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Research on the Practical Teaching Mode of the Health Education and Health Promotion Course Driven by Competitions

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Abstract

To meet the requirements of cultivating innovative and applied talents in Chinese higher education, this study constructs a "competition-driven and competition-teaching integrated" practical teaching model for the Health Education and Health Promotion course based on the "competency-based" education concept. By integrating discipline competition resources with the curriculum system, the research explores the model's connotation, objectives, implementation strategies, and guarantee mechanisms. The model has achieved significant effects from empirical data from 2019 to 2024 of Health Service and Management majors in Inner Mongolia Medical University shows that students' competition participation rate increased from 12% to 55% (average annual growth of 8%), with 5 national second prizes and 6 provincial first prizes won, and 80% of teachers transformed competition cases into teaching models and obtained 3 provincial teaching reform projects. These results verify the model's value in enhancing students' practical innovation abilities, optimizing teaching quality, and promoting school-enterprise cooperation. Combining the trends of educational reform and health discipline development in the past decade, this study proposes a teaching reform path with both theoretical depth and practical value, providing a reference paradigm for similar applied courses.

Keywords: Competition-Driven; Integration of Competitions and Education; Practical Teaching; Teaching Reform

1. Introduction

With the in-depth implementation of the "Healthy China 2030" Plan Outline, social demands for health service and management talents have shifted from single theoretical orientation to "practical-innovative-collaborative" composite capabilities. As a core course in the public health field, Health Education and Health Promotion directly influences students' competence in practical scenarios such as health intervention design and community health management

(MacKay et al., 2024). However, traditional teaching models suffer from limitations like "overemphasis on theory and neglect of practice" and "fragmented practical scenarios," making it difficult for students to transform knowledge into the ability to solve real health problems (Cao et al., 2024). For instance, Li (2021) conducted a follow-up study on 200 college students found that 67% of students who received only campus-based practical training reported "inability to handle cultural differences in community health work" when participating in real-world projects for the first time—for example, failing to effective communion for pastoral areas residences in Inner Mongolia. In terms of evaluation, Wang et al. (2024) indicated out that 82% of traditional practical courses in Chinese health-related majors rely solely on final paper-reports.

Theoretical Foundations and Practical Values of Competition-Driven Teaching is constructivist learning theory, which constructs a "three-dimensional linkage" system with "competition tasks as the carrier, ability cultivation as the core, and teaching reform as the starting point," emphasizes the cognitive construction process of "learning by doing," and discipline competitions, as authentic learning tasks, effectively stimulate students' active inquiry awareness (Dewey, 2008). In this theoretical foundation, goal dimension aligns with health industry standards and competition evaluation indicators, which is a direct application of competency-based education theory, emphasizes that talent cultivation should be oriented to "industry needs" and "practical abilities" (Li, 2021). For the content dimension, the decomposition of competition assessment points into curriculum modules is rooted in constructivist learning theory, which holds that learning is an active process of "constructing knowledge through practice" (Dewey, 2008; Wu et al., 2019). Taking the "Health Science Popularization Competition" as an example: the competition's "needs analysis" assessment point is integrated into the "Community Health Needs Assessment" curriculum module—students collect real data from pastoral areas in Inner Mongolia (e.g., elderly hypertension prevalence) and construct an understanding of "target group characteristics" through hands-on practice; the "program design" assessment point is incorporated into the "Health Promotion Program Planning" module—students design Mongolian-language health manuals based on competition requirements, transforming theoretical knowledge of "health communication" into practical skills. This integration ensures that curriculum content is not static but dynamically adjusted based on competition tasks, enabling students to "learn by doing." Finally, for the evaluation dimension, the multi-faceted evaluation approach ("competition results + process performance+ industry feedback") draws on comprehensive evaluation theory, which emphasizes "assessing all aspects of learning" rather than single results (Yao et al., 2021).

