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A qualitative case study on the development of the scholarship of teaching and learning: Centred on primary and secondary school teachers

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Abstract: This study aims to explore the perceptions of the Scholarship of Teaching and Learning (SoTL) of primary and secondary school teachers in C City, China, as well as the challenges they face in developing these abilities. Through narrative inquiry involving five current teachers, the research collected their personal experiences in the development of teaching and academic abilities, with data gathered through semi-structured interviews. The findings reveal that teachers are primarily driven by external forces, professional identity, personal growth, and the need to improve teaching quality in their efforts to enhance teaching and academic abilities. However, they also encounter challenges such as teaching pressures, time management difficulties, insufficient school support, and declining energy. To overcome these obstacles, teachers have adopted strategies such as time management, task allocation, and cognitive enhancement. The study concludes by recommending that through the combined efforts of teachers, schools, and society, a strong professional belief system should be established, and a supportive environment should be created to collaboratively promote the development of teaching and academic abilities among primary and secondary school teachers, thereby fostering their professional growth.

Keywords: primary and secondary school teachers; the scholarship of teaching and learning (SoTL); narrative inquiry

1. Introduction

The Scholarship of Teaching and Learning (SoTL) of primary and secondary school teachers refer to the competencies that enable teachers to improve and innovate their teaching practices, enhancing the effectiveness of knowledge transfer. These abilities are grounded in epistemology and are aimed at cultivating students' disciplinary literacy through systematic exploration and reflection on issues related to teaching and learning. The "China Education Modernization 2035" plan explicitly identifies "adhering to reform and innovation" as a fundamental principle for advancing educational modernization. It calls for teachers to strengthen the cultivation of students' innovative abilities and to promote heuristic and inquiry-based teaching methods. This guidance sets the direction for building a high-quality, professional, and innovative teaching workforce in China. The concept of "teachers as researchers" has become a new requirement for primary and secondary school teachers in the new era, as well as an intrinsic demand for constructing a high-quality teaching workforce.

However, the pressure of exam-oriented education and the emphasis on high school admission rates in China have led to insufficient motivation among primary and secondary school teachers to understand and implement new teaching concepts. Despite these challenges, an increasing number of primary and secondary schools

view teaching research as a critical pathway to enhancing teacher quality and professional development. This paper aims to examine the challenges faced by primary and secondary school teachers in developing their SoTL and to explore effective strategies to substantially improve these abilities.

The study focuses on the perceptions of primary and secondary school teachers regarding their SoTL and the difficulties they encounter in this developmental process. By taking teachers from various primary and secondary schools in C City, China, as the subjects, the research explores their personal experiences in the development of these abilities and the significance they ascribe to these experiences. To achieve the research objectives, this paper poses the following research questions:

- 1) What motivates primary and secondary school teachers to develop their SoTL?
- 2) What difficulties do primary and secondary school teachers encounter in the process of developing these abilities?
- 3) How do primary and secondary school teachers ascribe meaning to their experiences in balancing teaching duties and academic research?

2. Theoretical background

2.1. Scholarship of teaching and learning

Boyer (1990) first introduced the concept of the “Scholarship of Teaching,” aiming to shift traditional perceptions of teaching and, consequently, alter societal views on the value of teaching. By integrating academic research with teaching practices, Boyer sought to explore ways to enhance teaching through scholarly inquiry. He proposed a framework that categorizes scholarship into four types: a) Scholarship of Discovery: Involves discovering or exploring through empirical research and other methods; b) Scholarship of Integration: Involves synthesizing or integrating knowledge, particularly through interdisciplinary reviews; c) Scholarship of Application: Involves applying academic findings to academic services and practical problems; d) Scholarship of Teaching: Involves not only disseminating knowledge through teaching but also transforming and expanding it (Boyer, 1990).

Over time, Boyer incorporated the term “teaching” into his definition, placing greater emphasis on student engagement, thus leading to the widely used concept of “Scholarship of Teaching and Learning” (SoTL) today. Boyer argued that teaching itself is inherently scholarly, requiring teachers to possess a deep understanding of their subject matter and to actively engage in intellectual activities. Teachers are not merely transmitters of knowledge but also participants in learning, meaning that teaching involves not only the sharing of knowledge but also its creation and transformation. As Boyer (1996) noted, “Inspired teaching keeps the flame of scholarship alive.”

This integration of scholarship with teaching forms the foundation of SoTL. Although Boyer (1990) highlighted the importance of teaching and described other types of scholarship, he did not provide a clear definition of the scholarly nature of teaching. Hutchings and Shulman (1999) expanded on Boyer’s concept in their article, “The Scholarship of Teaching: New Elaborations, New Developments”. They argued that research focused on teaching practices could effectively improve learning outcomes. Huber and Morreale (2002), drawing on Gilpin (2011), defined SoTL as

“the scholarship of teaching that is inquiry-based and participatory, reconceptualizing teaching as an ongoing academic process focused on enhancing student learning.”

Malaney (2002) delved deeper into the issues surrounding SoTL, calling for teachers to critically assess the effectiveness of their teaching methods. He suggested that teaching should be examined from three perspectives: a) What we teach (i.e., content and practices); b) How we teach (i.e., how we learn to teach, what training is needed, and how teaching is assessed); c) Whom we teach. He emphasized the importance of continuous interaction and communication with both new and practicing teachers.

