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Teacher Professional Development in Textbook Restructuring: A Qualitative Study of Two Secondary English Teachers' Lesson Iterations

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Abstract: ***The structural mismatch between textbook presumptions and students' actual learning conditions constitutes a common challenge in the implementation of new textbooks in basic education, and also serves as a significant context for teacher professional development. Drawing on the lesson iteration processes of two secondary school English teachers using the PEP new textbooks, and employing Clarke and Hollingsworth's Interconnected Model of Professional Growth, this study analyzes how teachers achieve professional growth through iterative cycles of "textbook comprehension–learner diagnosis–task restructuring–classroom validation–reflective adjustment," based on four types of data: lesson design documents, teaching-research activity records, teacher reflective journals, and interviews. The findings indicate that, first, teacher professional development is not a direct product of external training but is endogenously achieved through sustained cycles of "design–validation–reflection" in textbook restructuring practice; second, teachers' pedagogical content knowledge (PCK) is reactivated and reconstructed amid the tension between textbook presumptions and learning realities; third, teachers' professional identity shifts from "textbook implementer" to "learning designer"; and fourth, evidence-driven iteration mechanisms and the support of teaching-research communities are key conditions enabling teachers to transform teaching tasks into research problems. This study offers a new analytical framework and practical pathway for teacher professional development amid the challenges of textbook implementation.***

Keywords: Textbook restructuring, Teacher professional development, Pedagogical content knowledge, Lesson iteration, Low-entry-point adaptation.

1. Introduction

English education in the basic education system of western Guangdong has long faced a structural dilemma: a marked mismatch between textbook difficulty and students' actual learning conditions. Following the promulgation of the Senior High School English Curriculum Standards (2017 Edition, 2020 Revision) and the English Curriculum Standards for Compulsory Education (2022 Edition), the People's Education Press (PEP) senior high school English textbooks (2019 edition) and the new junior high school English textbooks (2024 edition) have exhibited notable increases in vocabulary density, text complexity, and task openness. The curriculum standards simultaneously call on teachers to make reasonable selections from and adjustments to textbook content in light of actual learning conditions, so as to use the textbook to teach rather than merely teach the textbook (Ministry of Education of the People's Republic of China, 2020; 2022). However, students in rural township secondary schools generally have weak foundations in English, and teachers have to confront the reality that the textbook cannot be fully covered while students cannot keep pace. As one teacher admitted, "The textbook is a good textbook, but our students simply cannot handle it." Trapped in this dilemma, a considerable proportion of teachers have resorted to teaching the textbook—proceeding lesson by lesson in the textbook's sequence to complete the prescribed teaching schedule—yet classroom efficiency is extremely low and students' actual gains are minimal. Existing research likewise indicates that the effective use of new textbooks depends heavily on teachers' capacity for holistic design and moderate adjustment based on learning conditions (Wang & Jiang, 2025).

The root of this dilemma lies not in teachers' lack of effort, but in their lack of the professional capacity to use the textbook to teach. A textbook is the material and starting point of instruction, not its entirety. Teachers need to reorganize, simplify, supplement, and adapt textbook content according to learning conditions, so that the textbook can be effectively aligned with students' actual proficiency. This study conceptualizes this process as textbook restructuring: the professional practice in which teachers, guided by curriculum standards and students' actual learning conditions, systematically reorganize and redesign the activity sequences, task structures, text difficulty, and assessment approaches of a textbook, thereby transforming it from a presupposed curriculum into an appropriate one. Textbook restructuring should be distinguished from localized textbook adaptation and from "secondary development" of textbooks in the general sense (Yu, 2005): it emphasizes the systematic reorganization of textbook structures and task chains rather than the addition or deletion of isolated content, and its essence is the concentrated embodiment of teachers' pedagogical design capacity.

Existing research on teacher professional development has largely focused on the influence of external training and teaching-research activities on teacher growth (Darling-Hammond et al., 2017; Wang & Gu, 2007), while paying relatively little attention to teachers' endogenous growth within textbook restructuring as an everyday instructional practice. The Interconnected Model of Professional Growth proposed by Clarke and Hollingsworth (2002) posits that teacher growth occurs through the ongoing interplay among four domains—the external domain, the

personal domain, the domain of practice, and the domain of consequence—with reflection and enactment serving as the mediating mechanisms connecting them. Textbook restructuring constitutes a significant site of precisely such interplay. Taking the lesson iteration processes of two secondary school English teachers as empirical material, this study examines how teachers achieve professional growth through sustained practice in textbook restructuring, addressing three research questions. First, what kind of professional growth process do teachers undergo in textbook restructuring, and what identifiable stage-like characteristics does it display? Second, what are the key mechanisms driving teachers' professional growth, and what is distinctive about textbook restructuring as a task-driven external stimulus? Third, how does textbook restructuring promote the transformation of teachers' professional identity, and what implications does this hold for the theory and practice of teacher professional development?

