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Research on the Role of Teaching Reflection in the Professional Development of University Teachers

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Abstract: With the acceleration of global digitalization and the intensification of talent competition, higher education is showing a trend of connotative development. The professional development level of university teachers has become a key factor affecting the quality of talent cultivation. As the core mechanism for the professional development of university teachers, the value of teaching reflection is becoming increasingly prominent. This paper, through literature review and theoretical analysis, first clarifies the connotations of teaching reflection and university teachers' professional development, and then systematically analyzes the multi-dimensional effects of teaching reflection on university teachers' professional development based on the characteristics of higher education, and finally identifies practical challenges currently faced in reflective practice and proposes concrete pathways to promote deeper engagement in teaching reflection. The research results provide theoretical references and practical guidance for helping university teachers enhance their professional development levels and strengthen their ability in teaching reflection.

Keywords: Teaching Reflection; University Teachers; Professional Development

1. Introduction

Currently, higher education is moving toward connotative development (Ngetich & Bulolo, 2024). And continuous support and updates for teachers' professional development are the key to advancing the construction of the education system (Elov & Toshtemirova, 2024). Higher education institutions are academic, exploratory, and innovative by nature. These characteristics demand that teachers not only have solid disciplinary knowledge, but also the ability to dynamically adjust teaching strategies and respond to the individualized needs of students. However, traditional models of teacher professional development often focus more on knowledge transmission and skill training. They tend to overlook teachers' agency in reflective practice and the internal mechanisms that foster their continuous improvement. At the same time, some teachers have the tendency of valuing scientific research over teaching and experience over reflection, which leads to a disconnect between teaching practice and professional growth. As a result, the continuous enhancement of teaching competence is hindered, which in turn constrains the overall quality of higher education. Teaching reflection, which promotes continuous development of cognitive skills, sense of responsibility, and professional competence (Çimer et al., 2013), is widely recognized in academia as a powerful tool facilitating deep professional growth and capability building among educators. Therefore, in-depth exploration of the mechanism by which teaching reflection acts on the professional development of university teachers has important theoretical and practical significance. This study focuses on the core role of teaching reflection in the professional development of university teachers. It aims to uncover the underlying mechanisms through which reflection supports teacher growth, identify current challenges in reflective practice, and propose pathways for optimization. The findings are intended to provide theoretical insights and practical guidance for enhancing teaching effectiveness and promoting lifelong professional development among university instructors.

2. The connotation of teaching reflection and professional development of university teachers

2.1. The connotation of teaching reflection

In 1933, the American scholar John Dewey first introduced the concept of reflection into teaching and elaborated on the intrinsic relationship between reflection and the educational process in his work *How We Think*. Dewey first clarified that reflection is neither "aimless random thinking" nor "stream of consciousness" or "mental imagination of things not present"; nor is it equivalent to statements such as "I believe". He defined reflection as: active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends. He also argued that reflection is a form of thinking, referring to the repeated, serious, and persistent contemplation of problems in an individual's mind, and thus it is inadvisable to overly focus on teaching methods mechanically while neglecting reflection in teacher training (Dewey, 1933). Another key advocate of reflective teaching was the American educator and philosopher Donald Schön, who distinguished between "reflection-in-action" and "reflection-on-action". Schön emphasized the importance of reflection for professionals when facing complex situations and argued that reflection-in-action and practice complement each other—when an individual engages in reflection-in-action, he or she becomes a researcher within the practical context (Schön, 1983). Other scholars also attribute emancipatory or ethical significance to reflection. For instance, from an ethical perspective, Ross linked reflection to rationality and responsibility and described educational reflection as a way of thinking about educational issues, which involves the ability to make rational choices and take responsibility for those choices (Ross, 1987).

Although different scholars and researchers have varying definitions and interpretations of reflection, they consistently agree that fostering a reflective attitude and habit is highly beneficial for improving both practice and learning outcomes (Freese, 1999). Based on the above viewpoints, this study defines teaching reflection as a process in which teachers, aiming to achieve rationality in teaching practice, proactively review, analyze, and evaluate completed teaching practices and related elements through their own action research.

