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Clinical Practice Curriculum in the Field of Teacher Education in China: Connotation, Characteristics, and Construction Direction

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Abstract

The clinical practice curriculum in teacher education cultivates "clinical expert teachers" through authentic educational environments. By diagnosing, intervening in, and reflecting on teaching challenges, it integrates theory with practice, addressing issues like "knowledge representation gaps" and "stereotyped teaching behaviors." However, influenced by traditional objectivist epistemology, clinical practice in China remains marginalized, with education-related courses comprising only about 10% of total instructional hours - insufficient for developing practical knowledge and clinical competence. While prior research has explored theoretical foundations, characteristics, and models, studies remain fragmented, lacking a coherent framework where "theory informs characteristics, characteristics guide pathways, and pathways refine theory." This study proposes a tripartite "connotation–characteristics–pathways" framework, articulating principles of contextual embeddedness, problem-oriented teaching, and reflective practice; identifying field-based, problem-focused, and critical dimensions; and advancing a "four-in-one" plan targeting cognitive-competency-affective development, integrated structures, collaborative implementation, and multi-evidence evaluation.

Keywords: teacher education; clinical practice curriculum; curriculum development

1. Introduction

Teacher education is inherently a professional formation grounded in practice and characterized by distinct "clinical" attributes. Its core developmental logic requires teacher candidates to transform static theoretical knowledge into dynamic clinical teaching competence within authentic or highly simulated teaching contexts. In 2018, the Central Committee of the Communist Party of China and the State Council issued the "Opinions on Comprehensively Deepening the Reform of Teacher Development in the New Era," explicitly advocating to "optimize the teacher education curriculum system with a practice-oriented approach, based on the reform and development needs of basic education" (Xinhua News Agency, 2018). This policy unequivocally established the central role of clinical practice within the teacher education curriculum system. The quality of clinical practice curriculum development not only serves as a key indicator for evaluating the scientific validity and effectiveness of teacher education programs but also determines whether teacher candidates can effectively integrate subject knowledge, educational theory, and teaching practice. It fundamentally shapes the professional competence of the teaching force and the educational outcomes of basic education.

However, influenced by traditional objectivist epistemology, Chinese teacher education has long overemphasized "the objectivity, universality, and value-neutrality of knowledge" (Shi, 2001) in its curriculum design. This has resulted in a tripartite curriculum structure centered on general cultural knowledge, subject-specific knowledge, and educational theory, wherein clinical practice has consistently been marginalized. Research indicates that "the current teacher education curriculum primarily consists of three components: general education courses, subject specialization courses, and educational professional courses, with education-related courses (including teaching practice) accounting for only about 10% of total instructional hours" (Li, 2011). The weakness in clinical practice instruction hinders teacher candidates from constructing personalized, context-adaptive practical knowledge, leading to issues such as "discontinuities in knowledge representation" and "stereotyped teaching behaviors" (Liu et al., 2024). Consequently, many beginning teachers struggle to translate theory into practice and adapt to classroom realities, prolonging their professional induction period and constraining the steady improvement of basic education quality.

To address these challenges, this study proposes a tripartite analytical framework integrating "conceptual foundations - core characteristics - development pathways." On one hand, it systematically elaborates the theoretical basis and practical logic of clinical practice in teacher education from perspectives such as teacher professional development theory and situated learning theory, clarifying its conceptual distinction from traditional teaching practice. On the other hand, contextualized within China's policy landscape and practical realities of teacher education reform, it deeply analyzes the qualitative characteristics distinguishing clinical practice from conventional practicum models. The study further explores practical pathways and implementation strategies for high-quality curriculum development, aiming to foster deep integration and synergistic coexistence of theoretical and practical instruction in authentic teaching environments, thereby enhancing teacher candidates' comprehensive clinical practice capabilities.

2. Literature Review

Since the 21st century, with the deepening professionalization of teacher education, clinical practice curricula have emerged as a critical link connecting theoretical instruction and practical training in teacher education. Their value in enhancing teacher preparation quality has become increasingly prominent, spurring multifaceted research in this area. Based on data retrieved from the China National Knowledge Infrastructure (CNKI) as of October 10, 2025, a total of 1,387 academic publications were identified using "clinical practice curriculum" as the exact search term. Research content covers core areas such as tracing theoretical foundations, constructing practical models, and designing evaluation systems. A systematic review reveals that existing studies primarily focus on three aspects: theoretical explanations, characteristic analyses, and model construction related to clinical practice curricula.

