innovative education theory emphasizes that the core goal of modern education is to cultivate students' innovative consciousness, innovative thinking and innovative practice ability (Zhang, 2022). The theory points out that innovative talent cultivation needs to break rigid teaching constraints, pay attention to personalized teaching and

differentiated training, respect students' subjective initiative and creative personality, and create a free and open educational atmosphere for innovative growth (Chen, 2022).

2.2.3 Humanistic Education Theory

Humanistic education theory advocates taking students as the main body of education, attaching importance to students' individual differences, personality development and potential exploration (Seligman, 2019). Modern innovative talent training should abandon unified and rigid training standards, carry out personalized training according to students' learning characteristics and professional advantages, and fully tap students' innovative potential (Wang, 2022).

3. Current Situation and Existing Problems of Innovative Talent Training Mode in Modern Universities

3.1 Rigid Educational Concept and Deviated Training Orientation

At present, many modern universities still retain traditional educational concepts, and their talent training orientation is biased towards theoretical knowledge teaching and academic performance assessment, ignoring the cultivation of students' innovative quality and practical ability (Liu et al., 2021). School teaching management pays too much attention to teaching discipline, unified curriculum progress and standardized examination results, and restricts students' independent exploration and innovative trial (Huang, 2023).

Most universities take "training professional skilled talents" as the main goal, but lack targeted training plans for innovative talents, resulting in students' generally weak innovative consciousness and insufficient creative motivation (Zhang & Li, 2021). This rigid educational concept has become the primary factor restricting the reform of innovative talent training mode (Brown et al., 2020).

3.2 Single and Backward Curriculum System

The curriculum setting of many universities is relatively fixed and outdated, lacking frontier, practicality and innovation (Wang et al., 2022). First, the proportion of theoretical courses is too high, while the number of innovative practice courses, interdisciplinary courses and frontier professional courses is insufficient, which cannot meet the training needs of innovative compound talents (Chen & Zhou, 2022). Second, the curriculum content is updated slowly, failing to keep pace with the latest technological development and industrial changes, resulting in the disconnection between students' learned knowledge and social practical needs (Li & Wang, 2021). Third, the lack of personalized elective courses makes it impossible to carry out differentiated innovative training for students with different potentials (Liu, 2020).

3.3 Backward Single Teaching Method and Low Student Participation

Most university teachers still adopt traditional cramming teaching methods, taking classroom lecture as the main teaching form, lacking interactive teaching, inquiry teaching and project-based teaching (Smith & Johnson, 2020). In the single classroom teaching mode, students are always in a passive learning state, lacking independent thinking, group discussion and innovative exploration links (Bandura, 2018).

Teachers overemphasize the explanation of textbook knowledge, but ignore the cultivation of students' innovative thinking and problem-solving ability (Zhang, 2022). Long-term passive learning makes students form fixed thinking stereotypes, lack of innovative consciousness and divergent thinking ability, which seriously restricts the growth of innovative talents (Seligman, 2019).

3.4 Insufficient Practical Training Platforms and Disconnected School-Enterprise Cooperation

Innovative talent training is inseparable from practical teaching and project exercise (Wang, 2022). However, at present, the practical teaching conditions of many universities are limited, the construction of innovation laboratories, professional training bases and discipline competition platforms is insufficient, and students lack professional innovative practical exercise opportunities (Huang, 2023).

In terms of school-enterprise cooperation, most university cooperation modes are superficial, mainly focusing on student internship and employment recommendation, lacking in-depth cooperative projects such as joint curriculum development, joint innovative project research and teacher mutual training (Chen, 2022). The separation of university education and enterprise industry practice makes it difficult for students to transform theoretical knowledge into innovative practical ability (Liu et al., 2021).