2.2. The connotation of university teachers' professional development

In the process of educational development across all countries, the continuous professional development of teachers stands as a crucial issue. This process is inherently characterized by the coexistence of socialization and individualization, with its core driving force derived from the essential requirements of national and social development for teachers' professional growth. This characteristic, combined with the core driving force, indicates that teachers can only respond to the rapidly evolving times by choosing an independent professional growth path while aligning with national and social demands. Meanwhile, the meaning of teacher professional development has taken on distinct characteristics in different periods, and scholars have emphasized various aspects of its definition based on diverse research contexts and perspectives. Desimone contends that teachers' professional development constitutes a series of purposeful and planned systematic activities, whose essence lies in enhancing classroom teaching practices by deepening teachers' professional knowledge and skills, and ultimately achieving the sustainable improvement of students' learning outcomes (Desimone, 2009). This definition emphasizes the necessity of establishing a clear causal chain from teacher learning to student development, moving beyond formalized training and placing educational effectiveness at the core of evaluation. Avalos argues that teachers' professional development is an ongoing process that involves continuous learning, experimentation, discussion, and reflection. It explores the connections and influences between the history and traditions of teacher groups, the educational needs of student populations, teachers' working conditions, and the learning opportunities available to them (Avalos, 2011). Darling-Hammond highlighted the effectiveness of professional development, noting that it is a structured form of professional learning that can facilitate the optimization of teachers' practices and the improvement of students' learning outcomes. Through a comprehensive review of literature from the past three decades and systematic coding of qualifying studies, they identified key elements of effective professional development models (Darling-Hammond et al., 2017).

In summary, the definitions of teachers' professional development in existing research primarily cover three dimensions: goals, processes, and mechanisms. Accordingly, this study conceptualizes the professional development of university teachers as a long-term process that spans the entire career of teachers. By integrating and systematically planning various types of opportunities and experiences, this process ultimately aims to promote the continuous development and refinement of teachers in terms of professional ideology, knowledge, and competencies.

3. Analysis of the Role of Teaching Reflection in the Professional Development of University Teachers

3.1. Update teaching concepts

Teaching philosophy is the soul of university teachers' professional development, and it profoundly influences the value orientation and practical direction of teaching behaviors. Teaching reflection helps university teachers develop correct and appropriate teaching philosophies, break the constraints of rigid thinking, achieve dynamic updates of educational ideas, and provide sustained cognitive impetus for their professional development. The traditional teaching model is dominated by a "knowledge-centered" approach, which reduces teaching to a process where teachers unilaterally impart knowledge points to students. As a result, students' subjectivity is suppressed. Teaching reflection can guide university teachers to break free from the constraints of empiricism in teaching concepts, examine teaching philosophies disseminated from the outside world with critical thinking, re-examine the relationship between "teaching" and "learning" to clarify students' dominant position, and combine the analysis of practical situations such as classroom interaction and student feedback, thereby developing their own teaching philosophies that are both scientific and personalized. Teaching reflection can also help university teachers keep up with the pace of the times, update their teaching philosophies in a timely manner, and transform cutting-edge educational theories into actionable teaching practices to respond to new changes in the field of education. In recent years, artificial intelligence (AI) has penetrated various fields and industries. In higher education, AI has become a key tool that completely transforms teaching methods and institutional operations. It not only fundamentally subverts the traditional knowledge-imparting teaching model but also provides important opportunities for improving educational quality, operational efficiency, and educational sustainability (Khan

et al., 2025). Through continuous reflection, university teachers can keenly perceive changes in disciplinary requirements, update their teaching philosophies, and break down new phenomena such as the integration of AI into education into specific teaching objectives, content, and methods. This reflection-based update of teaching philosophies ensures that university teachers' professional cognition always aligns with the development trends of education. It not only prevents university teachers from falling into the professional dilemma of "teaching new knowledge with outdated philosophies" but also lays a solid foundation for students to better adapt to the new employment environment and meet the needs of further study.