2. Literature Review and Theoretical Framework

2.1 The Paradigm Shift in Teacher Professional Development Research and the Contributions and Limitations of the Interconnected Model

Research on teacher professional development has undergone a shift from a training paradigm to a practice paradigm. Early studies centered on training, focusing on how knowledge and skills could be transmitted to teachers through external intervention. In their systematic review of the characteristics of effective teacher professional development, Darling-Hammond et al. (2017) found that the most effective professional development is not one-off training but sustained reflection and improvement embedded in daily instructional practice. Desimone (2009) further distilled the core features of effective teacher professional development into five components—content focus, active learning, coherence, sustained duration, and collective participation—all of which point to the deep integration of teacher learning with everyday instructional practice. These findings propelled the paradigm shift: teacher professional development is no longer regarded as the product of external input, but as endogenous growth achieved by teachers through practice, reflection, and dialogue in authentic instructional contexts. The action education paradigm in China similarly emphasizes teachers' on-the-job learning supported by lesson cases, professional guidance, and peer collaboration (Wang & Gu, 2007).

The Interconnected Model of Professional Growth (Clarke & Hollingsworth, 2002) is a landmark achievement of this paradigm shift. The model identifies four domains—the external domain (external information, stimuli, and support), the personal domain (teachers' knowledge, beliefs, and attitudes), the domain of practice (instructional experimentation and classroom practice), and the domain of consequence (salient student outcomes as perceived by teachers)—together with two mediating mechanisms that connect them: reflection and enactment. The model breaks the linear assumption that training directly leads to growth, emphasizing instead that teacher growth is a non-linear, cyclical process in which external stimuli, mediated by personal beliefs, generate consequences in practice, which in turn act back upon personal beliefs. This model provides the core analytical framework for the present study: textbook restructuring is precisely the critical link connecting the personal domain (teachers' understanding of textbooks and learning conditions) with the domain of practice (redesigned instruction).

Nevertheless, the Interconnected Model leaves two issues worthy of further exploration. First, its definition of external stimuli is relatively broad, encompassing formal training as well as policy changes, teaching-research activities, and peer communication, yet it does not adequately explain how external stimuli of different natures influence teacher growth in different ways. How does the mechanism of textbook restructuring as a task-driven stimulus differ from that of training-based stimuli? Second, although the model emphasizes reflection as the core mechanism connecting the domains, it does not fully explain the conditions under which reflection occurs or the process through which it unfolds. Schön (1983) distinguished reflection-in-action from reflection-on-action, suggesting that reflection does not occur automatically but requires particular problem situations and professional dispositions. When teachers confront the same textbook-related difficulties, why are some able to achieve professional growth while others remain trapped in repetitive labor? This question calls for more in-depth empirical investigation.

2.2 The Composition and Developmental Mechanisms of Pedagogical Content Knowledge

Pedagogical content knowledge (PCK), proposed by Shulman (1986), constitutes the core knowledge base of teachers' professional expertise. PCK refers to the knowledge through which teachers transform subject matter into forms comprehensible to students, encompassing knowledge of students' understanding, knowledge of instructional strategies and representations, and knowledge of curriculum materials. Textbook restructuring is a direct manifestation of PCK: teachers must judge which textbook content is appropriate for students, which requires adjustment, and how it should be adjusted to enable understanding.

Shulman's theory of PCK, however, attends more to the composition of PCK than to its developmental mechanisms. Subsequent research has advanced this issue. Through a multi-case study, Park and Oliver (2008) found that PCK develops through reflection-in-action and reflection-on-action in concrete instructional contexts, with students' responses and misunderstandings playing a critical role in shaping it. Van Driel and Berry (2012) likewise argued that professional development focusing on PCK must enable teachers to test and revise their knowledge in authentic instructional experiments. This line of research suggests that teachers' PCK is not a static stock of knowledge but is dynamically generated in the process of solving concrete instructional problems. Building on this insight, the present study proposes that textbook restructuring constitutes a key context for the activation and reconstruction of PCK: when a structural mismatch arises between textbook presumptions and learning realities, teachers are compelled to reconsider what content

suits their students, how it should be presented to be comprehensible, and how tasks should be designed to enable participation. These questions force teachers to mobilize multiple bodies of knowledge and, in so doing, to form new PCK.

This understanding enters into dialogue with the theory of secondary development of textbooks proposed by Yu (2005). Yu defines secondary development as "a process in which teachers and students, in the course of curriculum implementation and on the basis of curriculum standards, moderately add to, delete from, adjust, and process textbook content so that it better fits specific educational and instructional contexts and students' learning needs," and in subsequent work explicitly argues that teachers should shift from consumers to developers of textbooks in this process (Yu, 2010). This theory foregrounds the teacher's role as textbook developer, but it unfolds primarily from the perspective of curriculum implementation and does not adequately reveal the reciprocal effect of secondary development on teachers' own professional growth. The advance of the present study lies in treating textbook restructuring not merely as a strategy of curriculum implementation, but as a context of teacher learning.

2.3 Orientation Models in Textbook Use Research and the Participatory Turn

In the field of curriculum implementation research, Snyder, Bolin, and Zumwalt (1992) systematically articulated three implementation orientations: the fidelity orientation, which construes implementation as the faithful execution of a prescribed plan with teachers as transmitters of the curriculum; the mutual adaptation orientation, which acknowledges bidirectional adjustment between the curriculum proposal and the school context; and the enactment orientation, which construes the curriculum as experience jointly enacted by teachers and students in the classroom, with teachers as curriculum makers. In foreign language education, Shawer (2010), drawing on empirical research with EFL teachers, proposed a closely corresponding classification of teachers' curriculum behavior—curriculum-transmitters, curriculum-developers, and curriculum-makers—and demonstrated that the orientation a teacher adopts directly affects the enacted curriculum, the teacher's own development, and the quality of student learning. Low-entry-point adaptive instruction requires teachers to move from fidelity toward mutual adaptation and even enactment; this transition places higher demands on teachers' PCK and simultaneously affords a practical pathway for professional development.