Studies at home and abroad have shown that the competition-driven model has significantly improved students' problem-solving and teamwork skills in medical education (e.g., USMLE) and engineering education (e.g., National College Students' Engineering Training Competition in China) (Corell, A et al., 2018; Maulana et al., 2024). In China, relevant research in health disciplines has also advanced, and mostly research focused on the medicine related majors or courses, Qiu et al. (2025) studied among 72 rehabilitation specialization students found that the competition-driven teaching method significantly improves students' self-ability evaluation and stimulates their interest in learning and competitive awareness. Wang et al. (2025) further confirmed the teaching mode of "promoting learning through competition and promoting teaching

through competition" is a effective method in the reform of experimental teaching in histology and embryology. Through the gradual improvement of the teaching mode through the competition, the standardization of the case simulation library and the integration of multi-scenario teaching improve students' practical ability and learning initiative. So, integrating competition elements into practical teaching is not only the practice of the educational concept of "promoting learning and teaching through competitions" but also an inevitable choice to meet industry needs in China.

2. Curriculum Positioning and Adaptability Analysis of Competition-Driven Teaching

2.1. The Interdisciplinary Attributes and Practical Orientation of the Course

The health service and management major in China is guided by the development needs of the national health strategy, adheres to the philosophy of "preventing disease before it occurs", and relies on information - driven based big data technology. It is committed to cultivating applied talents with solid theoretical foundations, strong practical abilities, and excellent communication and collaboration skills. These professionals can engage in health service and management roles across various enterprises and institutions related to the health service industry at all levels (e.g.,health management and public health), to meet the diverse societal demands for professionals in the health field.

As a core foundational course, Health Education and Health Promotion course integrates theories from multiple disciplines such as medicine, sociology, and communication, it focuses on cultivating students' comprehensive abilities using theoretical knowledge and practical skills in designing, implementing (behavior interventions), and evaluating (intervention effects) health education and health promotion programs, to address complex health challenges across diverse populations.

Through a blend of evidence-based theories (e.g., social cognitive theory, health belief model) and real-world case studies, students learn to analyze health behaviors, develop intervention strategies, and leverage communication technologies to promote individual and community well-being. As a cornerstone of health service and management programs, health education and health promotion course should balance theoretical and practical dimensions. Theoretically, it closely follows global frontiers in health education to ensure students master cutting-edge knowledge. In terms of practical skills training, it emphasizes health behavior interventions should be based on Chinese cultural background and work scenarios, enabling students to flexibly apply the learned knowledge to actual work scenarios.

Typical practical scenarios of the course include community health needs surveys, science popularization program design, and chronic disease management project planning, which highly align with the assessment requirements of discipline competitions such as the "National College Students' Health Science Popularization Competition" and "Challenge Cup" (Guo et al., 2019).

2.2. Bottlenecks of Traditional Practical Teaching and Breakthrough Points of Competition Driven Models

Traditional practical teaching in the realm of health education and health promotion has long

been plagued by several inherent bottlenecks, impeding students' effective acquisition of practical skills and comprehensive development (Wei & Jiang, 2023). Traditional practical teaching often faces three dilemmas:

Scene Limitations: Campus - based practical teaching often struggles to replicate the complexity and authenticity of real - world community health intervention scenarios. For instance, laboratory settings may offer a sanitized version of health promotion planning, but they lack the dynamic nature of actual community interactions. A study by Liu (2024) indicated that students trained mainly in campus labs faced significant challenges when first exposed to real - world health projects, as they were ill - equipped to handle the diverse social, cultural, and environmental factors present in community health work.

Single Evaluation: The assessment in traditional practical teaching predominantly relies on reports and assignments. This one - size - fits - all approach fails to comprehensively capture students' practical capabilities. (Wang et al., 2024) pointed out that a student might produce an excellent written report but lack the practical skills to implement a health education program effectively. Moreover, such evaluation methods often overlook crucial aspects like students' on - site problem - solving abilities, communication skills during health promotion activities, and their capacity to adapt to unexpected situations in real - world health projects.

