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Article

Understanding the Complexity of Teacher Professional Learning in the Context of China's "Double Reduction" Policy

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Abstract

The "Double Reduction" policy is a collection of systematic approaches to lessen the burden on pupils and increase the efficacy of school instruction that proposes additional requirements for enhancing teacher professional learning and teaching quality. After examining the prior literature on the "Double Reduction" policy and teacher professional development, this study conducted in-depth interviews with 15 elementary and secondary school teachers to comprehend the complexity of teacher learning. In this study, the grounded theory method was used to analyze how instructors learn through the interaction of personal and external factors. Individuals engage with the learning environment to acquire and reconstruct knowledge experiences that contribute to the growth of pupils, as demonstrated by the findings. Teacher professional learning differs from teacher professional development in that it consists of three fundamental dimensions: individual factors, external support systems, and contextual elements. Motivation, ideas regarding learning, and professional identity are personal aspects of teacher learning. In addition, the objective, motivation, organization, and evaluation within the context of the "Double Reduction" strategy influenced the professional development of teachers as contextual variables. External support systems, such as teacher learning communities, school-university partnerships, and information technology, connect individual and contextual aspects of the teacher professional learning model. The many parts within the three dimensions interact to construct the processes of teacher's professional development under the "Double Reduction" strategy, giving a research foundation for the theoretical analysis of improving teacher education.

Keywords

"Double Reduction" policy; professional teacher learning; professional development; grounded theory

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In recent decades, the necessity of improving school teaching, enhancing teacher quality, and encouraging student learning has increased the focus on teachers' professional development as one of the most critical means of achieving these objectives (Opfer & Pedder, 2011). In addition, the social need for evidence that teacher professional development programs benefit student outcomes are growing (Yoon et al., 2007). Teaching and Learning Survey International (TALIS) is a global program that examines how teacher knowledge influences student learning in eastern and western countries from an international perspective (OECD, 2017). The essential objective of education in a global setting is to promote and preserve human dignity and potential in connection to other people and the natural world (UNESCO, 2015). To realize the Education 2030 objectives, several Asian nations, particularly those with exceptional performance on the international academic assessment (PISA), are seeking a new ecology of education.

In July 2021, the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council issued the "Opinions on Further Reducing the Burden of Students' Homework and Reducing the Burden of Off-campus Tutoring for Compulsory Education Students" (henceforth referred to as "Double Reduction"), which entails a reduction in the total amount and duration of school homework, as well as measures to rein in private tutoring The "Double Reduction" program involves a series of systematic initiatives to alleviate the academic burden of pupils, assist families who cannot afford costly after-school tutoring, and provide children with time and space to develop holistically (Ma et al., 2021; Liu, 2021). In this context, as the primary implementers of the "Double Reduction" policy, Chinese primary and secondary school teachers will face professional challenges to achieve higher goals through continuous professional development, such as completing tiered teaching, assigning homework scientifically, enhancing the quality of classroom instruction, and meeting the diverse needs of students (Chu, 2021).

In the "Double Reduction" policy framework, this qualitative study aims to deepen comprehension of the complexity of teacher professional learning mechanisms. The replies and experiences offered by primary and secondary school teachers in the interview will be a crucial foundation for analyzing how they learn through the interaction between persons and working situations, ultimately enhancing the quality of school instruction.

2. Literature Review

The Policy of "Double Reduction"

Even though the "Double Reduction" policy has only been in effect for a short time, it has attracted an increasing number of academics interested in discussing its substance or implications. According to a survey of the literature, the available research on the "Double Reduction" policy focuses on after-school services, assignment design, classroom instruction, digital education resource provision, home-school cooperation, and management of out-of-school tutoring institutions.

First, primary and secondary school instructors are responsible for offering high-quality after-school services (e.g., homework assistance, interest clubs) to meet the developmental requirements of their students (Zhang, 2021). The "Double Reduction" strategy emphasizes that such after-school activities should not be mandatory but should respect students' intents and encourage them to pick the activities in which they wish to participate (Zhou, 2021). Regarding homework design, teachers must create core tasks relevant to students' qualities and learning styles. In this approach, differentiated education and after-school tutoring will test instructor competence (Chu, 2021). In the meantime, several academics have emphasized that effective education

should enable students to understand key elements and crucial nodes, which are useful for building bridges between students' knowledge and experiences and developing children's fundamental skills (Zhou & Fu, 2021). After implementing the "Double Reduction" strategy, classrooms have placed a greater emphasis on the supply of digital education materials. For example, Ke (2022) proposed the need to increase the availability of high-quality online learning resources, home-school cooperation resources, and intelligent homework tools to reduce regional resource inequality. According to Wang & He (2021), from the perspective of the home-school community, the limits of obligations between home and school are unclear due to the absence of specific regulatory direction, resulting in less effective cooperation. Although one of the primary goals of the "Double Reduction" strategy is to increase the management of private tutoring facilities, parental sentiments toward this reform are ambiguous. As indicated by Liu's work (2021), the demand for family participation in off-campus tutoring results from poor education. She also emphasized that minimizing the educational gap between schools and changing to competency-based instructional reform will go a long way toward fulfilling the needs of students and their families, reducing the need for students to participate in extracurricular tutoring programs.

According to prior research on the "Double Reduction" strategy, the empirical analysis of teachers, the primary policy practitioners, and stakeholders has shortcomings. Faced with the rigorous demands of education, teachers' professional ability will encounter more obstacles. According to Li (2021), the 'Double Reduction' strategy not only strives to minimize the number of time students spend on homework but also emphasizes teachers' efforts to increase their competency. Consequently, teachers must consistently improve their professional learning in the workplace to empower pupils to study in school.