In terms of theoretical explanations, scholarly discussions mainly revolve around conceptual definitions, theoretical foundations, and generative mechanisms. Regarding the connotation of clinical practice curricula, a core consensus involves drawing analogies from the "clinical" paradigm in medical education, emphasizing the situated and practical nature of the curriculum. Chen (2022), by comparing the dynamic nature of clinical diagnosis and treatment in medicine, pointed out that the core value of clinical practice curricula in teacher education lies in providing teacher candidates with "non-repeatable, contextualized learning resources," promoting their ability to make immediate decisions in complex classroom scenarios. Zhang (2022), in *Clinical Pedagogy*, further systematically elaborated this understanding, clarifying that clinical practice curricula aim at "generating practical knowledge" as the core objective, facilitating the transformation of educational theory into teaching practice through contextualized interaction and immersive experiences. Concerning theoretical foundations, interdisciplinary theories intersect to form the curriculum's theoretical framework. Wang (2024) indicated that reflective practice theory, constructivist learning theory, and situated learning theory collectively constitute the three theoretical pillars of clinical practice curricula: reflective practice theory provides the logical cycle of "practice-reflection-repractice," constructivist learning theory emphasizes teacher candidates' active construction of practical knowledge, and situated learning theory highlights the key role of "legitimate peripheral participation" in the formation of practical competence. Yang (2023) further supplemented that curriculum design should adopt a "practitioner inquiry" perspective, breaking down the barriers between disciplinary knowledge and pedagogical knowledge to achieve their deep integration and dynamic adaptation. Regarding generative mechanisms, scholars focus on the formation pathways of practical knowledge and ability, proposing diverse models. Chen (2022), by constructing a clinical teacher teaching competency model, proposed a dual-pathway model of "natural generation" and "active construction," where the former emphasizes accumulating experience through trial-and-error and reflection in authentic contexts, while the latter accelerates the formation of practical ability through systematic curriculum design. Du and Wang (2023), through a comparative study of the US New Education Graduate School program, found that synchronizing school-based internships with theoretical courses and arranging the curriculum around "practical reflection" as a core thread can effectively promote the internalization and transfer of practical knowledge.

In terms of characteristic analyses, research primarily unfolds across three dimensions: practical orientation, partnership, and reflective practice. Firstly, clinical practice curricula possess a distinct practical orientation. Zhu et al. (2025), analyzing the physical education internship model at the University of Northern Colorado, USA, pointed out that such curricula center on "reflective practice" and "collaborative guidance," systematically fostering teacher candidates' practical abilities. Yang (2025) further proposed that by integrating "laboratory experiences" with "school-based internships," clinical practice curricula break through the linear limitations of "theory-practice" and achieve their bidirectional construction. Secondly, clinical practice curricula emphasize multi-stakeholder partnerships. Chen and Chen (2024), analyzing reforms in US New Education Graduate Schools, indicated that a "symbiotic" relationship between universities and schools is crucial, manifested specifically through diversified training entities, multi-context curriculum design, and evidence-based evaluation. Hong and Liu (2023), studying the US "Relay Education Graduate School," also showed that deep collaboration among universities, school districts, and schools forms the foundation for the curriculum's success. Similarly, the internship program at the University of Sydney, Australia, effectively promotes the continuous growth of pre-service teachers' professional experience by establishing equal, trusting, and mutually beneficial cooperative mechanisms (Yuan, 2024). Thirdly, reflective practice constitutes the core teaching method in clinical practice curricula. Yang (2021) stated that the goal of clinical practice curricula is to cultivate "reflective practitioners," enhancing students' problem awareness and critical thinking through clinical teaching strategies. Liu (2023), researching Australian Master of Education programs, found that evidence-based reflection promotes teacher candidates' deep examination of their own practice. Jiang (2019) further emphasized constructing a "clinical practice platform" to strengthen the mutual support between theoretical and practical courses, preventing practice from becoming merely technical.

In terms of model construction, scholars explore the implementation pathways of clinical practice curricula from both international comparison and local practice perspectives. Regarding international model references, mature experiences from countries like the United States and Australia are key research foci. Zhu et al. (2025), analyzing the US "clinical practice type" physical education internship model, proposed the need for integrated design encompassing problem-solving oriented reflective practice tasks, collaborative guidance teams involving university supervisors and school teachers, and a developmental evaluation system based on competency progression. Du et al. (2023), studying the pre-service training model of US New Education Graduate Schools, found that this model, oriented around "clinical practice" as the core, achieves deep integration of practical reflection and evidence-based teaching through designs such as "synchronizing school-based internships with theoretical courses" and "linking practical performance with course assessment." Hong (2022) and colleagues focused on the core commonalities of international models, pointing out that stable university-school partnerships and clear clinical practice standards are key supports for model success. In terms of local model exploration, scholars, based on the Chinese teacher education context, attempt to construct adaptive solutions.