Insufficient Motivation: In the absence of real - world task incentives, students' enthusiasm for practical participation remains low. The lack of clear, tangible goals and external recognition in traditional practical teaching leads to a situation where students may merely go through the motions. Guo et al. (2019) found that students in traditional practical courses showed less initiative in exploring innovative health education methods compared to those engaged in competition - based learning, as the former lacked the sense of achievement and competition that drives active learning. In contrast, the competition - driven model offers distinct breakthrough points. By introducing competition tasks with clear goals, rules, and evaluation criteria, it transforms the learning experience. For example, in a health promotion competition, students are required to design and implement a complete health education project for a specific community group. This real - world - like task forces them to step out of their comfort zones and engage actively in all aspects of the project, from conducting in - depth needs assessments to implementing and evaluating the intervention. The competition - driven model also provides a platform for students to showcase their skills and receive external recognition, which significantly boosts their motivation. As demonstrated by a research showed that students participating in the "National College Students' Health Science Popularization Competition" (Liu, 2024), the motivation to compete not only enhances their practical skills but also stimulates their creativity in developing unique health education strategies.

3. Systematic Construction of the "Competition-Driven and Competition- Teaching Integrated" Teaching Model

3.1. Model Connotation and Logical Framework

The "competition - driven and competition - teaching integrated" model for the Health

Education and Health Promotion course represents a novel and comprehensive approach to practical teaching in the health discipline. This model is designed to address the long - standing disconnect between theoretical learning and real - world application, thereby enhancing students' practical skills, innovative thinking, and overall competitiveness in the health job market (Fan et al., 2020).

At its core, this model uses competition tasks as the primary vehicle for learning. By participating in health - related competitions, students are exposed to real - world scenarios and challenges that mirror the complexity of actual health projects. For example, competitions like the "National College Students' Health Science Popularization Competition" require students to design and implement comprehensive health education programs for specific target groups, such as the elderly, children, or high - risk occupational groups. This not only tests their knowledge of health education theories but also their ability to adapt these theories to practical situations, considering factors like cultural backgrounds, social environments, and individual needs (Liu & Yu, 2024).

The focus on ability cultivation is another key aspect of this model. It goes beyond the traditional rote - learning approach and instead emphasizes the development of a wide range of skills. These include problem - solving skills, where students must analyze complex health problems and design effective intervention strategies; communication skills, as they need to convey health information clearly and persuasively to different audiences; and teamwork skills, since most health - related projects require collaboration among professionals from various disciplines (Wang, 2024). For instance, in a team - based competition for designing a community - wide chronic disease prevention program, students from public health, nursing, and health communication backgrounds need to work together, each contributing their unique expertise to achieve a common goal.

Teaching reform serves as the driving force behind the successful implementation of this model. It necessitates a fundamental rethinking of the traditional teaching paradigm. Teachers are no longer the sole providers of knowledge but rather act as facilitators and mentors. They guide students through the competition process, helping them to identify problems, explore solutions, and reflect on their experiences. This shift in the teacher's role is in line with the constructivist learning theory, which posits that learning is an active process of knowledge construction by the learner, rather than a passive reception of information (Wu et al., 2019).

The model constructs a "three-dimensional linkage" system with "competition tasks as the carrier, ability cultivation as the core, and teaching reform as the starting point":

(1) Goal Dimension: In the goal dimension, alignment with health industry standards and competition evaluation indicators is of utmost importance. The health industry has specific requirements for the knowledge, skills, and qualities of its professionals. For example, the ability to conduct accurate health needs assessments, design evidence - based health promotion programs, and evaluate the effectiveness of these programs is highly valued. Competition evaluation indicators, on the other hand, often reflect these industry standards in a more practical and measurable way. By integrating them formed a three - level training goal of "knowledge - skill -

quality" . At the knowledge level, students are expected to master a comprehensive set of health education and promotion theories, including health behavior change models, health communication theories, and health policy knowledge. The skill level requires them to be proficient in skills such as data collection and analysis, program planning and implementation, and health message design. At the quality level, they should possess qualities like critical thinking, ethical awareness, and adaptability (Li, 2021).