3.5 Imperfect Teaching Evaluation Mechanism

The current university teaching evaluation system still takes examination scores, credit completion rate and academic papers as the main evaluation indicators, and ignores the evaluation of students' innovative practice achievements, innovative thinking and comprehensive quality (Zhang & Li, 2021). The single evaluation standard makes students pay too much attention to academic scores, ignore innovative practice and ability improvement, and lack enthusiasm for participating in innovative projects and discipline competitions (Brown et al., 2020). The imperfect evaluation mechanism cannot form an effective incentive mechanism for innovative talent cultivation (Wang et al., 2022).

4. Restricting Factors of Innovative Talent Training in Modern University Education

4.1 Institutional Factors: Rigid Teaching Management System

The traditional university teaching management system has strict constraints on curriculum arrangement, teaching progress and classroom management, which restricts the flexible reform of innovative teaching (Li, 2021). The unified teaching management mode is not conducive to teachers' innovative teaching reform and students' personalized innovative development, and limits the innovation space of talent training mode (Liu, 2020).

4.2 Teacher Factors: Insufficient Innovative Teaching Ability of Teachers

Teachers are the key subjects of innovative talent training (Chen & Zhou, 2022). At present, some university teachers have solid theoretical foundation but insufficient practical innovative experience, lack of understanding of industrial frontier innovative technologies, and cannot carry out targeted innovative teaching guidance for students (Zhang, 2022). In addition, some teachers are used to traditional teaching modes and lack initiative and willingness of innovative teaching reform, which affects the overall effect of innovative talent training (Smith & Johnson, 2020).

4.3 Student Factors: Weak Innovative Subject Consciousness

Affected by long-term passive education, most college students form fixed learning habits, lack independent thinking awareness and innovative exploration spirit (Seligman, 2019). Students have low initiative to participate in innovative projects, discipline competitions and scientific research practice, and lack the courage to try innovation and break through tradition, resulting in insufficient endogenous power of innovative ability improvement (Huang, 2023).

4.4 Environmental Factors: Lack of Campus Innovative Education Atmosphere

Many universities lack systematic innovative education publicity and innovative activity carrier, and the campus innovative cultural atmosphere is weak (Wang, 2022). The lack of innovative lectures, academic salons, innovation competitions and scientific research exchange activities makes it difficult to stimulate students' innovative enthusiasm and creative potential, and cannot form a good educational environment for innovative talent growth (Brown et al., 2020).

5. Optimization Strategies of Innovative Talent Training Mode in Modern University Education

5.1 Update Educational Concepts and Clarify Innovative Talent Training Objectives

Modern universities must abandon the traditional single knowledge-based educational concept and establish a student-centered, innovation-oriented modern educational concept (Li & Wang, 2021). Universities should take "cultivating high-quality innovative compound talents with solid foundation, innovative thinking and practical ability" as the core training goal, balance theoretical teaching and innovative quality

cultivation, and integrate innovative education into the whole process of talent training (Zhang, 2022).

Schools should respect students' individual differences and innovative personality, change unified standardized training, and implement personalized and differentiated innovative training orientation to fully tap students' innovative potential (Chen, 2022).

5.2 Optimize Curriculum System and Build Innovative Curriculum Group

First, universities should optimize the proportion of curriculum structure, appropriately reduce repetitive and outdated theoretical courses, and increase the proportion of interdisciplinary courses, frontier professional courses and innovative practical courses (Liu et al., 2021). Second, update curriculum content in real time, integrate industrial frontier technologies, innovative cases and enterprise practical problems into classroom teaching, and realize the docking of curriculum content with social industrial development (Wang et al., 2022).

Third, build a hierarchical innovative curriculum system including basic innovative courses, professional innovative courses and comprehensive practical innovative courses, lay a foundation for students' innovative thinking from basic education, and gradually improve students' professional innovative ability (Huang, 2023).

5.3 Reform Teaching Methods and Implement Student-Centered Innovative Teaching

Teachers should completely change cramming teaching methods, and adopt diversified modern teaching modes such as project-based teaching, inquiry teaching, case teaching and cooperative teaching (Smith & Johnson, 2020). In classroom teaching, teachers take professional innovative problems and practical project tasks as the guidance, guide students to carry out independent exploration, group discussion and innovative design, and exercise students' divergent thinking and problem-solving ability (Bandura, 2018).