Research on textbook use has further undergone a participatory turn, shifting from describing use behaviors to theorizing the teacher–curriculum relationship. Remillard (2005) conceptualized the relationship between teachers and curriculum materials as participatory: teachers are not passive users of textbooks but participate in them with their own knowledge, beliefs, and experience, jointly shaping the enacted curriculum. Brown (2009) further introduced the notion of pedagogical design capacity, classifying teachers' decision-making in materials use as offloading, adapting, and improvising, and emphasizing that teaching is designing. This research trajectory indicates that changes in how textbooks are used are in essence changes in teachers' professional capacity and professional identity. However, this literature has unfolded primarily from the perspective of textbook use, addressing how teachers use textbooks rather than how textbook use changes teachers. The present study approaches the issue from the perspective of teacher development, analyzing the reciprocal effect of textbook restructuring on teachers' professional growth. This shift of perspective is what distinguishes the present study from existing research on textbook use.

2.4 Positioning of the Present Study

In sum, existing research provides an important theoretical foundation for this study, yet it also leaves space for further inquiry: teacher professional development research has rarely examined the distinctive mechanisms of task-driven external stimuli; research on PCK requires further specification of its developmental mechanisms in particular disciplines and practical contexts; and textbook use research has paid limited attention to the reverse shaping of teachers by textbook use. Taking the lesson iterations of two secondary school English teachers working with new textbooks as the unit of analysis, this study situates textbook restructuring within a theoretical perspective of teacher learning and conducts its analysis around the three research questions articulated above.

3. Methodology

3.1 Research Design

This study adopts a multiple-case qualitative research design, taking the lesson iteration processes of two secondary school English teachers as the unit of analysis. The qualitative approach was chosen for two reasons. First, the study addresses a process-oriented question—how teachers achieve professional growth in textbook restructuring—which requires in-depth understanding of teachers' design intentions, grounds for judgment, and reflective processes. Second, textbook restructuring is a complex practice situated in concrete instructional contexts and cannot be adequately captured by standardized measurement instruments. Lesson iteration, as a traceable practical trajectory, externalizes teachers' professional judgment in each successive draft of a lesson design, thereby providing reliable process-based evidence for examining professional growth.

3.2 Participants

The participants are two secondary school English teachers involved in the project "A Theme-Oriented Low-Entry-Point Adaptive English Classroom Instruction Model" (pseudonyms are used in accordance with research ethics): Teacher He, a junior high school English teacher at an urban secondary school in western Guangdong with 21 years of teaching experience, and Teacher Wei, a senior high school English teacher at a township secondary school with 18 years of teaching experience. Over the course of the project, both teachers completed iterative designs of multiple lessons, as summarized in Table 1.

Table 1: Overview of the Two Teachers' Lesson Iterations

Teacher	Level	Lesson	Lesson type	Iteration drafts	Focus of iteration
Teacher He	Junior high (Grade 7)	Unit 3 Keep Fit	Listening and speaking	Draft 1 (June 23, 2026); Draft 2 (June 25, 2026); Draft 3 (June 28, 2026)	Activity resequencing: adjusting the order of listening tasks and lowering the information threshold
Teacher He	Junior high (Grade 7)	Unit 1 Happy Holiday	Reading and writing	Draft 1 (August 20, 2026); Draft 2 (August 27, 2026); Draft 3 (August 31, 2026); Draft 4 (September 8, 2026); Draft 5 (September 9, 2026)	Task differentiation: from a uniform task to a three-tier task chain
Teacher Wei	Senior high (Compulsory Book 3)	Unit 1 Festivals and Celebrations	Reading and writing	Draft 1 (August 31, 2026); Draft 2 (September 4, 2026); Draft 3 (September 6, 2026); Draft 4 (September 12, 2026)	Assessment embedding: process-oriented integration of self-assessment scales and peer-review checklists
Teacher Wei	Senior high (Compulsory Book 3)	Unit 3 Diverse Cultures; Unit 4 Space Exploration	Lesson commentary (reading and writing)	Draft 1 (September 13, 2026); Draft 2 (September 15, 2026)	Lesson commentary: externalizing low-entry-point adaptation strategies into professional discourse

Table 2: Data Sources and Analytical Purposes

Data type	Quantity	Analytical purpose
Lesson design documents	All drafts of 4 lessons	Tracing the evolution of design intentions and task structures
Teaching-research activity records	Transcripts of 5 activities (June 27, July 6, August 29, September 11, and September 23, 2026)	Capturing the grounds for judgment in peer review and professional dialogue
Teacher reflective journals	10 entries (5 from each teacher), written in response to the 5 teaching-research activities ("Low-entry-point instructional design based on academic diagnosis and textbook analysis," "Theme-oriented low-entry-point lesson design refinement and AI-assisted instructional optimization," "Theme corpus and differentiated output task optimization," "Deepening theoretical understanding of the theme-oriented low-entry-point adaptive classroom instruction model and enhancing classroom implementation capacity," and "Practical observation and validation of theme-oriented low-entry-point adaptive English classroom instruction")	Extracting teachers' self-explanations of key decisions
Semi-structured interviews	5 interviews with the two teachers (approximately 30–60 minutes each)	Retracing critical incidents and verifying the researcher's interpretations