3.2. Enhance teaching ability

Teaching competence is a core component of university teachers' professional literacy and determines the effectiveness of teaching practice implementation. It is generally reflected in their performance in completing tasks such as instructional design, classroom management, and the collection, evaluation, and application of feedback during the teaching process. In instructional design, teaching reflection helps university teachers absorb diverse excellent experiences, reduce subjective assumptions, and develop personalized instructional design methods that are both evidence-based and aligned with their own teaching styles, thereby significantly improving both the efficiency of design and the feasibility of teaching plans. University classrooms are characterized by complexity, as students vary in cognitive levels and exhibit divergent thinking, requiring teachers to have the ability to dynamically adjust teaching pace. The improvement of such classroom management competence is inseparable from teaching reflection. By reflecting on and reviewing the process of each class, university teachers can gradually master management techniques such as listening, questioning, and leaving appropriate pauses, which in turn stimulates student participation and increases their focus during class. The professionalization of teaching evaluation is another direct outcome of teaching reflection. In traditional teaching evaluation systems, university teachers often rely on final exam scores to track students' learning progress. By reflecting on the limitations of such evaluation methods, teachers will proactively explore and establish diversified evaluation systems. These systems yield more diagnostic evaluation results, enabling teachers to transform the evaluation process into an educational opportunity that promotes student development. Additionally, teaching reflection fosters in teachers the professional habit of lifelong learning, laying a foundation for the sustainable enhancement of professional competence. When reflecting on themselves, university teachers will clearly recognize the limitations of their own knowledge structures, thereby proactively planning their learning paths. This motivates them to maintain openness to continuous growth and enrich their inner intellectual world throughout the learning process.

3.3. Promote the mutual transformation between teaching and research

Research is an indispensable component of university teachers' professional development, and together with teaching, it constitutes the two core tasks of university teachers. Against the backdrop of rising quality standards that early-career academics must meet, leveraging the complementary relationship between teaching and research has become increasingly crucial (Cenamor, 2022). Teaching reflection effectively bridges research and teaching, breaking the predicament of separation between teaching and research. It helps teachers achieve a positive cycle of conducting scientific research during teaching and then using research results to return the favor in teaching. Classroom questions, challenges, and contradictions are often deeply practical and contain rich academic issues worthy of deeper investigation. When college teachers collect such content during the teaching process, reflect on and study the parts that are contrary to or beyond their own cognition, and conduct research on the identified problems, it is possible for them to produce academic papers that are both theoretically profound and practically grounded. This realizes the transformation from teaching processes to research topics, ultimately enabling university teachers' scientific research to break through the limitation of isolated development and gain stronger practical application value. Meanwhile, teaching reflection can also promote the translation of research outcomes into teaching resources, keeping course content at the forefront of academic discourse. University teachers can use reflection to adapt specialized or technical research language into forms more accessible to students. This

transformation not only improves the quality of teaching but also amplifies the educational value of their scholarly work. In addition, teaching reflection can stimulate teachers' pedagogical academic capabilities, helping university teachers evolve into teaching researchers. Even if university teachers do not have a background in education, they can reflect on and systematize their scattered teaching experiences by persistently writing reflective journals, conducting action research, and developing teaching cases. This way, they can eventually extract universally applicable teaching theories. The results obtained from this process not only guide peers' teaching reforms but also become an important part of their own academic resumes.

3.4. Strengthening professional identity

Professional identity is the core driving force for university teachers' professional development and professional competence constitutes its essential substance. Teaching reflection enables instructors to examine the values and demands of their teaching practices, deepens their understanding of the educational mission and their own pedagogical capabilities, and thereby helps them build a solid professional identity and enhance their expertise. This process provides sustained momentum for their career growth. In recent years, the social status of teachers is constantly under challenge, which has led to a growing prevalence of professional burnout among university teachers. Teaching reflection serves as a vital means for educators to rediscover their passion for teaching. When university teachers feel exhausted due to repetitive teaching or confusion about the value of their profession, only through reflection and careful recall of the teaching process can they identify meaningful moments in daily teaching, which helps them recognize the unique value of teaching work and reconnect with their original aspiration for education. Teaching reflection can also enhance educators' professional competence, particularly in areas such as educational ethics and professional beliefs, which enable teachers to remain steadfast in their educational mission throughout their careers. The university classroom presents various ethical dilemmas, including how to balance academic freedom with value guidance, and how to equitably treat students from diverse backgrounds. These challenges can easily cloud a teacher's value judgment. Engaging in critical reflection on such ethical issues allows faculty to avoid these pitfalls, adhere to moral principles while pursuing academic and instructional excellence, and ultimately grow into educators who embody both professional expertise and humanistic care.