Cheng (2016) proposed a Chinese characteristic "multiple integration" practice model, advocating breaking down barriers between universities, governments, and schools, constructing a "third space" for teacher education through policy guidance and resource sharing, and achieving integrated design of "training objectives - curriculum content - practice scenarios." Furthermore, some studies focus on pain points in local practice, such as insufficient guidance capacity of clinical teachers and superficial practice evaluation, proposing targeted improvement strategies and providing empirical support for refining local models.

Overall, existing research has made significant progress in theoretical explanation, characteristic analysis, and model construction, providing important theoretical references and practical insights for building clinical practice curricula with Chinese characteristics. However, in-depth analysis reveals considerable limitations in current research. First, research dimensions are relatively isolated, often focusing on a single dimension among theory, characteristics, or models, failing to incorporate all three into a unified analytical framework, which hinders revealing the internal linkage mechanism where "theoretical foundations support characteristics, characteristics guide pathways, and pathways reinforce theoretical foundations." Second, local research lacks systematization; existing local models mostly remain at the framework design level, lacking systematic consideration of "policy support - resource allocation - guarantee mechanisms." Third, research on the localized adaptation of international experience is weak, lacking in-depth exploration of how to integrate international models with China's teacher education management system and the realities of school operations. Therefore, this study intends to construct a tripartite analytical framework integrating "conceptual foundations - core characteristics - development pathways." On one hand, it aims to systematically explain the internal logical relationships among the three, addressing the fragmentation in existing research. On the other hand, based on the Chinese context, it seeks to explore pathways for the localized transformation of international experience and the systematic guarantee mechanisms for local models, providing more targeted theoretical guidance and practical strategies for the high-quality development of clinical practice curricula in Chinese teacher education.

3. The Origin and Conceptual Analysis of Clinical Practice Curriculum in Teacher Education

"Clinical practice" serves as the core anchor of the clinical practice curriculum in teacher education. Clarifying its origins, theoretical evolution, and practical context is the starting point for grasping the essence of the curriculum and constructing its theoretical framework. Therefore, it is necessary to explain the generative logic and core principles of the clinical practice curriculum from the two dimensions of "origin" and "connotation."

3.1 The Origin of the Clinical Practice Curriculum in Teacher Education

The term "clinical" originates from the ancient Greek word "klinein," which originally meant "close to the bedside." It initially referred specifically to the medical practice scenario where doctors diagnose and treat patients at the bedside. The French scholar Michel Foucault (2001), in *The Birth of the Clinic*, further defined it as a medical practice paradigm "focusing on real patients, centered on dynamic diagnosis, and oriented towards problem-solving," emphasizing its methodological characteristics of "contextual authenticity, problem specificity, and intervention professionalism."

The fundamental reason this concept could migrate to the field of teacher education lies in the essential congruence between medical clinical practice and teacher education. First, the service objects of both are centered on "people": medicine focuses on the physiological and psychological needs of patients, while teacher education focuses on the cognitive and developmental needs of students, both requiring responses to individual differences and contextual complexity. Second, the practical logic of both follows a closed-loop process of "observation–diagnosis–intervention–reflection": medicine diagnoses pathologies and formulates treatment plans through symptom observation, while teacher education needs to diagnose teaching problems and optimize teaching strategies through classroom observation. Third, professional competencies in both rely on contextualized generation: medical competence needs to be accumulated through clinical diagnosis and treatment, while teachers' practical abilities need to be constructed in real teaching scenarios. This congruence provides the theoretical basis for the migration of the "clinical" concept to teacher education.