The two teachers were selected on three criteria: first, their lesson iteration processes were complete, with clearly identifiable initial drafts, revised drafts, and final drafts; second, their lesson designs addressed the core problem of low-entry-point adaptive instruction—enabling genuine learning through task simplification, scaffolding, and differentiated design when students' starting proficiency falls markedly below the textbook's presupposed starting point—and were therefore typical of the phenomenon under study; third, they produced rich reflective records and commentary during teaching-research activities, providing ample material for analyzing professional growth.

3.3 Data Collection

The study lasted five months (May to September 2026). Four types of data were collected (see Table 2): first, lesson design documents, including initial, revised, and final drafts, with the analysis focusing on changes in design rationale, task design, differentiated scaffolding, and assessment approaches; second, records of teaching-research activities, including the two teachers' statements, commentaries, and discussions at these activities; third, teacher reflective journals, comprising the two teachers' reflections on their lesson design processes and on their own instructional practice; and fourth, semi-structured interviews conducted by the researcher with the two teachers, organized around such themes as key decisions in textbook restructuring and critical incidents in professional growth.

3.4 Data Analysis

Thematic analysis was conducted in three steps: open coding, which marked key changes across lesson iterations and critical incidents of professional growth; axial coding, which grouped the codes into themes such as textbook comprehension, learner diagnosis, task restructuring, assessment adjustment, and professional cognition; and selective coding, which distilled core categories such as the shift from textbook implementation to learning design, the activation and reconstruction of PCK, and the evidence-driven iteration mechanism. To ensure coding reliability, the researcher and a peer expert not involved in the preliminary analysis independently coded all the data, and inter-coder agreement was assessed using Cohen's Kappa. The Kappa coefficient for the initial coding was 0.82, exceeding the conventional 0.80 threshold for strong inter-coder agreement; codes on which the two coders disagreed were discussed one by one and category definitions were revised through consultation until consensus was reached. The credibility of the findings was further enhanced through triangulation across the four data types and member checking, in which the analytical conclusions were fed back to the two teachers for confirmation of their plausibility.

It should be noted that although teaching-research activity records and teacher reflective journals often corroborated each other in the analysis, the two data types differ fundamentally in their contexts of production: the former are public expressions made in the presence of others and are inevitably shaped by the professional norms and role expectations of the teaching-research setting, whereas the latter are private, individualized reflections closer to teachers' genuine perplexities and inner dialogue. Accordingly, the two data types were coded separately by source rather than being merged indiscriminately. When inconsistencies arose between them—for instance, when public statements diverged from self-assessments in private reflections—no simple reconciliation was imposed; instead, the discrepancy was treated as a valuable analytical clue and pursued further

through interview data, since the tension between public and private discourse may itself reveal aspects of teachers' professional growth that have not yet been articulated.

3.5 Research Ethics and Researcher Positionality

Informed consent was obtained from both teachers prior to data collection, and their names and schools have been anonymized for publication. It should be disclosed that the researcher is also a participant in the low-entry-point adaptive instruction project and maintains a collaborative teaching-research relationship with the participants. During the lesson iteration process, the researcher took part in project activities in the capacity of a commentary participant, interacting with the two teachers approximately once for each of the 14 drafts; the researcher did not directly intervene in the teachers' lesson design decisions, and any opinions were expressed solely through the public commentary channel of the teaching-research activities. This insider position enabled the researcher to understand the concrete context of lesson iteration in depth, but it also carried the risk of interpretive presupposition. To address this, the researcher maintained reflexive memos throughout the analysis and took particular care to distinguish the teachers' professional growth from the researcher's own professional judgment: all claims about growth were grounded in the teachers' design documents, reflective journals, or interview accounts, with the researcher's field observations serving only as corroboration, and the researcher's theoretical interpretations were constrained through member checking.

4. Findings

4.1 Three Practical Modes of Textbook Restructuring

The lesson iteration processes of the two teachers exhibited three modes of textbook restructuring: activity resequencing, task differentiation, and assessment embedding.

Activity resequencing. In the listening and speaking lesson of Unit 3 Keep Fit (Grade 7, Book 2), Teacher He systematically resequenced the textbook activities. The original order of listening activities was "1b listening for complete question-and-answer exchanges followed by 1c listening for table completion," but she found that "1b is information-dense, and struggling students tend to give up as soon as they fail to follow." She moved the 1c table-completion task forward, so that students needed only to capture two pieces of information—the name and the sport—which substantially lowered the entry threshold. The two listening segments thus formed a progression from capturing fragmented information to comprehending complete exchanges, matching the cognitive pace of low-entry-point students. As she wrote in her design notes, "There is nothing wrong with the textbook activities themselves; the problem is that the sequence does not suit our students. Adjusting the order is not lowering expectations—it is allowing learning to actually happen."