The transformation from Teacher Professional Development to Teacher Professional Learning

According to research on school effectiveness, student achievement will depend greatly on the quality of instructors' instruction (Thoonen et al., 2011; Creemers, 1994; McEwan, 2015). Vermunt (2014) provides various evidence, from teacher professional development to student learning results, to support this position (see Figure 1). Teacher education and professional development programs commence the learning process that leads to student results. These learning objectives for teachers might be characterized as increased or modified knowledge, comprehension, practices, motivation, or emotions. Consequently, teacher teaching approaches stimulate student learning processes, resulting in increased or altered student knowledge, abilities, emotions, etc., as learning outcomes. Thus, knowledge accumulation, renewal, and sustainable learning become crucial to educational reform.

From the perspective of the theory of knowledge, there are two widely accepted metaphors for learning: a) the acquisition metaphor, in which learning is acquired through the transfer of existing knowledge, and b) the participation metaphor, in which the acquisition of knowledge requires the learner's active participation (Sfard, 1998; Engestrom, 2014). These two metaphors represent distinct learning paths, but both are predicated on the objectivist position that "knowledge" is an independently existing, fixed, transferable, or manageable good. Since the 1980s, several industrialized nations have established teacher professional development policies and training programs, such as workshops, university courses, case studies, school-based professional development, online conferences, and seminars to improve teacher quality (Wolf & Peele, 2019; Ingvarson et al., 2005; Guskey, 2002).

However, the concept of professional development, which is frequently questioned by academics, relates to an individual's or entity's growth. Instead, teachers must be able to grow professionally and become active learners (Easton, 2008; Fullan, 2007). Most of the time, specialists and educational administrations choose the subject of teacher professional development, but teachers frequently lack the right to participate or make

judgments. Due to limits imposed by universities, professional organizations, and the government, teachers must complete a lengthy education program to obtain expertise (Webster-Wright, 2010).

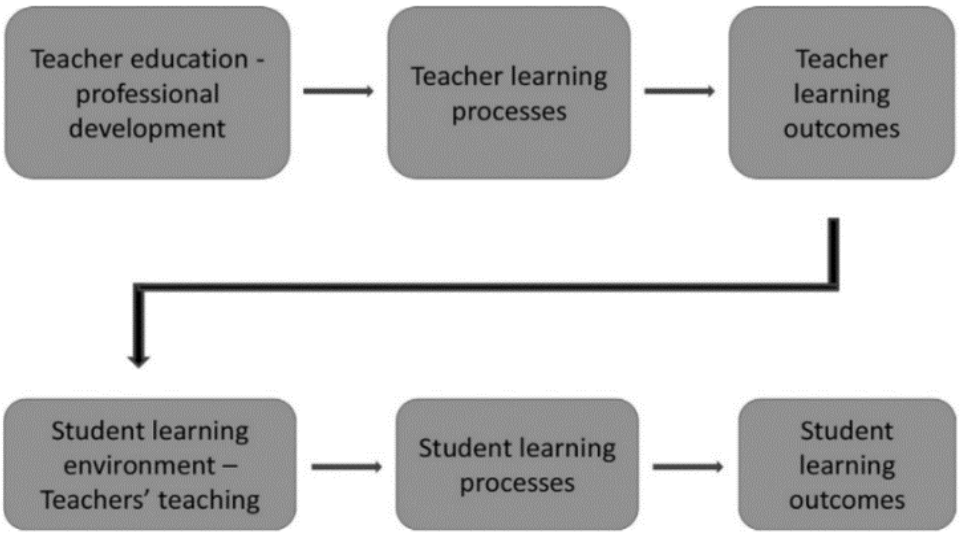

Fig.1 *A Chain of Evidence from Teacher Professional Development to Student Learning Outcomes.* (Vermunt, 2014)

In the context of teacher education, Liu (2016) argues that it is risky for experts to define "acceptable" knowledge and then transfer it to instructors who lack it. This is because it is easier to disregard the teachers' specialized, contextual, and practical knowledge. This is congruent with the findings of Chen (2013), who examined 11 Chinese cities and discovered a discrepancy between what teachers needed and what they received. They found that 35.9% of teachers desired pedagogy in professional development. Likewise, research on teacher professional development indicates that conventional teacher development programs are frequently deemed unproductive. In addition, teachers participate in learning primarily to "acquire" knowledge and are not thought to have the capacity or aptitude to "create" understanding (Clark et al., 2012). Although the desire to educate instructors with information and skills for professional development activities is admirable, these activities are insufficiently specific and relevant to classroom teaching and learning (Fullan, 2001).

In 1994, the UNESCO-organized World Conference on Lifelong Learning advocated that "lifelong education" be replaced by "lifelong learning" as the main notion for survival in the 21st century. Subsequently, teacher educators have steadily considered "professional learning" in various contexts (Webster-Wright, 2009; Yang, 2022). Adult education research has supported this transition from professional growth to professional learning. Some researchers have argued that teacher learning involves the self-directed discovery of "what is required" in certain settings (Merriam & Bierema, 2013; Knowles, 1970; Kelly, 2017). As a result, teacher learning is more independent and selective than teacher training, as the learning content is intimately tied to the challenges that instructors face in the classroom.