(2) Content Dimension: In the content dimension, the decomposition of competition assessment points into curriculum modules is a key strategy. Take the "Health Science Popularization Competition" as an example. The assessment of this competition typically includes aspects such as needs analysis, where students need to identify the health knowledge gaps and needs of the target audience; program design, which involves creating engaging and effective health education materials; and communication implementation, requiring students to use various channels to deliver the health messages. These assessment points are then translated into corresponding teaching units within the curriculum. For example, the needs analysis part can be integrated into the "Community Health Needs Assessment" module of the course, while the program design can be part of the "Health Promotion Program Planning" module. This integration ensures that the curriculum content is directly relevant to the practical skills required in competitions and, ultimately, in the health industry (Gao & Wang, 2023).

(3) Evaluation Dimension: The evaluation dimension of this model features a multi - faceted approach. It goes beyond the traditional single - dimensional evaluation methods, such as relying solely on written exams or course assignments. Instead, it incorporates "competition results + process performance + industry feedback" as the evaluation criteria. Competition results are an obvious indicator of students' practical abilities in a competitive environment. However, process performance is equally important. This includes students' performance during the competition preparation process, such as their ability to work in a team, their problem - solving strategies, and their progress in implementing the competition tasks. Industry feedback provides an external and practical perspective. For example, if students' competition works are implemented in real - world health projects, the feedback from industry professionals, such as health managers in community health centers or health educators in non - profit organizations, can offer valuable insights into the practicality and effectiveness of the students' work. This multi - faceted evaluation mechanism provides a more comprehensive and accurate assessment of students' learning outcomes and practical capabilities (Yao et al., 2021).

3.2. Objectives of the Practical Teaching Model

The core objective of the "Competition-Driven and Competition-Teaching Integration" practical teaching model is to cultivate students' innovative and practical abilities while enhancing their comprehensive qualities. By organically combining competition elements with teaching resources, teaching processes, teaching evaluations, and ability cultivation, it can effectively stimulate students' learning interests, enthusiasm, and innovation. At the same time, it also promotes the transformation of the teaching model towards informatization, the development of teaching methods towards diversification, and the shift of teaching evaluation towards a process - oriented approach. It deeply integrates scientific research thinking, basic theories, and

professional skills into practical teaching, guiding students to carry out active and research - based learning and master self - learning and professional skills.

In the process of "promoting learning through competitions", students participate in various competition activities, learn knowledge, exercise skills, and cultivate interests though practice, achieving a close combination of theoretical knowledge and practical applications, improving learning effects, and promoting personal development. In this process, teachers are involving in the entire process of the competition, which enhances their innovative teaching innovation awareness, improves their teaching abilities, optimizes the teaching quality and effect, and creates a positive learning environment. Additionally, this model uses students' competition activities as a bridge to build school-enterprise collaboration platforms, it also helps students to better understand the job market, make career plans in advance, cultivate employ-ability and entrepreneurship and confidence, and enhance their employ-ability, discover entrepreneurial opportunities, and truly achieve "promoting learning, teaching, and employment through competitions" as shown in table 1.

Table 1. Hierarchical Design of Teaching Objectives

Objective Level	Specific Connotation	Corresponding Competition Ability
Basic level	Master core skills such as health needs assessment and intervention program design	Competition proposal writing ability
Advanced Level	Possess teamwork, project management, and on-site response abilities	Competition roadshow and defense ability
Innovative Level	Form evidence-based health problem-solving thinking	Competition result transformation and innovation ability

3.3. Implementation Paths and Strategic Innovations

With the rapid development of the information society and the Internet + era, traditional educational concepts and teaching models no longer meet the modern education development needs. However, the current practical education of many professional courses has not yet formed a systematic curriculum and teaching system at the macro-educational level.

3.3.1. Deep Integration of Curriculum Content and Competition Tasks

The deep integration of curriculum content and competition tasks is a cornerstone of the "competition - driven and competition - teaching integrated" model. Taking the "National College Students' Health Management Case Competition" as a vivid example, this integration process unfolds in a systematic and meticulous manner (Shojaeezadeh, D., & Heshmati, H, 2018).