Prosser (2008) defined SoTL as “evidence-based critical reflection aimed at improving practice,” distinguishing it from research, inquiry, assessment, and literature reviews. Kreber (2003) also emphasized the centrality of critical reflection in conceptualizing SoTL: she argued that SoTL involves a deep knowledge base, inquiry orientation, critical reflection, peer review, and the sharing or publication of insights and innovations generated through inquiry (Kreber, 2007). Kreber (2007) developed a taxonomy of reflective processes related to SoTL. She proposed that teachers could reflect on three areas of knowledge: a) Curricular knowledge (i.e., educational goals and objectives); b) Psychological knowledge (i.e., how students develop and learn to achieve these goals); c) Pedagogical knowledge (i.e., teaching methods and instructional design processes that optimize learning).

Gurm (2009) summarized that a key commonality in SoTL definitions is the emphasis on “understanding the process of teaching, particularly in enhancing teachers’ understanding of that process within a specific context.” Gilpin (2011) shared a similar view, stating, “It is the specific context that SoTL focuses on, which differentiates it from general research on teaching and learning, as it brings deeper understanding and clarity to particular situations.” Prosser (2008) further pointed out that while educational research often focuses on general contexts, SoTL ensures attention to specific contexts (such as individual classrooms or teachers’ practices). The primary goal of engaging in the SoTL is to improve student learning outcomes. To achieve this, we must systematically reflect on the evidence of student learning within specific classes and subjects.

2.2. SoTL of Primary and secondary school teachers

Scholarship of Teaching and Learning are essential professional competencies for primary and secondary school teachers, constituting both a professional development requirement and a crucial pathway for their professional growth. The reform of basic education curricula calls for a transformation in the teacher’s role, requiring teachers to be not only transmitters of knowledge but also researchers in teaching (Wang, 2005). The scholarly and exploratory nature of academic teaching in primary and secondary schools, with a focus on teaching, further clarifies the path for teacher professional development. Teachers can only achieve breakthrough professional growth by exploring effective teaching methods for students within their practice and autonomously mastering pedagogical knowledge.

Moreover, the enhancement of teaching practices in primary and secondary schools is inextricably linked to the support provided by SoTL. The scholarly nature

of teaching is reflected in a teacher's ability to apply disciplinary methods, theorize the knowledge generated during the teaching process, critically examine their practices, and engage in dialogue, sharing, and dissemination with fellow teachers (Li, 2020). For primary and secondary school teachers, conducting teaching and academic research is not merely a process of knowledge transmission but also a process of generating, applying, and refining practical knowledge.

Furthermore, the scholarship of teaching at the primary and secondary levels drives teaching activities beyond individualized practices. Teaching research outcomes can only be widely accepted and considered complete when they undergo public evaluation and are recognized by others (Yang, 2023). There is indeed a distinction between the academic teaching ability and the SoTL of primary and secondary school teachers. Academic teaching abilities focus more on teaching practice, with the emphasis not on publishing papers or applying for research projects, but on conducting multifaceted research on real issues within teaching practice. Whether through sharing teaching outcomes, teaching evaluations, or other forms of teaching research, any effort that effectively addresses practical problems in teaching holds significant scholarly value. This practice-oriented scholarly ability emphasizes innovation and exploration by primary and secondary school teachers on the frontline of education.

3. Research methodology

3.1. Narrative inquiry

This study focuses on five current primary and secondary school teachers from C City, China, using the narrative inquiry method as described by Costantino (2001). The research examines these teachers' understanding of SoTL, as well as their experiences and the significance of balancing teaching and academic responsibilities. Narrative research is a widely used methodology in qualitative research within the social sciences, with diverse discussions surrounding its definition and methods. Labov and Waletzky (1967) argued that narratives reconstruct the flow of time through the researcher's analysis and interpretation, thereby sustaining its meaning. Labov (1972) further noted that narratives are stories about specific past events, characterized by continuity as a core element, comprising a process that includes a beginning, development, and conclusion. Riessman (1993) suggested that due to this continuity, narrative research always involves exploring "what happened next."

From a qualitative research perspective, Creswell and Poth (2015) defined narratives as oral or written texts that connect and explain a series of events in chronological order. This process of experiential reconstruction maintains continuity, linking the participant's past, present, and future. Furthermore, narrative research allows for interaction between the researcher and participants, facilitating the understanding and exploration of participants' personal experiences. In this context, narratives are not merely simple stories from everyday life but become crucial tools for researchers to analyze and interpret the subjects of their study. Therefore, this research aims to investigate the experiences of primary and secondary school teachers in balancing teaching and academic work, and to explore the significance of these experiences. The narrative inquiry method is considered an effective approach in this

study for understanding and examining the balance between teaching and academic responsibilities among primary and secondary school teachers, and for imbuing these experiences with profound meaning through narrative analysis.

3.2. Research participants

The participants in this study are five current primary and secondary school teachers from C City, China, comprising three males and two females. Their schools include three primary schools and two high schools, with teaching experience ranging from less than five years to over thirty years. Specifically, one participant has less than five years of teaching experience, two have less than ten years, one has twenty years, and one has thirty years of experience.