4. The actual problems existing in the teaching reflection of university teachers

4.1. Strengthening professional identity

Teaching reflection plays a significant role in the professional development of university teachers, yet it faces considerable challenges in effective practice. On one hand, some teachers lack awareness of reflection and subjective initiative, even perceiving teaching reflection as an additional workload. On the other hand, the outcomes of teaching reflection are difficult to quantify and inherently uncertain, requiring long-term observation, consistent documentation, and continuous adjustment. As a result, many university teachers struggle to gain a quick and in-depth understanding of the practical value of teaching reflection, leading them to prioritize scientific research, which they think can yield more direct benefits than teaching does. Meanwhile, some university teachers, despite having the awareness of teaching reflection, lack the proper methods to conduct it. Reflection is a public process that needs to be facilitated through focused and formal dialogue (Marshall et al., 2022). However, many university teachers exhibit a strong tendency toward individualization in their teaching reflection process, lacking communication with peers, experts, and students. This leads to a monotonous approach to reflection, ultimately confining their teaching reflection to a superficial level. Consequently, the outcomes of their teaching reflection are not significant, which severely undermines university teachers' motivation to engage in sustained reflection.

4.2. Strengthening professional identity

The promotion and popularization of teaching reflection rely heavily on the support of universities. However, currently, many universities lack sufficient driving force for teachers' teaching reflection, which is

mainly reflected in three aspects. First, universities mainly focus on academic research in discipline development and campus culture construction, while lacking recognition and advocacy for teaching reflection. They also rarely recognize teachers who make efforts and contributions to teaching reflection and improvement, resulting in a weak campus atmosphere for reflection. Second, universities often fail to provide adequate resources and time for teaching reflection. Some universities not only assign heavy teaching and research tasks to teachers but also impose additional pressures such as administrative work and social services. This makes it difficult for teachers to have large blocks of focused time and sufficient energy for in-depth reflection. Even when teachers manage to reflect briefly, they often lack the time and support needed to implement changes based on their insights (Naseem et al., 2023). Finally, although some universities require teachers to submit teaching reflection records and outcomes, they do not establish professional review teams to evaluate the depth and feasibility of reflection content, nor do they link reflection outcomes to teaching improvement projects or resource allocation. This leads to teaching reflection becoming a mere paperwork task. Additionally, some universities regard teaching management as procedural supervision, focusing their efforts on superficial work such as checking lesson plans and attendance, while turning a blind eye to the practical problems raised by teachers in their reflections. As a result, these problems remain unsolved.

5. Effective Methods for Enhancing College Teachers' Teaching Reflection

5.1. Promote the Institutionalization of Teaching Reflection

Institutional constraints serve as a strong and effective external strategy to encourage teaching reflection among teachers. As a platform for teachers' professional development, universities must establish and refine incentive mechanisms that incorporate teaching reflection outcomes into faculty evaluation systems, linking them to professional title assessments, while clearly defining assessment dimensions and weighting both the reflective process and its outcomes. Teachers who produce outstanding reflective reports, research papers, or develop innovative and highly effective teaching cases should be recognized and appropriately rewarded, thereby encouraging reflective practices through both intrinsic and extrinsic motivation. Conversely, corresponding measures should be taken to address those who demonstrate a perfunctory attitude or fail to meet established standards. Furthermore, universities should develop a systematic training and development framework for teaching reflection. This includes incorporating reflective training into induction programs for new faculty, allocating dedicated funding for teaching reflection research projects, and organizing regular reflection experience-sharing sessions and thematic seminars. These can not only strengthen teachers' reflective awareness but also foster mutual learning and exchange among educators, addressing teaching deficiencies and collectively cultivating a campus culture that values reflective practice. Simultaneously, when universities calculate the workload of teachers and arrange their schedules, they must set aside specific guaranteed time to ensure that teachers have sufficient time for teaching reflection. This prevents resistance to reflective practices arising from excessive workloads or time constraints.