Pre - stage Docking: In the initial pre - stage, educators must conduct a comprehensive and in - depth analysis of competition rules. For the "National College Students' Health Management Case

Competition", understanding the specific requirements for case design, data collection, and intervention implementation is crucial. Once these requirements are clear, they can be effectively translated into curriculum units. For instance, the "chronic disease management case design" requirement of the competition aligns closely with the "Chronic Disease Health Education" chapter in the curriculum. By integrating the competition - specific content into this chapter, students are exposed to real - world - like case - based learning within the context of their regular curriculum. This not only enriches the teaching content but also makes it more relevant and practical, as students are now learning with the ultimate goal of participating in a competitive event in mind (Wu et al., 2019).

Mid - stage Implementation: During the mid - stage, the learning process takes on a more hands - on and project - based approach. Students form groups, mirroring the team - based nature of most real - world health management projects. They then embark on a comprehensive journey that includes "case investigation - plan design - simulated intervention". In the case investigation phase, students need to gather relevant data, which may involve conducting surveys, interviews, or analyzing existing health records. For example, when dealing with a chronic disease management case, they might survey patients' lifestyle habits, medical histories, and current treatment adherence. Based on this data, they move on to the plan design stage, where they formulate a detailed health management plan, taking into account factors such as the patients' needs, available resources, and the latest evidence - based practices. Teachers play a pivotal role during this process. They provide guidance based on the competition scoring criteria, helping students to understand what is expected of them in terms of quality, innovation, and practicality. This guidance ensures that students' work is not only in line with the academic requirements but also competitive in the context of the competition (Guo et al., 2019).

Post - stage Transformation: The post - stage is where the fruits of students' labor are refined and presented on a larger stage. Excellent course assignments, which are the result of the mid - stage implementation, are carefully optimized to be transformed into competition works. This transformation process may involve further data validation, refinement of the intervention strategies, and improvement of the presentation format. Once optimized, these works can be submitted to provincial and national competitions. This not only gives students a chance to showcase their skills and knowledge but also provides them with valuable feedback from a broader audience, including industry experts and peers from other institutions. The experience of participating in these competitions further enhances their practical abilities and understanding of the health management field (Li, 2021).

3.3.2. Interdisciplinary Collaborative Teaching Mechanism

Interdisciplinary Collaborative Teaching Mechanism Form a "competition tutor team" composed of teachers from public health, health communication, statistics, and other professions to carry out collaborative guidance for complex competition tasks (such as health big data analysis competitions). For the "National College Students' Preventive Medicine Skills Competition" as an example, the specific operation guidelines are follows from collaboration frequency, communication method, and responsibility boundaries.

For collaboration frequency, there are there phases in this part, the Pre-competition preparation (2–3 months before the competition), hold weekly joint guidance meetings (90 minutes per meeting) to review students' progress. Mid-competition implementation (1 month before the competition) phase, conduct biweekly on-site or online meetings to solve urgent problems to meet students' competition requirements. Finally, Post-competition summary (1 week after the competition), every participants, no matter teachers or students, hold a one-time joint meeting to summarize experience and update teaching materials.

For communication methods, in the first task is forming "competition tutor team" including participating students and instructor teams, teachers from diverse fields such as public health, health communication, and statistics. Establish a dedicated WeChat group (for Chinese universities) or Microsoft Teams channel for the tutor team and students. For the cross-regional collaboration (e.g., between Inner Mongolia Medical University and experts from Beijing), conduct monthly video conferences using Tencent Meeting. And some Cloud (Tencent Cloud, Alibaba Cloud) are used to share all the information needed for the competition.

For responsibility boundaries, the complexity of health-related issues necessitates an interdisciplinary approach, and the "competition - driven" model responds to this need through the establishment of an interdisciplinary collaborative teaching mechanism, which is designed to break down the silos between different academic disciplines and leverage the expertise of various professionals to better guide students in competition - related tasks (Liu et al., 2024).

In the "National College Students' Preventive Medicine Skills Competition", public health teachers, with their in - depth understanding of disease prevention strategies and health systems, are responsible for guiding students in confirming target group and designing effective intervention plans. Statistics teachers then design a sampling plan for needs assessment in charge of "data validity"—e.g., guiding students to use correctness of statistical methods in competition reports. And communication teachers focus on "expression effectiveness"—e.g., optimizing the language of health science popularization materials (e.g., translating professional terms into Mongolian colloquialisms for pastoral areas) and training students' on-site defense skills (Wang et al., 2024).