Teacher Professional Learning

In recent years, new perspectives on teacher learning have developed as research on adult learning and the teaching profession has intensified. Teachers are considered experts in self-reliance since they have the will and motivation to take the initiative to learn and possess specialized practical expertise

(Chen, 2003). Teacher professional learning, unlike the notion of professional development, should be active, self-initiated, and self-directed. Adult learners' professional learning is influenced by their educational views, prior knowledge, and organizational setting (Opfer & Pedder, 2011). Therefore, teacher professional development is frequently characterized by systematic, dynamic, and contextual practice embedding (Webster-Wright, 2009).

Timperley (2011) highlighted when discussing the power of professional learning that knowledge is a complex integration of individual, ethical, intellectual, and social dimensions. Learning can occur when an individual actively creates and has a new conception based on prior experience and contact with the external environment. As an earlier study has demonstrated (D. Clarke & Hollingsworth, 2002; Timperley & Alton-Lee, 2008), the available literature on basic conceptualizations of professional teacher learning fails to consider how learning is integrated with professional lives and working situations. At this moment, the social-cultural theory based on Vygotsky's first-generation activity theory suggests that both the subject (learner) and the object (knowledge) in the process of learning are changing (Engestrom, 2001). Considering the nature of professional learning, the researchers assume that the medium of the event will influence teachers' professional learning. Different school cultures will dictate what must be learned and how it must be learned (Apple, 2014).

The complexity of professional learning has led to the majority of the literature describing the idea as a diversity of learning activities in teachers' professional lives. Despite the academics' attempts to clarify fundamental issues, what is professional learning? Why and how do educators study? There is currently no consensus. In this sense, elementary and secondary school teachers' professional learning mechanisms will contribute to a future study on teacher learning.

3. Research Questions

The following research questions guided our study:

1. What factors are relevant to teachers' professional learning in the context of the "Double Reduction" policy?
2. How do primary and secondary teachers learn about the interaction between individuals and the working conditions?

4. Research design

Participants

As indicated previously, this research was conducted in China's elementary and secondary education systems. Eight male and six female educators from urban and rural schools constituted the fifteen interviewees. The target population associated with the topic of teacher professional development was selected using this method of sampling. To maintain the anonymity of the participants, this study anonymized and safeguarded their personal information. Five of the fifteen teachers taught in middle schools, while ten taught in primary schools. Seven teachers had less than five years of experience, four had more than twenty years of experience, and the remaining four had between five and twenty years of experience. Table 1 outlines the essential participant information.

Table 1. *Participants' information*

Code	Participants	Gender	School	Area	Other role in school
CER01	Teacher C	Male	E	Rural	Senior Leader
XEC02	Teacher X	Female	E	City	Director of Teaching Affair
SMC02	Teacher S	Female	M	City	Senior Leader
YER01	Teacher YI	Male	E	Rural	Leader for Class Preparation
ZMC01	Teacher ZI	Male	M	City	/
WEC02	Teacher WI	Female	E	City	/
LEC01	Teacher LI	Male	E	City	/
RER02	Teacher R	Female	E	Rural	/
YEC02	Teacher YII	Female	E	City	Vice principal
GEC01	Teacher G	Male	E	City	/
WMR01	Teacher WII	Male	M	Rural	/
ZMR01	Teacher ZII	Male	M	Rural	/
DER01	Teacher D	Female	E	Rural	/
WMC91	Teacher WIII	Male	M	City	Director of Teaching Affair
LER01	Teacher LII	Male	E	Rural	/

Note: Pseudonyms are used in this paper. (1) code consists of three English letters and one digit, which represents the school characteristics (type, geographical location) and gender, namely "01" is male and "02" is female. (2) school type includes elementary school (E) and middle school (M). (3) the school location where the participant works are located in the urban/city (C) or rural (R) area.

Material and Procedures

Individual, semi-structured interviews with fifteen elementary and secondary school teachers were used to acquire qualitative data for this study. The interviews were performed via a telephone call conducted online. Each interview was recorded, transcribed, and then translated into English from Chinese. This study's central concern is how teachers acquire knowledge in the "Double Reduction" policy setting in terms of internal and external interactions. Therefore, the interview questions were open-ended so that teachers could share their experiences and perspectives regarding their understanding of the "Double Reduction" policy and what they believe they need to learn. The external support they receive from their work environment concerning their professional development.

Applying grounded theory

The grounded theory (Strauss & Corbin, 1998) is an iterative, comparative, and participatory inductive technique of research (Charmaz, 2011). This research analyzed semi-structured interviews using a grounded theory approach. According to Talmy (2010), the interviewer-interviewee discourse is socially located and co-constructed. In other words, the perspective of the participants is contextualized. This study will decipher the emotions and behaviors of the participants in their respective circumstances by coding the material. A comparative and interactive examination of our interview data (axial coding) can assist us in creating a proposed model of the interaction processes by enhancing our understanding of professional

teacher learning in both individual and learning contexts. Consistent with Bryant's (2013) perspective, we conceptualize the theory as an explanation of the underlying data structure that allows for the potential of practice modification. In this perspective, the suggested model intends to contribute to understanding the role of individual elements and external assistance in teachers' participation in professional development under the "Double Reduction" policy.

Data Analysis

Interview transcriptions were analyzed using open coding, axial coding, and selective coding, building on Strauss and Corbin's (1998) work. During open coding, interview data were carefully reviewed, and conceptually comparable events were categorized regarding instructors' professional learning and external learning environment. For instance, 66 sub-categories formed, such as "instruction efficacy," "parental anxiety," and "decrease of written assignments." During axial coding, categories were refined further, and the necessary antecedents for the category's emergence were discovered. This study focused on the challenges and needs of teacher professional development. It generated 23 categories, such as "self-directed learning," "collective lesson preparation," and "family-school co-education," utilizing axial coding. During the process of selective coding, the previous two coding systems were organized, and eleven key categories were formed (see Table 2) to explain variations in the data, such as "teacher learning community" and "information technology." The example of coding is presented in Table 3.