In the 1960s, American educator James B. Conant (1963) first proposed the concept of the "clinical professor of education," advocating that teacher education should break through the limitations of "theory-based instruction" and cultivate "clinical experts" capable of "analyzing classroom problems, diagnosing teaching deviations, and implementing targeted interventions" in the teaching field. This marked the formal entry of the "clinical" concept into the theoretical horizon of teacher education. Entering the 21st century, the concept of clinical teaching became further systematized. Japanese scholar Tanaka (2000), in *Understanding Children: An Attempt at Clinical Pedagogy*, explicitly positioned "clinical" as a "research paradigm rooted in the educational field," proposing that teachers need to transform into "teaching diagnosticians, intervention implementers, and continuous reflectors" by observing children's behaviors and analyzing underlying motivations. Sato (2003), through empirical research, found that the "practical thinking" of excellent teachers possesses clinical thinking characteristics such as "improvisational response, contextual sensitivity, multiple adaptations, and dynamic reconstruction," providing empirical support for "clinical competence." Building on previous research, Sawada constructed a theoretical system of "clinical pedagogy" with three core axes: "field-based and practical nature," "pathological and problem-based nature," and "exploratory and critical nature" (Zhong, 2007), laying the theoretical framework for the clinical practice curriculum in teacher education.

From a practical perspective, the theoretical reconstruction of the "clinical" concept was ultimately realized through the institutionalization of practical models, forming an exploratory landscape involving multiple countries and pathways. At the end of the 19th century, John Dewey proposed the establishment of "laboratory schools for teacher education," positioning them as "clinical laboratories for teacher education" and advocating for the integration of theory and practice through the linkage of "theoretical teaching—laboratory school practice." The Horace Mann School and Lincoln School were practical carriers of this concept (Xu, 2012). Scholar John I. Goodlad further pointed out that "the prerequisite for universities to cultivate excellent teachers is to use high-quality primary and secondary schools as clinical practice bases" (Su, 1994), promoting the establishment of stable cooperative relationships between universities and schools.

In 2010, the Blue Ribbon Panel of the National Council for Accreditation of Teacher Education (NCATE) in the United States issued the report *Transforming Teacher Education Through Clinical Practice: A National Strategy to Prepare Effective Teachers*, formally incorporating "clinical practice" into the core standards of teacher education accreditation, requiring that educational internships run through the entire training process and setting minimum credit requirements. This marked the entry of the clinical practice curriculum into the institutionalization stage. Additionally, the United Kingdom built a trinity model of "university–school–educational administration agency," collaboratively developing clinical practice plans and sharing guidance resources through tripartite cooperation. Germany implemented a "two-year induction system," extending clinical practice into the initial employment period, forming a coherent system of "pre-service training - induction practicum." France established a "phased internship system," progressively advancing according to the gradient of "observation internship - assistant internship - independent teaching internship," ensuring the formation of clinical competence.

3.2 Defining the Connotation of the Clinical Practice Curriculum in Teacher Education

As an independent curriculum form, the connotation of the clinical practice curriculum in teacher education needs to be systematically explained from three levels: essential attributes, structural elements, and international trends.

In terms of essential attributes, the clinical practice curriculum represents a paradigm breakthrough from the traditional practicum model of "theory first, practice subordinate." Its essence is the deep integration of medical "clinical" logic with the needs of teacher education, forming a curriculum paradigm that takes the "educational field as the context, teaching problems as the core, and professional judgment as the goal." This is specifically manifested in three shifts: first, from "skill training" to "clinical thinking cultivation," focusing on cultivating teacher candidates' clinical thinking of "observation – diagnosis – intervention – reflection" in complex classroom situations, such as the immediate decision-making ability to respond to students' unexpected behaviors and adjust teaching pace; second, from "simulated situations" to "authentic problem-solving," relying on real educational settings and taking "teaching pathologies" (such as low student participation, disconnections in knowledge points, etc.) as the research object, promoting teacher candidates to construct practical knowledge while solving real problems; third, from "one-way output" to "reflective practice," through the closed loop of "practice–reflection–theoretical reconstruction–re-practice," promoting teacher candidates' organic integration of theoretical knowledge and practical experience, realizing the transformation from a "technical teacher" to a "reflective practitioner."

At the level of structural elements, the clinical practice curriculum includes three key dimensions: First, contextual embeddedness. Curriculum implementation must be rooted in real educational settings, relying on platforms such as "clinical teaching laboratories" and "school-based practice bases" to achieve deep integration of theory and practice. Second, problem orientation. The curriculum content must take real problems in education and teaching as the starting point, guiding teacher candidates to identify, analyze, and solve "educational pathologies," cultivating their problem awareness and solving abilities. Third, reflective integration.

Through systematic reflective practice, the curriculum promotes the organic integration of theoretical knowledge and practical experience, forming a professional development cycle of "practice–reflection–re-practice."