This collaborative approach ensures that students receive comprehensive guidance, covering all aspects of the competition task. The combined efforts of these teachers create a rich learning environment where students can integrate knowledge from different disciplines, which is essential for solving real - world health problems.

3.3.3. Construction of School - Enterprise Collaborative Practice Platforms

The construction of school - enterprise collaborative practice platforms is another strategic innovation of the competition - driven model. By collaborating with community health service centers, health management institutions, and other relevant industry entities, schools can create "competition practice bases" that bridge the gap between academic learning and real - world application.

These practice bases serve as the perfect testing ground for students' competition - related ideas

and projects. For example, in the "Community Health Promotion Competition", students may design innovative health promotion programs for specific community groups, such as promoting physical activity among the elderly or improving nutrition awareness among children. These programs can then be implemented in the community health service centers that are part of the practice base. The advantage of this "real - world" implementation is two - fold. Firstly, it allows students to see the actual impact of their programs, which helps them to better understand the challenges and opportunities in community health promotion. They can observe how the community members respond to their interventions, whether the programs are effectively reaching the target audience, and what adjustments may be needed. Secondly, the implementation in real - world settings provides an opportunity for industry - professional evaluation. Industry mentors, who are experienced health managers or educators in the community health service centers, can work closely with university teachers to evaluate the effectiveness of the students' projects. Their practical insights and on - the - ground experience can offer valuable feedback to students, helping them to improve their skills and refine their future projects. This school - enterprise collaboration not only enhances the practical value of competition results but also provides students with a unique learning experience that is essential for their future careers in the health field (Tang et al., 2024).

3.3.4. Competition-Teaching Integration: Diversifying Practices and Enhancing Comprehensive Abilities

The course "Health Education and Health Promotion" not only emphasizes the cultivation of students' theoretical knowledge and professional skills, but also pays more attention to comprehensive literacy. The requirements of various competitions at all levels for students' comprehensive ability are in line with the curriculum training goals, which provides a good opportunity for the integration of competition and education.

Skill competitions expand practical teaching platforms of the talent training program,While the practical teaching mode of competition and education integration focuses on guiding students to promotes independent, exploratory and collaborative learning, and highlights the cultivation of students' comprehensive professional ability. In the process of guiding students to participate in the competition, the teaching team pays more attention to cultivating students' ability of innovation, teamwork and on-the-spot adaptability, which prompts the teaching team to consciously carry out teaching reform and improve professional ability and teaching level. After that, the teacher team optimized the teaching methods and formed a positive interaction with the students through the exchange and reflection of the competition experience. Realizing the "competition-driven learning" and "integration of competition and education" to achieve the effect of mutual benefit of teaching.

In terms of "competition-driven learning" practical teaching methods, that transforms competition into a two-way interactive (teacher-student) teaching method. This requires the teaching team should always pay more attention on the development of professional courses, accurately grasps the actual needs of the major professional, realizing the organic combination of theoretical knowledge and reality needs, and dynamically optimize the teaching content. At the same time, the practical part of this course is innovatively combined with summer practice, and

through the interactive form of "going out" (teachers leading students into health management industry institutions) and practice experts "inviting in" (hiring practice experts to share experience), it makes up for the limitations of students' on-campus practice, promotes the deep integration of competition, teaching reform and talent training, and comprehensively improves students' professional comprehensive ability.

Meantime, the practical part of this course is innovatively combined with the students' summer practice, and through the interactive form of "going out" (teachers leading students into health management industry institutions) and practice experts "inviting in" (hiring practice experts to share experience), it makes up for the limitations about the practice only on the campus, and promotes the deep integration of competition and teaching reform and talent training, finally comprehensively improves students' professional comprehensive ability.

4. Implementation Effects and Influence Mechanisms of the Teaching Model

4.1. Enhanced Student Autonomy and Innovative Practice

The implementation of the competition - driven and competition - teaching integrated model has transformed from depending on teacher teaching theory in classroom to student-centered and teacher-guided models, and the scope of practical teaching has been extended from the classroom and campus to the summer practice and competition venues, has brought about remarkable improvements in students' abilities, so as to realize the effective connection between practical skills and professional skills. The implementation of the practical teaching model of "promoting learning through competition and integrating competition and education", has greatly stimulated students' enthusiasm and innovation in learning, allowing students to fully tap their potential in project training.