Table 2. *Central dimensions and related categories*

Central dimension	Category	Sub-category
	Ability of situational teaching	School-based implementation Rural-urban differences
	Practical knowledge	Emphasis on classroom teaching Acquisition of practical experience
Personal factors	Beliefs on learning	Self-directed learning Student outlook
	Professional identity	Learning identity Self value
	Teacher learning community	Class assessment Collective preparation of lessons
External support system	School-university partnership	Lectures in secondary schools University training
	Information technology	Online learning Remote training
	Policy guidance	Meeting policy requirement Solving teaching problems
Contextual factors	Institutional design	Administration management Family-school co-education Community involvement
	Professional training	Fixed pattern Tendency of homogeneity
	External teaching evaluation	Summative evaluation Variation in assessment

Table 3. *Coding example*

Interview Data	Stage1 Open Coding	Stage 2 Axial Coding	Stage 3 Selective Coding
"Now, we have introduced a third party for our after-school service, which is divided into basic and quality-oriented service. From the social perceptive, it helps parents to reduce their stress. Teachers cannot only rely on self-awareness to learn, there must be a system and external pressure to step out of their comfort zone. The system has to stimulate them. Teachers do not always have internal factors for learning, and the incentive are not enough. So it needs to be driven and be able to serve as a model. The teacher can be stimulated only when he sees that there is a role model. With the incentive outside, it is also necessary to create conditions for teachers to be guided." (WMC01)	Introducing a third-party Institutional after-school services Institutionalization of the double reduction policy Anxiety of parents	Administration management Family-school co-education Community involvement	Institutionalized design

5. Results

This study involved in-depth interviews with fifteen elementary and secondary school educators. Based on the grounded theory, these data were categorized using an open coding system, followed by an axial coding system and a selective coding system. Consequently, teacher professional development under the "Double reduction" policy consists of three fundamental dimensions: personal variables, external support systems, and environmental elements.

Personal factors

According to the research, personal characteristics that influence teacher professional development include situational teaching skill, practical knowledge, views about learning, and professional identity.

The interviews revealed that teacher professional development aims to address challenges in the everyday teaching process. However, traditional professional development initiatives typically disregard the differences between urban and rural backgrounds. This necessitates that teachers do school-based research and validate existing knowledge and experiences before applying them to the current scenario. As a result of contextualizing the knowledge, professional learning activities can be tailored to the needs of schools and students.

"Our school is a rural institution. Students attending rural schools differ from those attending metropolitan schools. Typically, urban schools organize the lectures in which we take part. Rural students cannot accept the learning methods offered in the lectures. Hence they are unsuited for rural students. These learning strategies must be updated and adapted for rural kids. " (DER01)

Moreover, teacher professional development frequently stresses efficacy. Observing other instructors' classes would be good for the teacher's daily teaching work. On the other hand, teachers are required to acquire implicit practical knowledge rather than an explicit understanding of practices, which requires them to develop more advanced teaching experiences.

"Most rural instructors have much experience in the classroom. They encounter a variety of pupils and can deal with student issues that we cannot manage. I believe that they are extremely wealthy. Those rural educators should be invited to speak at several talks. It will be grounded on reality" (DER01)

Under the "Double Reduction" policy, teachers' views about learning to influence their enthusiasm for learning. The objective of teacher learning through the interview is to foster the growth of pupils. The learning activities should provide teachers sufficient space and time to facilitate individual learning. Further, teachers should have the correct learning beliefs to foster their students' holistic growth.

"I believe that knowledge must be grasped. The most significant aspect of expertise is the development of students in all areas, whether it be synthetic talents, competence, or wisdom. Knowledge acquisition is a process. Successful education endures after pupils graduate and forgets what they learned. " (ZMC01)

There is a paradox between a teacher's life, work, and learning. It is a practical strategy to understand the actual needs of teachers and progressively cultivate their conviction in learning, elucidating their own values, and finally stimulating their endogenous drive.

"Students will admire the teacher and have a stronger interest in learning if they are competent. Thus, the instructor will feel accomplished as some misbehaving pupils behave themselves in class. Students will refrain from mischief since they believe their teacher knows everything (ZMR01)

External support system

The teacher's professional learning is not only a matter for teachers themselves but requires an external learning environment with support from the school and society. By organizing the content of the interview, the result revealed that the external supportive system for professional teacher learning includes three core dimensions: the teacher learning community, the school-university partnership (SUP), and information technology.

Firstly, the teacher learning community is an effective learning platform for teachers' daily professional learning as it includes two forms: the collective preparation of lessons and class assessment. Most interview participants agreed that the school tries to systematize teacher learning by forming subject teams and teaching groups. In most cases, the teacher-learning community provides a place where teachers can brainstorm. By co-constructing lessons and sharing personal teaching experiences, teachers can break their limits and enhance learning effectiveness.

"After a class, an experienced teacher told me how to teach one part of the class better. According to his observation in my class, he supposed that there might be a problem in this part. It would be better to use his teaching method." (CER01)

The School-University Partnership (SUP) links university research and teaching in primary and secondary schools, realizing the unification of theory and practice and providing theoretical enhancement for professional teacher learning. Moreover, the content of lectures given by university teachers in secondary schools is often closely related to practical teaching. Such short training periods can help teachers acquire more advanced knowledge and technology, broaden their views, and promote their professional development.