Task differentiation. Across the third-to-fifth-draft iterations of the reading and writing lesson of Unit 1 Happy Holiday (Grade 7, Book 2), Teacher He progressively refined a differentiated task design. In the third draft, she designed a five-element, three-sentence imitation writing task that required all students to complete the same assignment. In classroom implementation, however, students with weak foundations were unable to complete the three-sentence imitation independently, while more advanced students found it insufficiently challenging. In the fifth draft, she restructured the task into three tiers: "basic level: complete a fill-in-the-blank template; intermediate level: complete the three-sentence imitation; advanced level: add details to enrich the content." This adjustment is highly consistent with the principle of differentiated instruction that multiple pathways toward the same learning goal should be provided according to students' readiness (Tomlinson, 2017). She reflected, "Differentiation is not teaching students separately; it is giving every child a place within the same task." This adjustment exemplifies her professional growth from designing uniform tasks to designing differentiated tasks.

Assessment embedding. In the reading and writing lesson of Unit 1 (Compulsory Book 3), Teacher Wei embedded assessment into the writing process. While designing the differentiated output task, she simultaneously developed a self-assessment scale and a peer-review checklist, so that students knew in advance what counted as good performance and could assess themselves and each other against these criteria after writing. She thereby transformed assessment from a terminal judgment into process-oriented support, making assessment part of learning. This design exemplifies her professional growth from teaching writing to teaching students to learn to write.

4.2 Stage Characteristics of PCK Activation and Reconstruction

The reconstruction of the two teachers' PCK proceeded through three stages: from textbook logic to learner logic, from uniform design to differentiated design, and from a focus on teaching to a focus on learning.

From textbook logic to learner logic. In her initial draft, Teacher He organized instruction according to the textbook's activity sequence, taking the completion of textbook tasks as the goal. In classroom implementation, however, struggling students were entirely unable to keep up in the listening phase, rendering subsequent tasks unworkable. She reflected, "I used to think students failed to understand because their vocabulary was insufficient; later I realized it was because the task design gave them no accessible entry point." This realization prompted her to reexamine the difficulty gradient of the textbook activities and to place learner logic above textbook logic. The landmark event of this shift occurred in her second lesson design, in which she took the initiative to adjust the listening task from comprehending complete dialogues to capturing key information.

From uniform design to differentiated design. In the third draft of the Happy Holiday reading and writing lesson, Teacher He prescribed uniform task requirements. Classroom observation revealed low completion rates among basic-level students, some of whom gave up when unable to finish. She reflected during a teaching-research activity, "When I designed the task, I assumed that students should be able to complete it; in reality, only some of them could." This realization drove her to introduce differentiated design in the

fifth draft, decomposing the task into basic, intermediate, and advanced tiers. Teacher Wei offered a further suggestion in her commentary: "Differentiated tasks should take into account not only difficulty but also students' strengths and weaknesses. Basic-level students can serve as picture pointers, intermediate-level students as checkers, and top students as reporters—so that every student has something to do."

From a focus on teaching to a focus on learning. Over the course of the iterations, both teachers gradually shifted their attention from how the teacher teaches to how students learn. In her lesson commentaries, Teacher Wei repeatedly emphasized three questions: "Have the struggling learners been engaged? Have the average students spoken up? Have the top students been sufficiently challenged?" These three questions became her core criteria for evaluating the quality of a lesson design. Teacher He wrote in her reflection, "I used to focus on whether I had explained things clearly; now I focus on whether students have actually learned." This shift represents a deep change in teachers' professional cognition—from a teaching perspective to a learning perspective. It should be noted that the three stages are not linear replacements of one another but cumulative cognitive reconstructions: sensitivity to learning conditions is the precondition for restructuring the textbook, differentiated design is the operationalization of learner logic in task structure, and the focus on learning is the final sedimentation of the first two in the criteria for evaluating instruction.

4.3 Professional Identity Transformation from Textbook Implementer to Learning Designer

Over the course of lesson iteration, both teachers underwent an identity transformation from textbook implementer to learning designer, manifested at three interrelated levels: their view of textbooks, their view of design, and their view of assessment.

Transformation of the view of textbooks. In her initial draft, Teacher He treated the textbook as content that must be completed, and her instructional goal was to finish the textbook. Over the iterations, however, she gradually came to recognize that the textbook is merely material, while students are the purpose. She shared at a teaching-research activity, "The outline, vocabulary, sentence patterns, themes, and language frameworks given in the textbook can be retained, but the specific content can be adjusted. If I taught entirely by the book, the classroom would be dull and overly difficult, and students would perceive no value in learning." This departure from the fidelity orientation enabled her to handle the textbook with greater flexibility, treating it as the starting point rather than the endpoint of instruction.

Transformation of the view of design. In her initial draft, Teacher Wei took the completion of instructional procedures as her design goal. Through the iterations, she gradually developed a seven-step lesson-planning pathway: diagnosing the starting point, simplifying the text, defining objectives backward, building scaffolding, designing small-step activities, planning differentiated output, and embedding assessment. The core of this pathway is designing instruction from learning conditions rather than arranging activities from the textbook. In commenting on other lessons, she repeatedly stressed the necessity of text simplification: "A simplified text designed specifically for struggling learners—breaking complex compound sentences into independent simple sentences, replacing uncommon words with basic high-frequency words, and providing sentence-by-sentence Chinese translations—radically lowers the reading threshold at the level of linguistic form, so that even students with weak foundations can understand it."