From the perspective of international trends, the clinical practice curriculum has become a common direction for global teacher education reform. The core consensus is reflected in "strengthening the weight of practice, improving collaborative mechanisms, and focusing on competency progression." The United States has increased the proportion of clinical practice credits to more than 30% of the total credits; the United Kingdom requires teacher candidates to accumulate no less than 120 days of practice (Liu et al., 2009); Germany and France have specified the allocation of clinical practice instructors and assessment standards through legislation. These institutional designs highlight the recognition of the professional value of the clinical practice curriculum. Based on drawing on international experience, Chinese scholars have deconstructed the connotation of the clinical practice curriculum from aspects such as the integration of theory and practice in the educational field, understanding the differences of educational objects, and developing problem-solving abilities based on reflective practice (Li, 2020), providing an important theoretical reference for the localized construction of the clinical practice curriculum.

In summary, the clinical practice curriculum in teacher education is a professional curriculum form that takes the real educational context as the field, the diagnosis and solution of educational and teaching problems as the main line, and cultivates teacher candidates' clinical observation, professional judgment, and practical intervention abilities through systematic clinical training of "contextual embedding–problem inquiry–reflective integration." Its ultimate goal is to cultivate clinical expert teachers capable of "diagnosing educational phenomena, proposing evidence-based prescriptions, and conducting continuous reflection."

4. Basic Characteristics of the Clinical Practice Curriculum in Teacher Education

Based on the previous analysis of the origin and connotation of the clinical practice curriculum, and integrating international practical experience with local exploration, its basic characteristics can be summarized into three dimensions: "Field-based and Practical Nature," "Pathological and Problem-based Nature," and "Exploratory and Critical Nature." These three aspects form a progressive relationship of "field carrier - content logic - thinking core," collectively supporting the "clinical orientation" essence of the clinical practice curriculum.

4.1 Field-based and Practical Nature: Competency Construction Anchored in Authentic Settings

"Field-based nature" and "practical nature" are the foundational characteristics of the clinical practice curriculum. The former defines the contextual boundaries of curriculum implementation, while the latter clarifies the logical pathway for competency development. Together, they break away from the linear separation of the traditional "theoretical instruction–later practicum" model. Specifically, "field-based nature" refers to the shift of the curriculum context from university simulation laboratories to real educational settings such as primary and secondary school classrooms and community education institutions, ensuring that teacher candidates directly face the complexity and uncertainty of teaching.

"Practical nature" emphasizes that teacher candidates transform static theory into dynamic teaching ability through the cycle of "personal participation - problem-solving - reflective internalization," rather than passively receiving skill training. The core logic of both is "anchoring practice in real settings and generating knowledge through the process of practice." For example, the Physical Education program at the University of Northern Colorado in the United States places teacher candidates directly in real physical education classrooms in primary and secondary schools. Under the guidance of dual mentors (university supervisor + school-based clinical teacher), they fully participate in teaching design, classroom organization, and student management, addressing on-site issues such as "variations in student participation" and "sudden sports injuries" in real-time (Zhu et al., 2025). This "learning by doing" clinical practice accurately addresses the core issue of physical education teacher candidates "understanding theory but not knowing how to teach." The University of Sydney in Australia further strengthens the "reflective transformation of field experience," requiring teacher candidates to document field cases such as "expert teachers' handling of classroom emergencies" and "design of differentiated teaching activities." Through weekly reflection sessions, experiences are distilled into transferable teaching strategies (Yuan, 2024), realizing the complete chain of "field practice–experience transformation - competency consolidation." Evidently, as the basic characteristics of the clinical practice curriculum, the essence of field-based and practical nature is to resolve the issue of theoretical knowledge being "detached from reality." It anchors the construction process of teaching knowledge in real educational settings, allowing theoretical understanding to guide practice and practical feedback to inform theoretical depth, ultimately achieving the synergistic evolution of "knowing" and "doing."