"Our training, as an example, the technology presented by Professor Lin did not exist before. The technology renews quickly in all aspects. You can not stop learning. Teaching efficiency will be increased if you can master new technology or knowledge. So, you will have enough time to consider your professional development." (WMR01)

As teachers mentioned, information technology is powerful support for professional teacher learning in the information era. Teachers can effectively use the digital learning platform to acquire and apply knowledge in daily life. Meanwhile, remote training has been another effective way for teachers to learn.

"When I do the teaching design, I always watch some videos of famous teacher's courses in advance. I will learn how they design the lessons and then get some inspiration. By uniting our real situation. I will do the constructional design with some changes and innovations." (RER02)

Contextual factors

Considering the study result, the core dimension of teacher professional learning contextual factors involves four categories: policy guidance, institutional design, professional training, and external teaching evaluation.

The "Double Reduction" policy requires teachers to pay more attention to the learning situation in terms of educating students according to their natural ability, optimizing homework design, and improving the quality of teaching through tiered teaching and homework. As a teacher who is a director of the teaching affair noted:

"At the beginning of this semester, we asked teachers to improve the design of assignments. We assign optional and mandatory homework. At the same time, we have carried out a lot of manual and thinking-oriented homework, such as mind mapping, self-made newspaper, and letter cards, which are rich in learning content." (XEC02)

As the implementation of the double reduction policy progressed, the institutional design was gradually enhanced. Specifically, the education department established an inspection system, followed by a series of initiatives in schools and the introduction of third-party participation in after-school services. In this context, slacking off on studies of students has increased pressure on teachers and higher demands on teacher learning.

"The Double Reduction policy is to reduce the academic burden but not to reduce the quality. It puts us under more pressure, and teachers are more demanding in class. The amount of homework is much less, and the convenience that the outside can bring to the teacher disappears. So for teachers, there is a need for some professional learning development." (LEC01)

However, teacher learning faces the critical problem of "professional" training. Teachers' daily knowledge has become a fixed pattern that is a part of their work. As most teachers described, it is challenging to play the role of brainstorming in the collective preparation of lessons, which has already formed a teaching template and lacks innovation in thinking.

"We visit other teachers' classes, participate in lesson preparation, or attend lectures. These (activities) are going on every semester, once a week." (LEC01)

Similarly, another teacher who worked in a secondary school explained: "We prepared the lesson together, just using one lesson as an example, and then basically copied that pattern for teaching." (ZMR01)

In the context of the "Double Reduction" policy, students in the upper grades of secondary school still have great pressure on entrance examinations to high school. As teachers suggested, it is necessary to replace exam-oriented classrooms with a variety of assessment methods

"I think, in some schools or districts with better implementation of policy, the burden of students has indeed decreased, but there is no big change under the test-oriented evaluation system, and the pressure and competition for higher education still exist." (YEC02)

6. Model Construction and Discussion

After examining the first year of implementation of the "Double Reduction" policy, this study found that personal, external support networks, and contextual factors influence teacher professional development. At this stage, professional teacher learning facilitates the return of education to a new education ecosystem by continuously enhancing the quality of teaching and learning through the interaction between the individual and the learning environment. This study develops a model of the internal and external interactions of professional teacher learning (see Figure 2), which is congruent with findings from earlier studies of teacher learning. According to Davis et al. (2006), the relationship between teacher learning and the subject, collective, and school system is strong. Teacher professional development is a complex system consisting of three subsystems: instructors, schools, and learning activities. Each component of the subsystem interacts with one another, influencing teachers' learning styles.