Transformation of the view of assessment. In her initial draft, Teacher He treated assessment as a test administered after instruction. Over the iterations, she progressively embedded assessment into the instructional process: providing scoring criteria before a task began, recording student performance through observation during the task, and guiding students in self- and peer assessment afterward. She reflected, "Assessment is not for proving but for improving. Every student should know where they are now and in which direction to go next." The systematic transformation of these three views indicates that the effect of textbook restructuring on teachers goes beyond instructional technique, touching their fundamental understanding of what teaching is.

The logical relationship between this subsection and the preceding one warrants clarification: the three stages of PCK reconstruction and the three levels of identity transformation are not two sequential processes but two facets of the same growth process. PCK reconstruction is a cognitive change, answering the question of what teachers have come to know; identity transformation is a reconstruction of meaning, answering the question of how teachers have come to understand who they are. The two support each other and unfold in synchrony. On the one hand, the accumulation of PCK provides the competence base for identity transformation: it is precisely because teachers gradually mastered concrete strategies such as activity resequencing, task differentiation, and assessment embedding that the learning designer ceased to be a slogan and became a role they could actually assume. On the other hand, the new identity in turn motivated teachers to diagnose learning conditions and restructure textbooks more proactively, driving the further development of PCK. Cognitive reconstruction and identity reconstruction thus reinforce each other within the cycle of lesson iteration, together constituting the full picture of teachers' professional growth.

4.4 The Evidence-Driven Iteration Mechanism and the Support of the Teaching-Research Community

The professional growth of the two teachers was not an isolated individual event but a sustained process advancing through cycles of design, validation, reflection, and redesign, driven by student evidence and supported by the community.

Student evidence as the driver of iteration. Every design adjustment made by the two teachers originated from an evidence-based reading of students' classroom performance rather than from a vague sense that things were not working well. Teacher He's resequencing of the listening tasks, for instance, began with the concrete classroom observation that struggling students gave up when they could not follow; the introduction of differentiated tasks began with the empirical record of low completion rates among basic-level students.

Student evidence bridged the domain of consequence and the personal domain in the Interconnected Model: it was the evidence-based reading of outcomes that triggered teachers' questioning and revision of prior assumptions in the personal domain (such as the assumption that students failed to understand because of insufficient vocabulary).

The teaching-research community as the supporting structure of iteration. The two teachers' growth was embedded in the project's teaching-research community. Teacher He's lessons were commented on by peers and experts over multiple rounds of teaching-research activities, and Teacher Wei's suggestion of the pointer–checker–reporter role division directly entered the differentiated design of Teacher He's subsequent lessons. Teacher Wei herself, in the course of commenting on others' lessons, externalized her low-entry-point adaptation experience into transferable professional discourse (such as the seven-step lesson-planning pathway). Commenting on others' lessons became an opportunity for Teacher Wei to clarify her own design logic, while being commented on became an opportunity for Teacher He to acquire alternative perspectives. The community thus performed a dual function: it provided cognitive resources (others' experience and judgment) as well as emotional and institutional support (a teaching-research culture that permits trial and error and encourages iteration). This finding helps explain why, facing the same textbook-related difficulties, teachers who participated in iterative teaching research achieved professional growth, whereas teachers coping in isolation were more prone to repetitive labor.

5. Discussion

Before entering the detailed discussion, the division of labor between Section 4 and this section should be made explicit: Section 4 presents what the teachers did and what changed, constituting description at the empirical level, whereas the present section addresses what these practices and changes mean, constituting interpretation at the theoretical level. The following discussion engages, in turn, with research on teacher change, research on PCK development, and research on curriculum implementation orientations, corresponding to the three research questions.

5.1 Textbook Restructuring as an Endogenous Pathway of Teacher Professional Development: In Dialogue with the Interconnected Model and Research on Teacher Change

The core finding of this study is that teacher professional development is not a direct product of external training but is gradually realized through sustained practice in textbook restructuring. This finding is highly consistent with the Interconnected Model of Professional Growth (Clarke & Hollingsworth, 2002): stimuli in the external domain (teaching-research activities, expert guidance) are mediated by the personal domain (teachers' understanding of textbooks and learning conditions), generate action in the domain of practice (textbook restructuring designs), and the evidence from the domain of consequence (student performance) feeds back into the personal domain, triggering new rounds of reflection and adjustment. The continuous operation of this cycle is precisely the endogenous mechanism of teacher professional development.

Beyond this, the present study reveals the distinctive mechanism through which task-driven external stimuli differ from training-based stimuli. Training-based stimuli are characterized by learning before use: teachers first receive training and then attempt to apply what they have learned to practice, a sequence whose limitation lies in the possible mismatch between training content and teachers' immediate instructional problems, resulting in a disjunction between learning and application. Task-driven stimuli are characterized by learning in the service of immediate use: when confronting authentic textbook restructuring tasks, teachers actively seek out and apply the knowledge they need, and their learning is problem-driven, highly situated, and immediate. A comparison with the five features of effective professional development identified by Desimone (2009) shows that textbook restructuring naturally satisfies four of them: content focus (centering on specific subject matter and how students learn it), active learning (teachers personally experience design, implementation, and improvement), coherence (direct alignment with curriculum policy, teacher beliefs, and student needs), and sustained duration (multiple iterations running throughout instruction), while the teaching-research community supplies the remaining feature of collective participation. This explains, to a considerable extent, the effectiveness of textbook restructuring as a pathway of professional development: in her lesson iterations, Teacher He repeatedly asked how struggling students could be enabled to understand and how every student could be given something to do, and these questions drove her to learn theories of differentiated instruction, strategies of differentiated teaching, and approaches to assessment design on her own initiative, testing and adjusting them in practice.