The success of narrative inquiry depends on establishing trust between the researcher and participants, as well as selecting appropriate participants for the research theme. For this study, an initial screening of potential participants was conducted, and after fully informing them of the research purpose and obtaining their consent, the final participants were confirmed. To ensure the validity of participant selection, the study adopted a voluntary participation criterion, ensuring that all participants are currently active teachers:

- a) Participant A is a 29-year-old unmarried female with four years of teaching experience in a primary school.
- b) Participant B is a male in his thirties with six years of teaching experience at a school, primarily teaching geography. He is also an online geography science communicator, using videos to spread geographical knowledge.
- c) Participant C is a female in her thirties with six years of experience teaching English in a primary school. She also serves as the school office director, taking on substantial administrative responsibilities.
- d) Participant D is a male in his forties with over twenty years of teaching experience, currently teaching Chinese in a primary school and serving as the school's teaching researcher.

Participant E is a male in his fifties with thirty-eight years of extensive teaching experience, currently serving as a chemistry teacher and department head in a high school.

Although these participants share the commonality of being current primary and secondary school teachers, their varied teaching experiences, academic abilities, and personal backgrounds reflect unique characteristics. The basic information about the research participants is summarized in **Table 1**.

Table 1. Basic information for participants.

No.	Participant (Gender)	Age	Years of Teaching	Type of Institution (Subject)	Title
1	Teacher A (Female)	28	4	Primary School (Mathematics)	Junior Teacher
2	Teacher B (Male)	31	6	High School (Geography)	Intermediate Teacher
3	Teacher C (Female)	32	6	Primary School (English)	Intermediate Teacher
4	Teacher D (Male)	43	24	Primary School (Chinese)	Intermediate Teacher
5	Teacher E (Male)	59	38	High School (Chemistry)	Senior Teacher

3.3. Interview script

This study employs a qualitative research approach, using semi-structured interviews to deeply explore the challenges, influencing factors, and potential strategies for enhancing the teaching scholarship abilities of primary and secondary school teachers. The design of the semi-structured interviews aims to ensure flexibility, allowing respondents to fully express their personal views and experiences while maintaining systematic and consistent interview content.

- a) The interview script is designed around the following core themes to systematically understand the current state of teachers' academic abilities, the support and challenges they face, development strategies, and future recommendations.
- b) Background information: Respondents will be asked to introduce their teaching background and discuss the importance of academic abilities in their professional development as teachers.
- c) Current academic ability: Respondents will be asked to assess their current level of academic ability, including how they perceive peer collaboration and their practices in teaching reflection. The interview will also identify areas where they feel confident and those that need improvement. Additionally, the interview will explore the school's expectations or goals for the development of teachers' academic abilities, how teachers balance teaching with research, and the application of research findings in their teaching.
- d) Support and challenges in developing academic abilities: Respondents will discuss the support measures provided by their school or educational authorities, as well as their understanding of and willingness to engage in teaching scholarship and the sources of their motivation. Furthermore, respondents will be asked whether they have sufficient opportunities for academic exchange both within and outside the school, and how these opportunities impact their academic development. Finally, the interview will explore the importance of teaching and academic work in teacher evaluations and promotions, along with relevant policies.
- e) Strategies for developing academic abilities: Respondents will share what they believe are the most effective strategies or methods for enhancing their academic abilities. They will also be asked whether they participate or plan to participate in specific academic activities or projects to improve their academic skills.
- f) Recommendations for developing academic abilities: Respondents will provide suggestions to schools or educational authorities on how to better promote the development of teachers' academic abilities and discuss how to better integrate the development of teachers' academic abilities with teaching practice in the future. Additionally, the interview will analyze the intersection of teachers' career development plans with teaching scholarship work, as well as their views on the development of teaching scholarship.
- g) Conclusion: At the end of the interview, respondents will be encouraged to share any additional experiences or views related to the development of teachers' academic abilities and to highlight areas or issues in academic development that may have been overlooked.

3.4. Data collection and analysis

In narrative inquiry, semi-structured interviews serve as a purposeful form of dialogue that not only confirms information relevant to the research objectives but also provides participants the freedom to express and share their personal experiences. During the data collection phase, the researcher began by sharing his own daily experiences as a current university teacher, both in teaching and academic work, to establish a conversational starting point. This approach created a relaxed atmosphere for participants to narrate their stories and explore how they balance teaching and academic work as primary and secondary school teachers. Due to geographical constraints, the researcher prearranged the interview dates and times with participants and conducted the semi-structured interviews remotely via Tencent online meetings. Tencent Meeting is an online conferencing platform that is suitable for various online usage scenarios, including businesses, educational institutions, and individual users. It is widely used, particularly in remote work and online education. In China, Tencent Meeting is generally the preferred choice for online conferencing platforms.

Based on the personal schedules of the five participants, the researcher divided the interviews into two parts: first, individual one-on-one interviews were conducted (each lasting 45 to 60 min), followed by additional questions sent via email. The data collection phase spanned from 7 June to 10 June, 2024, lasting a total of five days. During the first three days, one-on-one remote interviews were conducted through Tencent online meetings, followed by two days of supplementary questions via email. The individual interviews focused on the core themes of the research questions, and additional questions addressed potential omissions during transcription. To ensure the interviews took the form of natural conversations, the researcher pre-designed semi-structured interview questions based on the research themes. With participants' prior consent, the researcher recorded the entire interview process. After the interviews, the recordings were initially transcribed, followed by multiple reviews and refinements of the transcriptions. The interview questions covered topics such as the motivation for developing SoTL, experiences in balancing teaching and academic work, and the challenges encountered in developing these abilities.