4.2 Pathological and Problem-based Nature: Competency Progression Centered on Problem Diagnosis

Following the establishment of the contextual foundation by "field-based and practical nature," "pathological and problem-based nature" further defines the content logic of the curriculum. Its essence is to draw on the medical thinking of "disease diagnosis" to shift teacher candidates from "skill imitation" to "problem-solving." Specifically, "pathological nature" means that teacher candidates, like doctors diagnosing diseases, need to systematically identify "structural dilemmas" in teaching, such as lack of student learning motivation, disorder in classroom management, and mismatches between teaching methods and cognitive levels. "Problem-based nature" emphasizes starting from real problems to carry out systematic practice of "diagnosis–intervention–evaluation," rather than mechanically applying standardized teaching procedures. Together, they aim at "systematic problem-solving ability in complex situations." For example, the mathematics teacher clinical training program at the University of Delaware in the United States solidifies this characteristic through a "teaching problem log": teacher candidates continuously record problems such as "cognitive obstacles in understanding geometric concepts" and "coping with differences in learning progress." Combined with student assignments and classroom observation data, and with the collaboration of dual mentors, they diagnose causes (e.g., "cognitive obstacles stem from lack of intuitive experience"), design intervention plans (e.g., introducing geometric model teaching aids), and evaluate implementation effects (Chen, 2019).

This "problem-driven" model frees teacher candidates from superficial imitation of teaching methods. The U.S. "clinical practice type teacher" training model further places "responding to student needs" at the core of the curriculum. When teacher candidates find that students struggle to adapt to lecture-based teaching, they need to actively introduce project-based learning and tiered task designs, completing the full practice of "identifying the problem - prescribing solutions" (Pang, 2019), thereby enhancing the targeted nature of problem-solving. Additionally, Huaiyin Normal University in China, in its excellence program for primary school teacher training, has constructed a closed-loop model of "problem diagnosis–plan design–trial teaching optimization – reflective distillation," enabling teacher candidates to form transferable problem-solving strategies, such as "designing combined solutions of 'gamified teaching + short tasks' for lower-grade students with short attention spans" (Ren, 2020). Thus, the value of this characteristic lies in anchoring teacher candidates' professional growth in "real problems." Through continuous problem exposure, diagnostic analysis, and strategy reconstruction, it enables them to achieve a competency leap from "knowing how to teach" to "teaching skillfully."

4.3 Exploratory and Critical Nature: Wisdom Generation with Reflection as the Core

"Exploratory nature" and "critical nature" represent the thinking core of the clinical practice curriculum. Building on the "field" and "content" of the previous two characteristics, they promote the transformation of teacher candidates from "technical executors" to "reflective practitioners," constituting the advanced form of the curriculum. Specifically, "exploratory nature" refers to teacher candidates actively exploring teaching rules (e.g., "group cooperation requires optimized grouping strategies to enhance participation") and discovering the potential of their personal teaching style through continuous reflection. "Critical nature" emphasizes examining their own and others' teaching behaviors from a rational perspective, questioning "why teaching methods are effective" and "whether they are suitable for different students," thereby breaking through solidified experiences and fixed thinking patterns. The core of both is "promoting discovery through reflection and fostering innovation through critique." For example, the "growth portfolio" evaluation system at Michigan State University in the United States embodies the "exploratory nature": teacher candidates need to include teaching videos, student feedback, and reflection reports, regularly engaging in "review–analysis–distillation" to discover their own strengths and weaknesses, such as "finding that situational teaching can enhance interest but requires controlling situational complexity," gradually grasping the essential rules of teaching (Li, 2018). Research by Yang (2021), based on reflective practice theory, points out that the "critical nature" of the clinical practice curriculum needs to go beyond superficial reflection on "method effectiveness" to deeply question "the alignment between teaching objectives and student development needs" and "whether evaluation methods reflect educational orientation," promoting reflection from the "technical level" to the "value level." The "evidence-based reflection" in the U.S. New Education Graduate School further strengthens criticality: when teaching a certain knowledge point proves ineffective, teacher candidates need to critique their own teaching design (e.g., "whether the students' cognitive starting point was underestimated") based on student achievement and classroom interaction data, rather than attributing it to student ability, shifting teaching decisions from "experiential judgment" to "evidence support" (Du, 2023).

Thus, as the advanced characteristic of the clinical practice curriculum, its fundamental value lies in transforming practical situations into a "field for constructing professional cognition," enabling teacher candidates to generate personal educational theories through reflection and achieve teaching innovation through critique.

5. Systematic Construction Pathways for the Clinical Practice Curriculum in Teacher Education

To ensure the effective realization of the educational value carried by the clinical practice curriculum, it is essential to construct a systematic "four-in-one" curriculum framework supported by the pillars of objectives, structure, implementation, and evaluation. This provides a solid practical framework for its standardized development and quality enhancement.