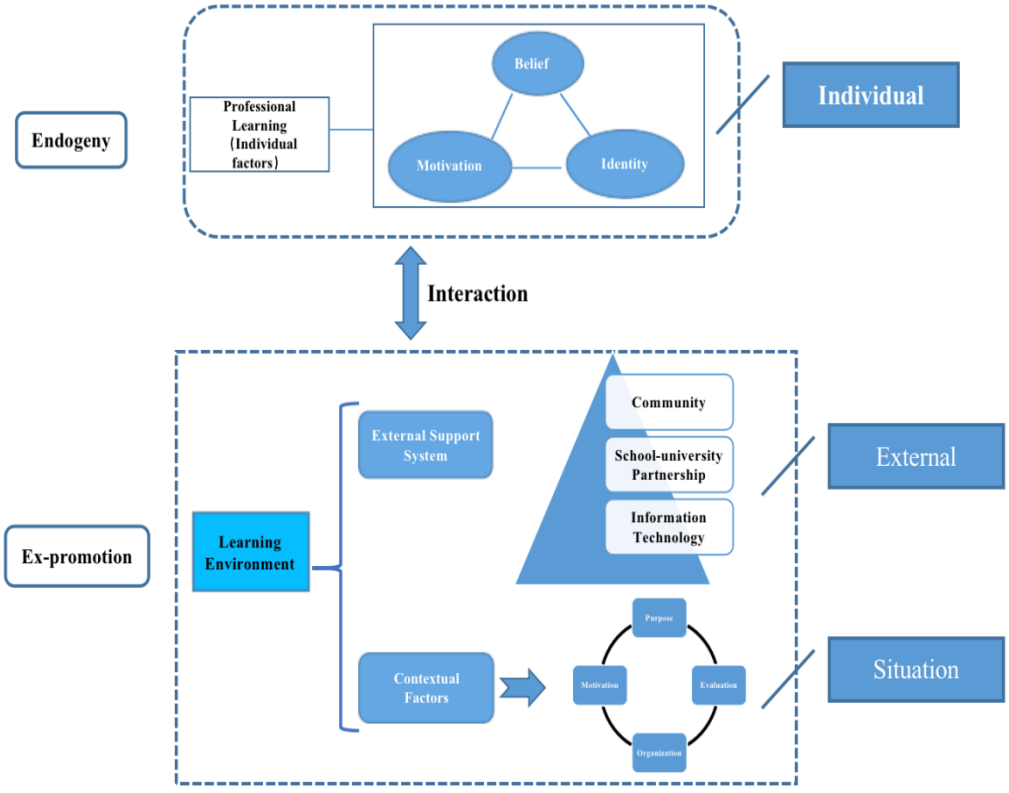

Fig. 2 *Teacher professional learning model*

Individual factors are the internal motivation of teachers' professional learning

Previous research has demonstrated that human behavior is influenced by internal demands and the external environment, which are complementary (Xu, 2010). Following the "Double Reduction" policy, elementary and secondary schools have implemented several teacher training programs. Teacher professional

development should focus on the internal requirements of instructors, encourage the endogenous motivation of teachers' learning, and emphasize the everyday character of understanding and the endogenous nature of knowledge (Chen & Liu, 2016). Learning motivation, learning beliefs, and professional identity are the individual variables that affect teacher professional development.

The typical teacher training may overlook the disparities between schools in urban and rural locations, requiring instructors to "de-contextualize" the knowledge after participating in the training and then "re-contextualize" the ability according to the school setting (Pedder et al., 2005). (Chen et al.,2014). In addition, teachers tend to place a premium on extended internal and interpersonal learning and conduct school-based learning to meet their teaching demands. Therefore, enhancing situational competence and obtaining practical knowledge from the teachers' learning incentive. Improving the quality of the classroom requires fostering teachers' passion for continual learning and motivating students to learn. Teachers' beliefs significantly influence their behavior (Jan D et al., 2011). The objective of teacher learning is to foster student growth, which should be centered on this perspective. Following the "Double Reduction" strategy, teacher professional development should provide a conducive learning atmosphere, guarantee sufficient time for teachers, and assist them in gaining a deeper understanding of learning and becoming fully autonomous students. It is also vital to develop teachers' professional identity to see the importance of learning and the teaching profession, i.e., the role of learning in their everyday teaching and professional satisfaction.

Context is the determinant of professional teacher learning

Teacher professional learning based on teaching scenarios can increase the efficacy of instructors' learning, boost students' academic achievement, and contribute to the growth of teaching work. Richter (2019) notes in his research that several motivations influence teacher professional learning. These motivations significantly impact the effectiveness of teachers' learning and the quality of the classroom. In addition, Wilson et al. (2007) stress that teacher learning is a dynamic process that must be evaluated from a growth standpoint. Situational factors relating to the aim, motivation, organization, evaluation, and other components of teacher professional learning influence teacher professional learning. To better enhance professional teacher learning, we must create the ideal system for the growth of professional teacher learning.

Regarding the goal of teacher professional development, it is required to increase the guidance of national policies regarding the direction of teacher learning to promote student service further. In addition, teacher professional development emphasizes application and practicality. Instructors can generate knowledge that can be used to solve teaching-related issues. External reinforcement, such as praise, reward, or punishment, can improve instructors' motivation and inherent desire to learn.

As the model demonstrates, for the external organization, educational administrative departments or schools should also timely remind teachers to refresh their knowledge and encourage their own learning motivation. Training classes are an essential supplement for putting teachers' knowledge into practice. In evaluating teachers' professional development, inflexible evaluation systems should be dismantled and replaced with defined scientific criteria. Differentiated evaluations for various groups of teachers should be a goal of evaluation approaches that aim to foster teacher learning. Education development is impossible without a high-quality teaching force, which requires instructors to continue their education. Therefore, paying attention to and developing a solid system of professional development for instructors is vital.

External support system is a bridge connecting personal factors and contextual factors

In addition to internal considerations, the external support system impacts teacher professional development. Wells (2013) asserted that support and tight accountability within a school (time and autonomy) and outside the school (expert counsel) influence teacher professional development. Therefore, a proper platform mechanism for teachers' professional learning " to be able to" learn should be made available. External guarantee systems for teacher professional development include means and instruments such as teacher learning communities, school-university partnerships, and technological platforms. Various types of educational activities still occupy illogical and inconsistent locations. How to construct a development mechanism suited to teacher professional learning requirements to increase the external support system's ongoing optimization. In terms of the teacher learning community, to give full play to the community of reflection on communication, brainstorming, mutual discussion, problem-solving, and other functions, with the increase in knowledge, knowledge capacity is becoming more and more limited to teachers only in the collective communication, workplace, to absorb useful knowledge composition, for the self, to students' needs.

Teacher cooperation emphasizes the creation of a platform for communication and mutual aid and places a premium on teachers' capacity to work together. The National Committee on Teacher Professional Teaching Standards uses instructors' capacity for cooperative learning as the primary indicator of teacher standards. It suggests that "teachers ought to be members of the learning community." Teachers' collaborative learning is an essential component of their professional development.