This study was conducted with the approval of the Institutional Review Board (IRB) of Sehan University in South Korea. To address potential ethical issues in the research process, the researcher thoroughly explained the study's purpose, interview methods, confidentiality measures, anonymity, voluntary participation principles, and the possibility of withdrawing from the study before the interviews. All collected data will be destroyed after the conclusion of the study. At the start of the interviews, the researcher reiterated that the interview content would not be used for purposes other than research and reaffirmed participants' rights to anonymity, confidentiality, and the option to withdraw at any time.

This study identified common themes and conclusions from the interview data and attempted to synthesize these themes. To do so, we applied the narrative research procedure proposed by Clandinin (2000), known as "constructing research texts from field texts." The specific data analysis and interpretation process was as follows:

First, following Clandinin's (2000) recommendations, the collected field texts were reviewed as a whole, reexamining the research themes, objectives, and questions.

Second, during the reading of the field texts, significant content from each participant was summarized and organized. The significance was judged based on its relevance to the research questions. For each participant, 5 to 8 major themes and events were identified, and these themes were discussed with co-researchers. The corresponding transcriptions were systematically organized according to these themes. The third step involved reclassifying and reconstructing each participant's themes and transcription content based on the research questions. During this process, each participant's themes and content were categorized and summarized according to the research questions. In the fourth step, the participants' narratives were analyzed in relation to the research questions. Through multiple readings of the organized material, common content or vocabulary was identified, leading to the identification of three main codes: the motivation and challenges of developing SoTL, and the significance of balancing teaching and academic work. Subsequently, the data were reclassified according to these codes, with repeated readings and analysis to examine the specific characteristics of each code.

To ensure the validity of the research findings, this study adopted the narrative judgment criteria proposed by Clandinin (2022). To enhance the credibility of the research, the researcher minimized personal biases throughout the interview process and focused on listening attentively to the participants' narratives. Additionally, through member checking and consultative validation, the researcher engaged in multiple dialogues and feedback sessions with the participants to reduce subjective biases in the analysis and interpretation process. This approach not only strengthened the credibility of the study but also ensured that the research findings more accurately reflected the participants' genuine experiences and perspectives.

4. Research findings

This study explored the parallel development of SoTL among primary and secondary school teachers in China. The findings indicate that the primary motivations for teachers to develop their SoTL are external drivers, such as requirements for professional title evaluations and school mandates. Secondary motivations include the desire for personal growth and the need to improve teaching quality. As teachers gain more experience and clarify their career goals, they increasingly recognize the importance of developing their Scholarship of SoTL. However, the main challenges they face in this process include difficulties in time management, lack of school support, teaching pressures, and energy depletion. The interview data reveal that, in balancing teaching duties and academic research, teachers ascribe significant meaning to these experiences. This includes enhancing their professional teaching abilities, strengthening their sense of professional identity and accomplishment, and improving teaching practices through academic work. The factors identified from the interview data are detailed, with each factor further divided into subcategories, presented sequentially according to the three research questions to thoroughly convey the findings.

4.1. Motivation for developing SoTL

The primary motivations for the development of SoTL among primary and

secondary school teachers are external drivers, professional identity, personal growth, and the need to improve teaching quality.

In the first interview, I began with the question, “What do you consider to be the primary function of a teacher?” All participants unanimously responded with “teaching and educating students.” When I probed further about how they enhance their ability to teach and educate, most teachers mentioned improving their teaching abilities, while only a few referenced their academic abilities, specifically their SoTL. As I delved deeper into the motivations behind their efforts to develop these abilities, Teacher A stated that her main motivation for engaging in academic teaching activities is related to professional title evaluations and school requirements. She expressed that teaching is a teacher’s primary duty, and participation in academic research is largely driven by the need to meet criteria for career advancement, such as publishing papers or participating in research projects. Additionally, she noted that teachers often participate in activities such as lectures, teaching competitions, lesson studies, and peer reviews due to mandatory school requirements. However, Teacher A also mentioned that, on a personal level, she actively seeks out high-quality lessons and learns innovative teaching methods to better assist her students, thereby enhancing classroom teaching quality.

...In addition to the weekly subject-specific teaching seminars, there are also regular teaching discussions among teachers in the office. For instance, when we are preparing a lesson together or encounter a difficult problem, we discuss it collectively. I find these details to be very helpful in improving my teaching... The school requires each teacher to conduct one open class and one assessment class every semester, and teaching supervisors or administrators often attend and evaluate these classes. Being observed and observing others’ classes is quite routine... I think this is closely related to one’s career planning. If you want to be promoted or aim for a higher position, you definitely need to undertake teaching projects and publish papers. But since I don’t have these ambitions, I don’t feel the need to pursue such projects or topics... Personally, I prefer to observe high-quality lessons, such as learning about some teaching methods from Finland, which have greatly benefited our teaching practices... (Teacher A, 7 August, first online interview).

Teacher B similarly mentioned that the primary driving force behind engaging in academic research is the external pressure of professional title evaluations, with personal interest in academic pursuits being secondary. However, Teacher B also stated that his motivation to develop SoTL is not solely tied to title evaluations but also stems from a desire for personal growth and the aspiration to enhance his capabilities by reflecting on and summarizing his teaching experiences. On the other hand, Teacher C indicated that her motivation for participating in academic activities is primarily driven by the need for career development, particularly for the purpose of title promotion, rather than an intrinsic interest in teaching research itself.