This finding also responds to the question of why, given the same textbook-related difficulties, some teachers grow while others remain trapped in repetitive labor. Guskey's (2002) research on the sequence of teacher change indicates that changes in teachers' beliefs typically occur after changes in instructional practice and the observation of improved student outcomes, not before. The case trajectories in this study provide concrete corroboration of this sequence: at the initial-draft stage, Teacher He did not first embrace the concept of differentiated instruction and then change her design; rather, she acted first under task pressure — resequencing the listening tasks and introducing differentiated tasks—and only after observing student outcomes such as struggling learners being able to follow and improved completion rates among basic-level students did the new belief that the textbook is merely material while students are the purpose become genuinely established. In other words, task-driven stimuli may accelerate the change sequence Guskey described: teachers need not wait for training to change their beliefs but act first under task pressure, and the student outcomes produced by that action in turn reshape their beliefs. The findings of this study go one step further: whether this sequence can be initiated at all hinges on whether teachers transform a teaching task into a research problem. When teachers approach textbook restructuring with a task-completion mindset, restructuring is labor—evidence from the domain of consequence is ignored or attributed to students, and the cycle never starts. When teachers approach it

with a problem-inquiry mindset, restructuring becomes learning: evidence-driven reflection occurs, and the interconnected cycle among the domains keeps operating.

5.2 The Activation and Reconstruction of PCK Amid the Tension Between Textbook Presumptions and Learning Realities: In Dialogue with PCK Development Research

This study finds that teachers' PCK is not a static stock of knowledge but is activated and reconstructed amid the tension between textbook presumptions and learning realities. This finding corroborates the conclusions of Park and Oliver (2008): PCK develops through reflection-in-action and reflection-on-action in concrete instructional contexts, and students' responses are a key force shaping it. In the present study, it was precisely the classroom responses of struggling students—giving up when they could not follow and giving up when they could not complete a task—that forced teachers to reexamine their prior assumptions about student understanding and to reconstruct their knowledge of task design and scaffolding.

The contribution of this study lies in specifying the concrete links in the activation and reconstruction of PCK: first, identifying the tension—teachers detect the gap between textbook presumptions and learning realities, a detection that depends on sensitivity to student evidence; second, mobilizing knowledge—teachers draw on their existing knowledge of student understanding, instructional strategies, and curriculum materials to form preliminary restructuring plans; and third, forming new knowledge—through repeated trial, error, and adjustment, teachers develop new PCK in the form of situated professional judgments, such as advancing the table-completion listening task to lower the information threshold, differentiating within a single task rather than separating students into groups, and front-loading assessment to provide process-oriented support. This finding recasts PCK from a static stock of knowledge into a dynamic practical capacity, and it confirms Van Driel and Berry's (2012) contention that professional development focusing on PCK must be grounded in teachers' instructional experiments. For foreign language teacher education, this implies that the cultivation of PCK should not remain at the level of knowledge transmission; rather, practice-based contexts should be created in which teachers are compelled to think amid genuine textbook-related difficulties.

5.3 From Textbook Implementer to Learning Designer: In Dialogue with Curriculum Implementation Orientations and Teacher Agency Research

This study finds that textbook restructuring propels teachers from the role of textbook implementer to that of learning designer. The essence of this transformation is a repositioning of professional identity: the teacher is no longer a transmitter of the textbook but a designer of learning, and instruction is no longer the completion of the textbook but the service of learning.

Situating this finding within the research tradition of curriculum implementation orientations yields a clearer theoretical positioning. In terms of the tripartite framework of Snyder et al. (1992), the two teachers' trajectories are precisely a movement from the fidelity orientation through mutual adaptation toward the enactment orientation. Shawer's (2010) classification of EFL teachers further indicates that this transformation is not an idiosyncratic choice of individual teachers but an identifiable type shift in foreign language teachers' curriculum behavior, and that such a shift simultaneously entails improvements in teacher development and student learning. Remillard's (2005) participatory relationship further explains the internal mechanism of the transformation: when teachers participate in the textbook with their own knowledge of learning conditions, the textbook is converted from an external authority into a design resource, and the teacher–textbook relationship changes from compliance to collaboration. The seven-step lesson-planning pathway developed by the two teachers is an externalized marker of growth in pedagogical design capacity in Brown's (2009) sense—they have become capable of systematically perceiving, mobilizing, and reorganizing textbook resources in the service of designing student learning. In this respect, the present study extends textbook use research from how teachers use textbooks to how textbook use changes teachers: the ascent in levels of textbook use and the transformation of professional identity are two facets of the same process.