Since 2019, the teaching team has introduced competitions elements into practical teaching of the "Health Education and Promotion" course, remodeling teaching form, transforming traditional teacher-students interaction, and establishing a collaborative learning mechanism. The implementation effects of the model were verified through a tracking study included 150 students majoring in Health Service and Management at Inner Mongolia Medical University (China) from 2019 to 2022, covering 4 consecutive cohorts (2019: 30 students, 2020: 40 students, 2021: 40 students, 2022: 40 students) with the gender ratio was 23.3% male (35 students) and 76.7% female (115 students). All students completed the "Health Education and Promotion" course and participated in the model's practical teaching activities, and all of them participated in a questionnaire survey, which conducted to detected the competition participant status. The competition participation rate increased from 32% in 2019 to 85% in 2022, with an average annual growth of 18%. The teaching team with students had participated in national/provincial competitions (e.g., the National College Student Health Science Competition, Health Science Popularization Competition, Sand Table Competition) and received excelling results (won 5 national second prizes and 6 provincial first prizes), with the practice participant quality improved by 40% compared with that before the model implementation.

Competition-driven learning builds student confidence and problem-solving skills, and also

enhances innovation through real-world challenges. The 2022 student team designed the Science Popularization Manual for Hypertension Prevention and Treatment among Elderly People in Pastoral Areas based on curriculum practice results in the "National College Students' Health Science Popularization Competition", which combined the cultural characteristics of the Mongolian language, won the national second prize, and was adopted and promoted by the Inner Mongolia Health Commission.

4.2. The Teacher Teaching and Professional Development Promotion

The competition - driven teaching model also has a profound impact on teachers, leading to a two - way promotion of their teaching and professional development. Teachers achieve the integration of "teaching - research - practice" through competition guidance, which enriches their professional experience and improves their teaching quality (Mu et al., 2025).

Teaching Method Innovation: As many as 87% of teachers have transformed competition cases into teaching materials, which has led to the development of new and more effective teaching methods. For example, they have introduced "scenario simulation" and "project - based learning" methods. In scenario simulation, teachers create real - world - like health - related scenarios for students, such as simulating a community health intervention project. This method allows students to practice their skills in a more immersive environment. Project - based learning, on the other hand, enables students to work on long - term projects similar to those in competitions, where they can integrate knowledge from different courses and develop problem - solving skills. These new teaching methods are more in line with the practical - oriented nature of the health discipline and have been well - received by students, as they make the learning process more engaging and relevant (Xiao & Zhao, 2024).

Research Ability Improvement: Based on the teaching research results formed by competition guidance, teachers have achieved significant progress in their research. They have obtained 3 provincial teaching reform projects, which are focused on further optimizing the competition - driven teaching model. Additionally, they have published 7 related papers, contributing to the academic discussion on innovative teaching methods in the health discipline. For example, some of these papers explore the effectiveness of different competition - based teaching strategies, while others discuss how to better integrate competition tasks with curriculum content. These research achievements not only enhance the teachers' academic status but also provide valuable insights for the continuous improvement of the teaching model (Mu et al., 2025).

Practical Experience Accumulation: Through school - enterprise cooperation competition projects, teachers have had the opportunity to participate in 12 real health management projects. This practical experience is invaluable as it allows teachers to stay updated with the latest industry trends and challenges. For example, in a project related to chronic disease management in a community health service center, teachers can observe firsthand the practical problems faced by health workers and the needs of the community. This practical knowledge can then be brought back to the classroom, making their teaching more practical and relevant. Moreover, the experience also helps teachers better understand the requirements of the health industry for students' skills, enabling them to adjust their teaching content and methods accordingly.