...Publishing papers definitely helps with professional title evaluations, which is why everyone applies for research projects and publishes papers. The regulations for title promotion clearly require these. However, my reason for publishing papers is to summarize educational and teaching practices. I want to leave something meaningful for the educational community... During the first three

years of my career, I mainly focused on publishing papers, but in the last three years, I've started creating videos instead, turning my summaries into videos that can reach a wider audience compared to papers... Early on, my graduate advisor gave me some advice, and I took it seriously. He said that I should publish at least one paper every year to summarize my teaching experiences. Since my undergraduate degree wasn't in geography, but I studied geography in graduate school and then became a geography teacher, I felt it was necessary to enrich myself and strengthen my teaching abilities... (Teacher B, 8 August, first online interview).

...As primary school teachers, we are required by the school to participate in many teaching competitions... Even when a lesson wins first prize, it's entirely different from our everyday teaching. The context of a teaching competition doesn't reflect what regular teaching looks like. The audience in a teaching competition is the judges, while in daily teaching, it's the students, so there's a significant difference. There's a complete disconnect between daily teaching and teaching competitions. Teachers often participate in these competitions more for career advancement, such as for professional title promotions, awards, or because the school requires it... (Teacher C, August 8, first online interview).

Teacher D pointed out that although many teachers initially develop their SoTL to meet school requirements and professional title evaluations—some even ceasing their research after achieving their desired title—the majority are motivated by personal growth. This motivation is especially rooted in the need for professional development, a strong identification with the teacher's role, and a recognition of the value of educating and nurturing students. Teacher D also emphasized that the purpose of teaching competitions is to help teachers grow and improve, rather than just serving as a formalistic exercise. Similarly, Teacher E stressed that in the process of developing SoTL, intrinsic motivation is crucial. The focus should be on enhancing teaching quality and promoting student growth, with a student-centered approach to education, rather than solely aiming for title evaluations.

...Teaching competitions are designed to help teachers grow. They primarily facilitate personal growth for teachers, enabling them to undergo a profound transformation in a short period, which could involve changes in mindset, educational approaches, or teaching methods. Once this transformation occurs, it naturally influences their daily teaching, ultimately benefiting student development... Teaching competitions are focused on professional growth, requiring teachers to thoroughly study the curriculum, pay attention to details they might normally overlook, and refine their communication and evaluation methods, all of which can enhance their teaching. In our daily teaching practice, reflective teaching is essential—after each lesson, teachers should reflect and write a brief summary, considering what worked well and what could be improved. I do this regularly... For example, I often document small stories from my teaching experiences, not just in a few words, but by treating them as small research projects. This reflection or experience contributes significantly to our teaching judgment and analysis... In my experience, teachers who are motivated to write reflective articles are not just driven by the title evaluation system; they are motivated by interest, a sense of responsibility, and a strong professional

identity to engage in teaching research... (Teacher D, 9 August, first online interview).

...The school regularly organizes teaching research meetings, exchange sessions, and invites experts for lectures each semester, though these events are not scheduled at fixed times. The school also holds teaching competitions within each subject group to facilitate multi-faceted exchanges aimed at improving teaching quality... This is an effective way to enhance one's abilities... The greatest motivation is not just the rewards set by the school or the selection of outstanding teachers; these are secondary. The primary motivation is internal—the desire to improve one's teaching and professional abilities... Teaching is certainly about academic achievement, but nurturing students is also a significant responsibility for teachers. Years after graduation, students may forget much of the subject matter, but what they truly retain are the professional skills and the subtle, lasting influence of their teachers. What remains most impactful are the lessons teachers imparted, shaping how students adapt to society, engage with traditional culture, and navigate life... The motivation for developing SoTL comes from two sources: intrinsic motivation, which is the desire to improve oneself to meet new and greater teaching challenges and better serve educational needs; and extrinsic motivation, which includes the need for professional title evaluations, promotions, and career advancement, driving continuous efforts to improve and develop one's SoTL... (Teacher E, 10 August, first online interview).

Based on the analysis of the interview data, it can be concluded that as primary and secondary school teachers gain more teaching experience, their understanding of SoTL gradually deepens. In this process, the external drivers for developing these abilities primarily stem from the demands of professional title evaluations and school regulations. In contrast, the internal drivers are centered around the need for personal growth and professional development. Most teachers view the development of SoTL as an important part of their personal growth, while a few teachers recognize that their motivation stems from an intrinsic need to improve teaching quality.

4.2. Challenges faced by primary and secondary school teachers in developing SoTL: Teaching pressure, time management difficulties, lack of school support, and declining energy and cognitive resources

Although primary and secondary school teachers have recognized the importance of developing their SoTL, they still face numerous challenges in enhancing these abilities while balancing teaching responsibilities with academic research. To gain a deeper understanding of these challenges, we asked participants about the specific difficulties and pressures they encountered during this process.

Teacher A emphasized that lack of time is the primary challenge. Due to the heavy teaching workload, she finds it difficult to allocate sufficient time for academic research. Similarly, Teacher B mentioned that the demands of teaching and family responsibilities leave him with little time to engage in scholarly activities. Teacher C pointed out that time management is a major issue, as she believes that research activities are often overshadowed by teaching tasks and administrative duties.