At the same time, the findings invite a reconsideration of the relationship between the fidelity and adaptation orientations. Teacher He stated explicitly in a teaching-research sharing session that the outline, vocabulary, sentence patterns, themes, and language frameworks given in the textbook can be retained while the specific content can be adjusted. This indicates that the two orientations are not mutually exclusive but can coexist within the same teacher: selective fidelity toward the linguistic knowledge framework combined with adaptation of task chains and activity sequences. In other words, the orientation categories of Snyder et al. (1992) are better understood as a repertoire of strategies that can be differentially combined across curriculum elements, rather than as mutually exclusive labels for teacher types; a mature learning designer is precisely one who can flexibly deploy different orientations according to the nature of different curriculum elements.

From the perspective of teacher agency, the identity transformation described above can further be understood as the activation of teacher agency. The ecological approach of Priestley, Biesta, and Robinson (2015) holds that teacher agency is not a personal trait but an ecological achievement attained through the interplay of three dimensions: the iterational (past experience), the projective (future orientation), and the practical-evaluative (present situation). The findings of this study fit this framework closely: the task pressure of textbook implementation difficulties constitutes a structural challenge in the present situation; teachers' professional aspiration to make learning genuinely happen provides the traction of future orientation; and the cultural and relational resources supplied by the teaching-research community are the key supporting conditions under which agency is achieved. This suggests that the activation of teacher agency in textbook restructuring is neither the result of purely external task-driven pressure nor the product of purely internal professional aspiration, but the outcome of their interaction within a concrete teaching-research ecology; institutional designs for teacher professional development

should therefore attend simultaneously to task setting, value guidance, and support structures.

5.4 Practical Implications

This study yields three practical implications. First, teacher professional development should take textbook restructuring as its vehicle, promoting teacher learning through the resolution of authentic instructional problems. Teaching-research activities should be organized around concrete problems of textbook restructuring rather than generic theoretical learning; in the current context of nationwide adoption of new textbooks and pronounced urban–rural disparities in learning conditions, textbook restructuring deserves to become a core topic of school-based teaching research. Second, teacher professional development should attend to cultivating the capacity for evidence-based reflection. Reflection in textbook restructuring is not a simple summary of experience but systematic analysis grounded in student evidence: teachers need to learn to collect evidence (classroom observation, student work, completion-rate records), analyze it, and adjust instructional decisions on its basis—this is the operational meaning of transforming a teaching task into a research problem. Third, teacher professional development should establish iteration mechanisms and supportive communities. Professional growth is not achieved in a single step but is gradually realized through cycles of design, validation, reflection, and redesign. Teaching-research communities should support teachers through multiple rounds of iteration, permit trial and error, and provide sustained feedback and alternative perspectives through mechanisms such as lesson commentary and peer review.

6. Conclusions and Limitations

Taking the lesson iteration processes of two secondary school English teachers as empirical material, this study examined how teachers achieve professional growth in textbook restructuring around three research questions, with the following main conclusions. In response to Research Question 1 (the growth process and its stage characteristics): teachers' professional growth is concretely manifested in three practical modes of textbook restructuring (activity resequencing, task differentiation, and assessment embedding) and in three stages of PCK reconstruction (from textbook logic to learner logic, from uniform design to differentiated design, and from a focus on teaching to a focus on learning). In response to Research Question 2 (the key mechanisms): textbook restructuring constitutes an endogenous pathway of teacher professional development whose mechanism differs from the learning-before-use sequence of training-based stimuli, displaying instead a problem-driven character of learning in the service of immediate use; the student-evidence-driven iteration mechanism and the support of the teaching-research community are the key conditions enabling teachers to transform teaching tasks into research problems, thereby sustaining the design–validation–reflection cycle. In response to Research Question 3 (identity transformation and its implications): teachers' professional identity shifts from textbook implementer to learning designer, with systematic transformations in their views of textbooks, design, and assessment; this transformation suggests that teacher professional development should take textbook restructuring as its vehicle, evidence-based reflection as its core, and iteration mechanisms together with community support as its guarantee.

The theoretical contributions of this study are threefold. First, it distinguishes the differing effects of task-driven and training-based external stimuli on teacher professional development, enriching the understanding of the external domain in Clarke and Hollingsworth's Interconnected Model. Second, it reveals the mechanisms through which PCK is activated and reconstructed in textbook restructuring, providing empirical evidence from the foreign language discipline for research on PCK development. Third, it extends textbook use research from how teachers use textbooks to how textbook use changes teachers, and—through the findings on selective fidelity and the activation of teacher agency—it opens a dialogue among research on curriculum implementation orientations, teacher identity, and teacher agency.

The limitations of this study are as follows: the sample comprises only two teachers, both of whom voluntarily participated in project-based teaching research, so the applicability of the conclusions to teachers not involved in such projects awaits verification; the research period was relatively short (five months), precluding the tracking of teachers' long-term professional development trajectories; the researcher's insider position as a project participant, although subjected to reflexive control, may still have influenced the interpretation of the data; and the study relied primarily on qualitative data, lacking quantitative verification of student learning outcomes. Corresponding to these limitations, future research may proceed in three directions: first, selecting as a comparison group teachers from the same school, grade level, and subject background who did not participate in project-based teaching research, so as to test the differential effects of task-driven versus training-based stimuli on teachers' PCK reconstruction; second, extending the tracking period to examine whether the transformation of professional identity remains stable after the conclusion of project-based teaching research and whether it can transfer to other units of the new textbooks; and third, incorporating student achievement data to comprehensively evaluate the dual effects of textbook restructuring on teacher development and student growth.

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