5. Reflection and Prospect: Model Optimization and Future Development

5.1. Existing Challenges and Improvement Directions

Unbalanced Competition Resources: Universities in China other than those located in Beijing (the capital of China), often face significant disadvantages in accessing competition information and establishing strong enterprise cooperation. For example, compared to universities located in economically developed regions with abundant resources, non - capital universities may have limited exposure to the latest competition announcements, industry - led competitions, and opportunities for in - depth collaboration with leading health enterprises. This resource gap can hamper students' ability to participate in high - quality competitions and gain valuable industry experience. To address this, the establishment of a regional competition resource sharing platform is crucial. Such a platform could centralize competition information, including upcoming events, competition guidelines, and case studies of past winning entries. It could also facilitate communication and cooperation among universities, enterprises, and industry associations in the region, enabling non - capital universities to access resources that were previously out of reach (Yang, 2022).

Differences in Student Participation: A notable issue is the varying levels of student participation. Some students, burdened by academic pressure or lacking confidence in their abilities, are less likely to engage in competition - based learning. In traditional educational settings, students may be more accustomed to a structured, exam - focused learning environment, making them hesitant to step into the more dynamic and competitive realm of health - related competitions. To counter this, a "stepped competition participation mechanism" should be designed. For instance, starting with class - level preliminary competitions, where the competition tasks are relatively simple and designed to build students' confidence and basic skills. These could progress to school - level semi - finals, with gradually increasing difficulty and complexity. This approach allows students to gradually adapt to the competitive environment, develop their skills over time, and increases the likelihood of broader participation (You, 2024).

Improvement of the Evaluation System: The current competition evaluation system, while effective to some extent, has room for improvement. It predominantly focuses on the final results of competitions, overlooking the rich learning process that students go through. For example, students may make significant progress in their problem - solving skills, teamwork, and iterative thinking during the competition preparation phase, but these efforts are not fully reflected in the evaluation. To rectify this, "process evaluation" indicators should be added. This could include tracking students' plan iteration records, which show how they respond to challenges and adjust their strategies. Team contribution assessment, which evaluates each member's role in the team, such as leadership, communication, and technical contributions, should also be an integral part of the evaluation system. By incorporating these process - related indicators, a more comprehensive and accurate assessment of students' learning and development can be achieved (Xiang et al., 2024).

5.2. Future Research and Practice Directions

Looking ahead, several promising research and practice directions can further enhance the

competition - driven teaching model in the health education and promotion field.

Digital Transformation: The rapid advancement of technology offers new opportunities for the integration of digital elements into the competition - driven model. Combining virtual reality (VR) technology, for example, can construct "virtual health competition scenarios". In these scenarios, students can simulate complex health intervention projects in a virtual environment that closely mimics real - world situations. They can interact with virtual patients, community members, and health professionals, practice their communication and intervention skills, and receive immediate feedback. This not only breaks through the time and space limitations of traditional competitions but also provides a safe and cost - effective way for students to gain practical experience. For instance, in a virtual community health promotion project, students can test different intervention strategies without the constraints of physical resources or real - world risks (Saroha S, 2025).

Long - term Mechanism Construction: To solidify the positive impact of the competition - driven model, it is essential to explore its incorporation into the professional talent training plan on a long - term basis. This would involve integrating competition - related activities and learning objectives throughout the four - year undergraduate study. For example, in the first year, students could be introduced to basic health - related competitions as part of their general education courses, to develop an initial understanding of the practical application of health knowledge. As they progress to higher years, the competition tasks could become more complex and specialized, aligning with their major courses. This continuous exposure to competition - driven learning would help students develop a more comprehensive and in - depth set of practical skills, innovation abilities, and a better understanding of the health industry's demands (Wang, 2024).

Cross - cultural Comparison: Given the global nature of health issues, comparing and analyzing the competition - driven teaching models of health disciplines at home and abroad can provide valuable insights. Different countries may have unique approaches to integrating competitions into health education, influenced by their educational systems, cultural values, and industry needs. For example, some countries may emphasize community - based competitions, while others may focus more on research - oriented competitions. By studying these differences, it is possible to extract optimization paths suitable for China's national conditions. This could involve adapting successful international practices, such as innovative competition formats, evaluation methods, or industry - university cooperation models, to the Chinese health education context, while also sharing China's own successful experiences with the international community.

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