Under the "Double Reduction" policy, information technology is an essential tool for enhancing the professional development of teachers. As Internet technology continues to gain popularity, it is crucial to investigate and optimize teachers' professional development within information technology. Information technology is utilized to assist instructors in developing specific professional learning plans and improving their learning efficiency, taking into account the unique learning characteristics of each teacher. Moreover, by utilizing the Internet's accessibility, instructors can update their knowledge at any time and location, enhancing their professional competency consistently.

7. Conclusion and Limitation of the Study

Through the lens of grounded theory, the findings of this study have implications for the development of a model for teachers' professional learning in the context of the "Double Reduction" policy, which integrates three core dimensions: personal factors, external support system, and contextual factors. The in-depth interviews with fifteen teachers from elementary and secondary schools in rural and urban areas revealed the viewpoints of teachers on professional development and how learning is entrenched in their professional life and working environments. Many participants cited enhancing situational teaching skills and acquiring practical information as their primary learning motivations. However, the content of traditional teacher training consists primarily of abstract, broad, and context-free theoretical knowledge, which frequently ignores the distinctions between urban and rural environments and is incapable of addressing actual classroom difficulties. Our research demonstrates that knowing teachers' needs and offering external support (community, university-school cooperation, and information technology) promotes instructors' active learning engagement.

Consistent with earlier research, the model demonstrates that contextual factors influence teacher learning and professional development. The "Double Reduction" policy directs teachers to prioritize self-directed

learning while addressing kids' holistic development needs. It will provide sufficient space for instructors to develop and promote their inner drive to continue learning through institutional design. In addition, the evaluation system of scientific standards in the new period will evaluate instructors' competency from numerous aspects to preserve teachers' ability to break the set pattern and "create" knowledge.

This study's use of online telephone interviews to acquire data is restricted. Due to the geographical distance, the interviewer's facial expressions could not be analyzed as evidence during the interview. In the meantime, individuals' comments may have been influenced by social desirability, restricting their candor.

There is a need for additional research on instructors' perceptions of academic learning in different institutions utilizing alternative approaches. Further research could analyze the theoretical model of professional teacher learning via the lens of a case study that addresses teacher educators' concerns and enhances teachers' capacity in their positions.

References

Apple, M. W. (2014). *Official knowledge: Democratic education in a conservative age*. Routledge. https://doi.org/10.4324/9780203814383

Bryant, A. (2013). The grounded theory method. In A. A. Trainor & E. Graue (Eds.), *Reviewing qualitative research in the social sciences* (pp. 108-124). New York: Routledge.

Charmaz, K. (2011). Grounded theory methods in social justice research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research*. Thousand Oaks, CA: Sage.

Chen, L., & Liu, Y. (2016). Training to learning: The strategies and path of teacher's professional development supported by technology. *China Educational Technology,* (04), 113-119.

Chen, X. M. (2003). Practical knowledge: the knowledge base for teachers' professional development. *Peking University Education Review, 1,* 104-112.

Chen, X. M. (2013). From teacher "professional development" to "teacher professional learning". *Research in Educational Development, 8,* 1-7.

Chen, X. M., & Zhang, Y. R. (2014). Why teacher professional development and learning has become "school-based". *Tsinghua Journal of Education, 35*(1), 36-43.

Chu, Z. H. (2021). "Double Reduction" policy requires commitment and capacity building of teachers. *Teacher's Journal, 9,* 6-10.

Clark, R., Livingstone, D., & Smaller, H. (2012). *Teacher learning and power in the knowledge society* (Vol. 5). Springer Science & Business Media. https://doi.org/10.1007/978-94-6091-973-2

Clarke, D., & Hollingsworth, H. (2002). Elaborating a model of teacher professional growth. *Teaching and teacher education, 18*(8), 947-967. https://doi.org/10.1016/S0742-051X(02)00053-7

Creemers, B. M. (1994). *The effective classroom*. London: Cassell.

Davis, B., & Sumara, D. (2014). *Complexity and education: Inquiries into learning, teaching, and research*. Routledge. https://doi.org/10.4324/9780203764015

Easton, L. B. (2008). From professional development to professional learning. *Phi delta kappan, 89*(10), 755-761. https://doi.org/10.1177/003172170808901014

Engeström, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of education and work, 14*(1), 133-156. https://www.tandfonline.com/doi/abs/10.1080/13639080020028747

Engeström, Y. (2014). Activity theory and learning at work. In *Tätigkeit-Aneignung-Bildung* (pp. 67-96). Springer. https://doi.org/10.1007/978-3-658-02120-7_3

Fullan, M. (2001). *The new meaning of educational change*. Routledge. https://michaelfullan.ca/books/new-meaning-educational-change/

Fullan, M. (2007). Change the terms for teacher learning. *The Learning Professional, 28*(3), 35-36. https://www.proquest.com/openview/bd8bc2338e4b16812a90e9516585faf2

Guskey, T. R. (2002). Professional development and teacher change. *Teachers and teaching, 8*(3), 381-391. https://doi.org/10.1080/135406002100000512

Ingvarson, L., Meiers, M., & Beavis, A. (2005). Factors affecting the impact of professional development programs on teachers' knowledge, practice, student outcomes & efficacy. *Education policy analysis archives, 13*(10), 1-28. https://doi.org/10.14507/epaa.v13n10.2005

Kelly, J. (2017). Professional learning and adult learning theory: A connection. *Northwest Journal of Teacher Education, 12*(2), 1-15. https://doi.org/10.15760/nwjte.2017.12.2.4

Knowles, M. S. (1970). *The Modern Practice of Adult Education*. New York: Association Press. https://www.voced.edu.au/content/ngv:2991

Li, X. C. (2021). *How teachers can deal with the "double minus" challenge?* China Education daily. http://paper.jyb.cn/zgjyb/html/2021-09/13/content_599215.htm?div=-1

Liu, J. Y. (2021). Motivations for families' demand for out-of-school training and implications for the implementation of the "Double Reduction" policy. *Global Education, 11,* 85-98.