...Teachers are already very exhausted from their teaching duties, so they don't

have much energy left to devote to research. In primary schools, teaching work is more important, and it is often tedious and repetitive, like grading assignments and answering students' questions, which consumes a lot of time... The pressure from teaching quality assessments is especially burdensome because these assessments occur every semester. As the end of the semester approaches, it becomes really tough—both for the students and for the teachers. The evaluation mechanism for teaching quality is based on student learning outcomes, primarily exam scores, and these scores are used for various comparisons. This situation forces teachers to focus on improving students' grades because if the results don't meet the standards, it could negatively impact the teacher's performance evaluation. Therefore, teachers have no choice but to prioritize their teaching work... (Teacher A, 7 August, first online interview).

In addition, Teacher A mentioned the lack of research resources and insufficient school support as significant obstacles in her efforts to develop SoTL Teacher D also faces similar time pressures and emphasized that school support is crucial. He noted that rural schools often provide inadequate support, making it challenging to engage in academic activities, whereas schools in city centers have a more robust academic atmosphere, which positively influences teacher development. Teacher E, on the other hand, expressed that as he ages, he feels increasingly drained of energy, and his motivation for academic work has diminished. He also pointed out that younger teachers often lack clear career planning goals, leading to an insufficient understanding of the importance of developing SoTL. Additionally, he questioned the adequacy of the current support provided by schools, suggesting that it falls short of meeting the actual needs of teachers.

...At different stages of a career, various factors have different influences. For example, when I first started working, I wasn't at a top-ranked school in the city; I was at a rural school in my hometown. The broader environment of rural schools, along with various other factors, means that there is often little emphasis on professional development for teachers. The lack of access to information, inability to improve teaching skills, and insufficient experience make it easy for everyone to just go through the motions in their work, struggling to find a sense of professional identity and value... (Teacher E, 10 August, first online interview).

...The main pressures I face in the teaching process can be summarized into several categories: personal pressure, pressure from students and parents, school pressure, and societal pressure. Firstly, I feel pressure when my educational philosophy is not updated in time, my knowledge base becomes outdated, and my teaching methods remain traditional, which hinders my ability to teach students effectively. This goes against my professional responsibility and negatively impacts the development of my teaching and academic abilities. Secondly, my students' knowledge levels vary widely, and combined with parents' high expectations for their children to succeed, this often leads to unrealistic demands on the students and, consequently, higher expectations for my teaching outcomes, which adds to my stress. Thirdly, the pressure from the school and society is mainly focused on the narrow pursuit of high graduation rates. This pressure further increases my burden in education and teaching. In

such an environment, I am often forced to devote more energy to improving students' academic performance, leaving me unable to fully focus on the holistic development of students' physical, psychological, and intellectual growth. As a result, I sometimes find it difficult to balance comprehensive educational goals and am instead compelled to focus on improving students' academic scores through activities like drilling and exams, which in turn affects the development of my teaching and academic abilities. For teachers of his age, as they grow older, their energy gradually diminishes, making it difficult to sustain the work required for ongoing teaching research. Additionally, with retirement approaching, there's a tendency to adopt a more complacent attitude. Meanwhile, the current educational pressures push teachers to focus more on teaching tasks, neglecting their own need for learning and improvement. Under such circumstances, even young teachers are gradually losing the motivation to further enhance themselves. The current work atmosphere in schools does not stimulate their interest in learning, and reflective teaching practices have become scarce. Many teachers are preoccupied with the rankings of their classes in the final exams. In his subject group, there are eight teachers—three are over 50, two are over 40, and three are in their 30s. However, most of them are content with their class rankings in each exam. Despite my frequent reminders to engage more in teaching research, they tend to focus on academic performance to gain recognition from their supervisors and the school... They may not currently realize or be aware that professional development and career planning require strong SoTL. The current evaluation mechanism for teaching results in schools providing support that is far from meeting the actual needs. Schools are more concerned with student performance, often neglecting the cultivation of teachers' SoTL... (Teacher E, 10 August, first online interview).

From this analysis, it is evident that the challenges faced by primary and secondary school teachers in developing their SoTL can be broadly categorized into external and internal factors. External factors include the increased teaching pressures, difficulties in time management, and insufficient support from schools. These pressures often force teachers to prioritize immediate teaching tasks over long-term academic development.

Internal factors involve unclear career planning among teachers, which leads to a lack of awareness and recognition of the importance of developing SoTL. Additionally, the natural decline in energy and motivation with age further exacerbates the difficulty of sustaining academic engagement. These factors, both external and internal, collectively hinder the further enhancement of SoTL among primary and secondary school teachers.

4.3. Experiences of primary and secondary school teachers in balancing teaching and academic research: time management and task allocation, cognitive enhancement, support from schools and mentors, and complementarity between teaching and research

Balancing teaching duties with academic research significantly impacts the development of SoTL among primary and secondary school teachers. The interview

results indicate that most participants find it challenging to maintain a balance between teaching and academic work. For most teachers, teaching is the core task, with academic research serving either to support their teaching or to meet external demands. Through the process of balancing these responsibilities, teachers enhance their sense of professional identity and find a sense of achievement. Teacher B mentioned that his primary motivation for engaging in academic research is personal interest, and he continues to try to apply research findings in his teaching. However, as a teacher, he prioritizes his energy on teaching, scheduling academic research during his spare time. When participating in research, he prefers to select topics closely related to his actual teaching practice to ensure that teaching and research complement each other. Teacher C believes that administrative duties place significant pressure on her time management. She prioritizes completing her teaching tasks, but administrative work consumes most of her working hours. When possible, she utilizes any available time to conduct academic research. She also mentioned that collaborating with colleagues helps to share some of the teaching workload, which in turn frees up time for her to engage in research.