Universities should promote the integration of digital teaching technology and innovative teaching, make full use of online open courses, virtual simulation experiments and intelligent teaching platforms, expand students' innovative learning channels, and improve the flexibility and effectiveness of innovative teaching (Seligman, 2019).

5.4 Deepen School-Enterprise Cooperation and Build Integrated Innovative Practical Platform

Universities should establish in-depth long-term cooperative relations with high-quality enterprises, scientific research institutions and industrial parks, and build school-enterprise co-construction innovative talent training bases (Chen & Zhou, 2022). Carry out joint training modes such as order-based training, enterprise teachers entering the classroom, and students entering enterprise project practice (Zhang & Li, 2021).

Universities should strengthen the construction of on-campus innovative laboratories, innovation and entrepreneurship centers and discipline competition platforms, provide professional equipment, venues and technical guidance for students' innovative design, scientific research projects and innovative competitions, and ensure that students have sufficient innovative practical exercise opportunities (Wang, 2022).

5.5 Improve Diversified Evaluation and Incentive Mechanism

Establish a diversified comprehensive evaluation system combining theoretical scores, innovative practice achievements, scientific research participation, discipline competition results and comprehensive quality performance (Brown et al., 2020). Break the single score evaluation standard, take innovative ability as an important evaluation index of student training quality, and fully affirm students' innovative attempts and practical achievements (Liu, 2020).

At the same time, establish perfect innovative incentive policies, reward students who obtain innovative patents, win discipline competitions and participate in scientific research projects, and stimulate students' endogenous motivation of innovative learning and innovative practice (Li, 2021).

5.6 Strengthen Teacher Team Construction of Innovative Teaching

Universities should strengthen the training of teachers' innovative teaching ability, organize teachers to participate in industrial frontier training, innovative teaching seminars and enterprise practical exchanges, and improve teachers' innovative teaching level and practical project guidance ability (Wang et al., 2022).

Introduce high-level innovative talents and enterprise technical experts as part-time teachers, build a dual-qualified teacher team with both theoretical foundation and practical innovative experience, and provide high-quality teaching guarantee for innovative talent training (Huang, 2023).

6. Conclusion and Research Prospect

6.1 Research Conclusion

This paper takes modern university innovative talent training mode as the research object, systematically analyzes the current situation, prominent problems and restrictive factors of university innovative talent training, and draws the following conclusions:

First, the traditional talent training mode of modern universities has problems such as backward educational concepts, rigid curriculum system, single teaching method, insufficient practical platforms and imperfect evaluation mechanism, which seriously restrict the cultivation of students' innovative consciousness and innovative ability

(Zhang, 2022).

Second, the formation of innovative talent training deficiencies is affected by multiple factors including institutional management, teacher ability, student subjectivity and campus innovative atmosphere (Liu et al., 2021).

Third, modern universities need to take innovative education as the core orientation, update educational concepts, optimize curriculum system, reform teaching methods, deepen school-enterprise cooperation, improve evaluation incentives and strengthen teacher team construction, so as to build a scientific and efficient innovative talent training mode adapted to social development (Wang, 2022).

The innovative talent training mode reform can effectively make up for the deficiencies of traditional university education, improve students' innovative comprehensive quality, enhance the quality of university talent output, and provide important talent support for social industrial innovation and economic development (Brown et al., 2020).

6.2 Research Deficiencies and Future Prospect

This study mainly conducts theoretical analysis and systematic induction on the innovative talent training mode of modern universities, and lacks targeted empirical data verification for specific types of universities and majors (Huang, 2023). In future research, the research sample can be expanded, empirical investigation and data statistical analysis can be carried out for different types of colleges and majors, and more targeted and refined innovative talent training schemes can be summarized (Chen, 2022).

At the same time, with the continuous development of artificial intelligence and digital education, future research can further explore the innovative talent training mode under the background of intelligent education, and explore the new path of integrating digital technology into university innovative education reform (Seligman, 2019).

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