5.1 Curriculum Objective Orientation: Anchoring the Professional Development of Clinical Practice - Oriented Teachers

The objectives of the clinical practice curriculum must be centered on cultivating "clinical practice-oriented teachers," establishing a mutually supportive three-dimensional system of "cognition – ability – affection" to avoid fragmented goals or disconnection from practice. In the cognitive dimension, the orientation should be the "active construction of practical knowledge," guiding teacher candidates to transform public educational theory and subject knowledge into "contextualized pedagogical content knowledge (PCK)." For example, addressing the "weak abstract thinking in lower primary mathematics" by forming specialized teaching knowledge such as "teaching aid demonstration + association with life situations," achieving the transition from "knowing theory" to "using theory." In the ability dimension, the focus should be on "responding to complex teaching problems" as the core, emphasizing the cultivation of teacher candidates' clinical ability chain to identify, analyze, and effectively address complex teaching issues. This involves designing authentic task scenarios like "managing student attention dispersion" and "implementing differentiated instruction" to train teacher candidates' immediate response skills and long-term strategy design capabilities (Pang, 2019). In the affective dimension, while drawing on international experience (such as the U.S. role positioning of teachers as "agents of social justice"), it is crucial to align with China's fundamental task of "fostering virtue through education," nurturing teacher candidates' firm belief in educational equity, high professional ethics, and conscious commitment to continuous development. Thus, the achievement of the clinical practice curriculum's objectives relies on the synergistic interaction of cognition, ability, and affection: the cognitive dimension provides the knowledge base for ability enhancement, the ability dimension offers the practical vehicle for cognitive application, and the affective dimension supplies the value support for both, together constituting the complete professional profile of a clinical practice-oriented teacher.

5.2 Curriculum Structure Design: Building a "Diversely Collaborative, Coherently Integrated" Curriculum Ecology

The "integrated and diversified" curriculum structure should take "teacher candidate professional growth" as the main thread, integrating the diversity of settings, content, and stakeholders to form a system that is functionally complementary and organically connected. From the perspective of setting structure, a three-dimensional practical space should be constructed, with schools as the core setting, communities/museums/enterprises as extended settings, and digital platforms as simulated settings. In the core setting, teacher candidates need to deeply participate in the entire process of observing classes, trial teaching, collective lesson preparation, after-school tutoring, and home-school communication, directly facing the complexity of real teaching. In extended settings, through activities such as "community science teaching" and "museum study tour guidance," teacher candidates develop the ability to integrate cross-domain resources and design comprehensive practical activities. In simulated settings, relying on virtual simulation technology to create "high-fidelity teaching situations," simulating typical scenarios like "under-participation of struggling students" and "loss of classroom discipline," supports teacher candidates in repeatedly practicing teaching strategies in a low-risk environment. From the perspective of content structure, a "gradationally progressive" sequence of practical tasks should be designed. In the cognitive apprenticeship stage, the core is "observation and problem identification," establishing an initial understanding of teaching practice and cultivating problem awareness by recording "expert teachers' classroom management techniques" and "characteristics of student learning behaviors." In the skill segmentation stage, the focus is on "breaking through specific competencies," conducting concentrated training on individual skills such as "teaching design," "classroom interaction," and "assignment grading." In the comprehensive practicum stage, aiming for "complete teaching implementation," teacher candidates independently undertake part of the teaching tasks for a specific class, completing the full process practice of "lesson preparation–teaching–reflection–improvement," achieving the integration and transfer of knowledge and skills. From the perspective of stakeholder structure, a tripartite collaborative mechanism involving "Universities–Schools–Government" (U-S-G) should be strengthened, clarifying the respective responsibilities of universities in theoretical guidance and curriculum development, schools in clinical guidance and environmental support, and the government in policy assurance and resource coordination, forming a governance pattern of shared responsibility and outcomes.

5.3 Curriculum Implementation Mechanism: Creating an Operational System for Deep "Theory-Practice" Integration

A trinity implementation mechanism, comprising synchronized implementation, collaborative guidance, and normalized reflection should be established to replace the linear "theory-first, practice-later" model, thereby ensuring sustained integration of theoretical and practical elements across the entire instructional process. In terms of synchronized implementation, coordination in both "time + content" dimensions should be achieved. A model combining "school-based residency" and "modularization" can be adopted, arranging for teacher candidates to engage in immersive practice in schools during fixed periods, while taking relevant theoretical courses at the university focused on practical issues during the remaining time.