...Through my research, I can genuinely guide my teaching practice and improve my teaching. Treating how to teach effectively as a research topic and getting other teachers involved in the research helps everyone improve their teaching. I believe this is the true essence of conducting research projects. Therefore, academics and teaching are inseparable—academic research informs teaching, and teaching drives academic inquiry. Academic research and innovation require time, specifically time to reflect, summarize, and develop new ideas and approaches that can be put into practice. I usually reflect and summarize after class and then apply these insights in my teaching. This process demands a clear professional path and direction. If one aims to be a research-oriented teacher, it's essential to be bold enough to decline tasks unrelated to teaching and to achieve tangible results... My current career plan involves being both a teacher and a video blogger. Producing and publishing videos related to teaching and geography is about continuous updating, with each video representing a research outcome that I mostly incorporate into my teaching. In this way, teaching and research complement each other... (Teacher B, 11 August, second interview).

Teacher D mentioned that in balancing teaching and research, he relies on “teaching reflection” and “real-time adjustment” to manage both. After completing his teaching duties, he immediately engages in reflection and incorporates these insights into his research work, which in turn enhances his teaching practice. He believes that a mutually reinforcing relationship can be established between teaching and research, where each support and improves the other.

The key to growth lies in the combination of experience and reflection. Without reflection, true growth is difficult to achieve. I often go out to give lectures and share content that primarily consists of small stories from daily teaching practice—practical experiences from frontline teachers. These stories are more relevant to teachers' actual work and are easier for them to accept. These small stories and practical experiences are what I have gradually recorded through reflection and accumulation in my teaching practice. In our regular teaching activities, a teaching reflection often involves writing a brief summary after a lesson. During this process, I reflect on what I did well and

what could have been better. But I often take these small educational stories and document them—not just in a few words, but by treating them as small research projects. Our reflections or experiences primarily assist in improving our teaching judgment. (Teacher D, 10 August, first interview).

Additionally, in the interaction between academic research and teaching, primary and secondary school teachers often use research outcomes to improve their teaching practices. As Teacher E mentioned, the core responsibility of a teacher is to educate students, and he believes that research should serve the purpose of enhancing teaching. His strategy for balancing teaching and research is primarily through setting clear work priorities. He prefers to use traditional teaching methods and leverage his extensive teaching experience to ensure that teaching tasks do not consume excessive time. This approach allows him to engage in research work closely related to teaching after completing his teaching duties.

As a teacher with 38 years of experience, I deeply love this profession. It's this passion that drives me to do my job well, and I want my students to learn better, which requires me to dive deep into my work. This deep exploration isn't limited to teaching alone but extends to the entire educational process. I have always been familiarizing myself with my subject matter while also delving deeply into content related to textbooks and curriculum standards, keeping a close eye on past exam patterns and new educational developments. To improve my students' performance, I continuously enhance my teaching skills through teaching seminars, and I often reflect and discuss teaching strategies. Teaching and academic research are not contradictory but mutually reinforcing. I believe that new teaching methods and emerging issues in the classroom provide material and resources for research, while the practicality of academic research results needs to be tested through the teaching process, offering strong theoretical support for teaching. Therefore, during my teaching, I always collect and organize new findings and issues from the classroom and then research them as academic topics. My time is mainly divided between classroom teaching and academic research after class... (Teacher E, 11 August, second interview).

The research findings indicate that although the participants have made significant efforts to balance teaching and academic research, resolving the challenges that arise in this process is not easy. However, as their teaching experience accumulates, teachers' sense of professional identity strengthens, and their pursuit of professional achievement becomes increasingly pronounced. The belief in "student-centered" education and the desire to better educate and nurture students gradually transforms into a driving force, motivating them to continuously enhance their professional competencies. In this process, teachers improve their SoTL by reflecting on and summarizing their teaching practices, as well as through interactions and exchanges with their peers. This enhancement of SoTL, in turn, contributes to the ongoing improvement and optimization of their teaching practices.

5. Discussion and conclusion

This study aimed to understand the motivations behind the development of SoTL among primary and secondary school teachers in China, the challenges they face in this process, and their experiences in balancing teaching and academic work. We

employed Clandinin's (2000) narrative inquiry to delve into the meanings that teachers extract from their own experiences. The research findings are summarized as follows:

Firstly, the motivations for teachers to develop their SoTL vary widely. Some teachers (such as Teachers A and C) are primarily driven by the need to meet the requirements for professional title promotion and school mandates. In contrast, others (such as Teachers B and D) are more focused on self-improvement and professional growth. Additionally, some teachers (such as Teachers B and E) are motivated by the desire to enhance teaching quality. For these teachers, the development of SoTL is both a process of "self-development," where they seek to strengthen their professional identity through personal growth, and a demonstration of "responsibility to students," where they strive to improve their teaching skills to truly fulfill their role as educators.