5.2. Utilize multiple reflection tools

Diverse reflection tools are powerful weapons that support university teachers systematically and deeply reflecting on their teaching implementation behaviors, processes, and results. Universities have the responsibility and obligation to build various platforms for teachers by relying on big data and artificial intelligence, installing full-course video recording tools in classrooms, and promoting the use of classroom video analysis software and student learning behavior data analysis software. This provides teachers with objective and multi-dimensional data as a solid evidence base for reflection while effectively improving the efficiency of their post-mortem reflection. In addition, universities can engage in cross-school and cross-national cooperation, sharing resource information. Online, by collecting excellent teaching reflection cases, theoretical literature, and online classroom recordings from major domestic and foreign universities, the cooperating parties can jointly establish a high-quality resource library. Offline, teacher exchange programs can be organized. In this program, the cooperating institutions can send their teachers to the other

party's campus for a short-term exchange. During these visits, teachers can participate in reflective seminars, collaborative lesson planning, and post-class evaluation activities. Visiting teachers may gather first-hand reflective materials and bring them back to share within their home institutions. Such exchanges can not only break down geographical and institutional barriers but also foster the cross-pollination of diverse educational philosophies and reflective practices. This provides teachers with rich and accessible reference materials for professional development, ultimately amplifying the value of teaching reflection resources on a broader scale.

5.3. Enhance intrinsic force

The implementation of relevant policies and the adoption of innovative teaching reflection tools by universities serve only as external drivers. To truly enable teaching reflection to facilitate teachers' professional development, university teachers need to start from within, continuously enhance their reflection abilities and strengthen their recognition of the value of teaching reflection. Therefore, university teachers must not only overcome cognitive biases by understanding that the essence of teaching reflection lies in solving practical teaching problems rather than fulfilling superficial obligations but also internalize reflection as a habitual practice and develop a personalized logic of reflection. On one hand, university teachers can deepen their understanding of the connotation and role of teaching reflection through reading classic literature and participating in lectures and discussions at the theoretical level. On the other hand, university teachers can observe the actual and specific case effects around them, from the students' regular classroom participation to their final grades, to intuitively feel the improvement effect of teaching reflection on educational and teaching outcomes. Based on understanding and recognizing reflection, university teachers may carry out practice in a closed-loop thinking of "reflection - practice - reflection". For example, they might adjust teaching plans based on reflective insights, document the effects before and after adjustments, analyze the reasons behind differences in outcomes, and distill broader pedagogical principles. Through such practices, they can strengthen their reflective thinking and ultimately improve the quality and effectiveness of their teaching.

6. Conclusions

As the connotative development of higher education advances, the professional development level of university teachers has gradually become one of the core factors influencing educational quality. However, as Coppe et al. argue, the teaching profession is multidimensional, and its development path is not linear but rather complex and cyclical (Coppe et al., 2024). Teaching reflection serves as an intrinsic mechanism driving the professional growth of university teachers. It promotes real development by updating pedagogical philosophies, enhancing instructional skills, strengthening research capabilities, and reinforcing professional identity. Currently, due to issues such as teachers' underdeveloped awareness of reflection and narrow reflection methods, as well as the lack of supportive policies and insufficient resources provision in universities, the teaching reflection among university teachers remains limited in practice. This article proposes suggestions focusing on three aspects: institutional guarantees, diversified tools, and teachers' internal motivation. These measures aim to effectively foster a strong atmosphere of teaching reflection in universities, thereby helping university teachers continuously improve their professional level, break through capacity bottlenecks, and ultimately grow into outstanding teachers.

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Heng Gao: Conceptualization, Methodology, Data Collection, Formal Analysis, Investigation, Validation, Visualization, Writing - Original Draft, Writing - Review & Editing.

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CONFLICT OF INTEREST STATEMENT

The authors declare no competing interests.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

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