For instance, offering topics like "Applied Educational Psychology Seminars" synchronously with issues like "classroom discipline management" (Du et al., 2024), prompting theory to truly become an analytical tool for practice. In terms of collaborative guidance, a collaborative guidance team of "university supervisor + school-based clinical mentor" should be built, with clear division of labor and articulation mechanisms. University supervisors are responsible for guiding theoretical reflection and enhancing academic depth; school-based mentors focus on teaching demonstration and immediate feedback; both form a guiding synergy through mechanisms such as case studies and joint meetings. In terms of normalized reflection, a "layered and embedded" reflection system should be established, comprising three distinct levels: at the immediate reflection level, educators complete a "teaching log" within one hour after each teaching session to document successful instructional segments and areas requiring improvement; at the stage-based reflection level, weekly "reflection seminars" are conducted to facilitate in-depth analysis of specific teaching strategies' effectiveness through examining teaching recordings and student feedback; and at the synthesized reflection level, monthly "practical reflection reports" are compiled to distill key insights from theory-practice integration, thereby elevating reflective practice from experiential summarization to theoretical conceptualization.

5.4 Curriculum Evaluation Orientation: Establishing a "Process-Oriented, Growth-Focused" Professional Evaluation System

Breaking through the traditional evaluation model centered on "quantitative scores and outcome attainment," a developmental evaluation system focusing on "practical knowledge construction and educational wisdom generation" should be built. In terms of evaluation philosophy, a developmental orientation should be adhered to, viewing evaluation as a continuous process supporting professional growth. Dimensions such as "teaching design implementation," "student learning support," and "educational reflection and innovation" should be established, with progressive levels like "initial imitation–proficient application–strategic innovation" set. A "professional growth portfolio" should be used to systematically record teacher candidates' practical outcomes (teaching videos, reflection reports, student work samples) (Li, 2018), dynamically presenting their growth process from "pre-service teacher" to "clinical practice-oriented teacher."

Regarding evaluation methods, a multi-evidence integration strategy should be implemented, comprehensively utilizing diverse data sources, including teaching videos, student work samples, in-depth reflection reports, and peer evaluations to holistically assess teacher candidates' evidence-based professional judgment in teaching optimization. In terms of evaluation participants, a mechanism for diversified engagement should be established, incorporating self-assessment by teacher candidates, evaluations from both university and school mentors, student feedback, and parental perspectives to form a collaborative evaluation community. Furthermore, regarding the application of evaluation results, the developmental function of assessment should be emphasized by transforming findings into actionable improvement recommendations and personalized growth pathways, thereby shifting the role of evaluation from a mere "management instrument" to a "developmental catalyst."

6. Research Limitations and Future Prospects

The tripartite analytical framework of "theoretical foundation – characteristics – pathways" constructed in this study clarifies the core logic of the clinical practice curriculum, providing a theoretical reference and practical guide for its localized development. However, constrained by the complexity and dynamism of teacher education reform, this study, as well as current explorations in this field, still exhibits significant limitations. First, the empirical support is one-dimensional, focusing on theoretical construction and international experience, while lacking large-sample investigations into the current implementation status of clinical practice curricula across different regions and educational stages in China. This fails to fully reveal the impact mechanisms of urban-rural disparities and subject-specific characteristics on curriculum implementation. Second, discussions on contextual adaptability are insufficient. There is a lack of theoretical explanation for emerging forms such as "virtual clinics" and "blended practice" within the context of digital transformation, failing to address the core proposition of deep integration between intelligent technology and the curriculum. Third, research on collaborative mechanisms remains superficial, staying at the framework level. Operational strategies for delineating rights and responsibilities, coordinating interests, and resolving conflicts within the "University-School-Government" triad are underexplored, and the quantitative indicators and tracking mechanisms of the evaluation system have not been refined.

Future research can break through in three aspects: First, strengthening empirical support by conducting cross-regional, cross-stage longitudinal studies, focusing on vulnerable areas such as rural teacher preparation, to build a localized effectiveness evaluation model for the clinical practice curriculum. Second, deepening research on digital empowerment by exploring the construction of "virtual-physical integrated" practice fields supported by artificial intelligence and virtual reality technologies, and analyzing mechanisms for data-driven clinical diagnosis and personalized guidance. Third, refining the collaboration and evaluation systems by clarifying the list of rights and responsibilities and operational rules for tripartite collaboration, developing a "competency progression-based" evaluation indicator system, and establishing a long-term tracking and assessment mechanism integrated with growth portfolios. This will provide operable practical solutions for the implementation of the clinical practice curriculum.

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