According to Teacher D, his motivation to develop SoTL originated from his early career experiences, including participating in a series of competitions such as county-level speech contests and other teaching skills competitions. These experiences gradually ignited his aspirations and goals for the future. Over time, Teacher D realized that he could no longer simply replicate the teaching methods of others, as many rural teachers do, but instead needed to pursue higher goals and become a teacher who focuses more on research and leadership in education. This reflects his pursuit of self-development. Moreover, during his career, he encountered an exceptional mentor who had a profound influence on him, guiding him toward a higher level of teaching and academic research. In conclusion, the study reveals that while the initial motivations for developing SoTL may vary, the common thread among teachers is the desire for both personal growth and the betterment of their students. The process of enhancing these abilities is intertwined with the teachers' professional identity and responsibility, suggesting that fostering an environment that supports both teaching and academic research is crucial for the continued development of teachers. The findings underscore the importance of providing adequate support and resources, as well as mentorship opportunities, to help teachers navigate the challenges of balancing teaching and research while achieving their professional goals.

Secondly, the challenges faced by primary and secondary school teachers in developing their SoTL primarily include teaching pressures, time management difficulties, insufficient school support, and a lack of professional awareness. Specifically, teaching pressures arise from multiple sources: personal pressure on the teachers themselves, pressure from students and parents, pressure from the school, and societal pressure. These pressures not only make daily teaching burdensome but also leave teachers with little time and energy to further engage in academic research. Additionally, young teachers often lack clear career planning goals, which leads to an insufficient understanding of the importance of developing SoTL. Consequently, they may overlook the role these abilities play in their professional development and teaching effectiveness. These factors collectively hinder the growth and development of teachers' teaching and academic capabilities.

Thirdly, despite the numerous challenges faced in developing SoTL, as teachers gain more experience or as their sense of professional identity strengthens, they gradually recognize the importance of enhancing their abilities to better meet the challenges of teaching and academic work and to serve educational needs more effectively. Furthermore, the demands of professional title evaluations and career

advancement also motivate teachers to continually improve and develop their SoTL. To balance teaching and research, teachers often rely on strict time management and make use of fragmented time, prioritizing teaching tasks while participating in research activities without compromising teaching quality. This approach ensures that teaching quality remains unaffected while allowing teachers to continue their research endeavors. Additionally, support from schools and colleagues plays a crucial role in alleviating teachers' teaching burdens and providing research opportunities, enabling them to better balance the dual responsibilities of teaching and research. By integrating academic research with teaching practice, teachers can make both mutually reinforcing, which not only enhances the practical applicability of research but also improves teaching quality. Based on these findings, the significance of this study can be summarized in three points. First, through narrative inquiry, the study provides a deep understanding of how Chinese primary and secondary school teachers balance teaching and academic work and how they can better develop their SoTL.

This study aims to explore the motivations behind the development of teaching scholarship among primary and secondary school teachers in China, the challenges they face, and their experiences in balancing teaching and academic work. The study found that the motivations for developing teaching scholarship among these teachers are diverse. Some teachers are driven by the need for promotion and meeting school requirements, others seek personal growth and professional advancement, and some aim to enhance teaching quality to better fulfill their educational responsibilities. These motivations align with Boyer's (1990, 1996) emphasis on the diversity of teaching scholarship and its close relationship with both personal and professional development. Boyer argued that teaching scholarship is not only about contributing to academic research but also involves professional development in teaching practice, which is reflected in the teachers' focus on teaching quality and student learning outcomes.

The challenges teachers face in developing their teaching scholarship abilities, such as teaching pressure, time management difficulties, and lack of school support, are also discussed in the literature. For example, Kreber (2003, 2007) and Gurm (2009) noted that teachers often encounter time and resource constraints when balancing teaching and research work, especially younger teachers who may lack clear career planning and support, potentially underestimating the importance of teaching scholarship for their professional development. This study also found, as described by Clandinin (2022), that through narrative inquiry, teachers can gain a deeper understanding of their experiences in teaching and academic work, assigning new meanings to these experiences in the process. This aligns with the experiences of Teacher D in the study, who, influenced by competitions and mentors, gradually recognized the importance of teaching scholarship and began pursuing higher goals.

Additionally, the strategies employed by teachers to balance teaching and academic work, such as strict time management and support from schools, highlight the importance of organizational and environmental factors in the development of teachers' teaching scholarship abilities. Prosser (2008) emphasized the interactive relationship between teaching and research, noting that integrating academic research with teaching practice not only improves teaching quality but also enhances the practical value of research. This was validated in the study, where teachers

successfully improved their teaching quality and advanced their academic development by combining teaching with research work.

The results of this study underscore the critical role of society and schools in the professional development of teachers, particularly in supporting the development of their teaching scholarship abilities. Yang (2019) and Wang (2005) highlighted that teaching scholarship is not only an essential component of teachers' professional competencies but also an intrinsic requirement for their professional development. Therefore, this study suggests that policy formulation and implementation should place greater emphasis on enhancing the teaching scholarship abilities of primary and secondary school teachers by providing better support and resources, thereby stimulating their intrinsic motivation and promoting the sustained development of their teaching scholarship abilities.

Although this study reveals important findings through qualitative research methods, it is important to consider its limitations when generalizing these findings. Similar to the narrative inquiry methods proposed by Clandinin (2002) and Riessman (2015), the number of teachers involved in this study was limited, and they were concentrated in a specific region, which may limit the generalizability of the results. Future research should expand the sample size to include more regions and teachers from diverse backgrounds to gain a more comprehensive understanding of the development of teaching scholarship among primary and secondary school teachers.

By comparing and linking these findings with the literature, this study provides valuable insights for understanding and supporting the development of teaching scholarship among primary and secondary school teachers, offering useful implications for future educational policy and practice.

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