Liu, S. N. (2016). *A study on the factors influencing teachers' professional learning and their mechanisms of action.* (doctoral thesis). Shanghai: East China Normal University.

McEwan, P. J. (2015). Improving learning in primary schools of developing countries: A meta-analysis of randomized experiments. *Review of Educational Research, 85*(3), 353-394. https://doi.org/10.3102/0034654314553127

Merriam, S. B., & Bierema, L. L. (2013). *Adult learning: Linking theory and practice.* CA: John Wiley & Sons.

OECD. (2017). *Empowering and enabling teachers to improve equity and outcomes for all*. Paris: OECD Publishing. https://www.oecd.org/education/empowering-and-enabling-teachers-to-improve-equity-and-outcomes-for-all-9789264273238-en.htm

Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of educational research, 81*(3), 376-407. https://doi.org/10.3102/0034654311413609

Pedder, D., James, M., & MacBeath, J. (2005). How teachers value and practise professional learning. *Research Papers in Education, 20*(3), 209–243. https://doi.org/10.1080/02671520500192985

Richter, D., Kleinknecht, M., & Gröschner, A. (2019). What motivates teachers to participate in professional development? An empirical investigation of motivational orientations and the uptake of formal learning opportunities. *Teaching and Teacher Education, 86,* 1–10. https://doi.org/10.1016/j.tate.2019.102929

Sfard, A. (1998). On two metaphors for learning and the dangers of choosing just one. *Educational researcher, 27*(2), 4-13. https://doi.org/10.3102/0013189X027002004

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory.* Thousand Oaks, CA: Sage.

Talmy, S. (2010). Qualitative interviews in applied linguistics: from research instrument to social practice. *Annual Review of Applied Linguistics, 30,* 128-148. https://doi.org/10.1017/S0267190510000085

Thoonen, E. E., Sleegers, P. J., Oort, F. J., Peetsma, T. T., & Geijsel, F. P. (2011). How to improve teaching practices: The role of teacher motivation, organizational factors, and leadership practices. *Educational administration quarterly, 47*(3), 496-536. https://doi.org/10.1177/0013161X11400185

Timperley, H. (2011). *EBOOK: Realizing the Power of Professional Learning.* London: McGraw-Hill Education. https://www.kobo.com/ie/en/ebook/realizing-the-power-of-professional-learning

Timperley, H., & Alton-Lee, A. (2008). Reframing teacher professional learning: An alternative policy approach to strengthening valued outcomes for diverse learners. *Review of Research in Education, 32,* 328–369. https://doi.org/10.3102/0091732X07308968

UNESCO., & Bokova, I. (2015). *Rethinking education: Towards a global common good?*. Paris: UNESCO Publishing. https://unevoc.unesco.org/e-forum/RethinkingEducation.pdf

Vermunt, J. D. (2014). Teacher learning and professional development. In *Teachers' professional development* (pp. 79-95). Brill. https://doi.org/10.1007/978-94-6209-536-6_6

Vermunt, J. D., & Endedijk, M. D. (2011). Patterns in teacher learning in different phases of the professional career. *Learning and individual differences, 21*(3), 294-302. https://doi.org/10.1016/j.lindif.2010.11.019

Wang, J. J., He, Y. M. (2021). Problems and strategies of home-school co-education in the context of "Double Reduction" policy. *Education Science Forum, 34,* 77-80.

Webster-Wright, A. (2009). Reframing professional development through understanding authentic professional learning. *Review of educational research, 79*(2), 702-739. https://doi.org/10.3102/0034654308330970

Webster-Wright, A. (2010). Authentic professional learning. In *Authentic Professional Learning* (pp. 107-142). Springer, Dordrecht. https://doi.org/10.1007/978-90-481-3947-7_5

Wilson, E., & Demetriou, H. (2007). New teacher learning: substantive knowledge and contextual factors. *The Curriculum Journal, 18*(3), 213–229. https://doi.org/10.1080/09585170701589710

Wolf, S., & Peele, M. E. (2019). Examining sustained impacts of two teacher professional development programs on professional well-being and classroom practices. *Teaching and Teacher Education, 86,* 102873. https://doi.org/10.1016/j.tate.2019.07.003

Xu, X. Y. (2010). *A study of Chinese households' investment behaviour in higher education.* Beijing: Tsinghua University Press.

Yang, Y. D. (2022). Teacher Learning: A View of Teacher Education in the Context of Educational Modernization. *Teacher Development Research, 1,* 37-44.

Yoon, K. S., Duncan, T., Lee, S. W. Y., Scarloss, B., & Shapley, K. L. (2007). Reviewing the evidence on how teacher professional development affects student achievement. issues & answers. rel 2007-no. 033. *Regional Educational Laboratory Southwest (NJ1).* https://gtlcenter.org/sites/default/files/docs/pa/4_PDResearchPolicyAction/ReviewingTheEvidence.pdf

Zhang, Z. G. (2009). A Comparison of the Four National Professional Standards for Teachers in the United States and Their Implications for China. *Studies in Foreign Education, 10*, 34-38.

Zhang, Z. Y. (2021). Restructuring and governance of the public education system in the context of "Double Reduction" policy. *Journal of The Chinese Society of Education, 9*, 26-49.

Zhou, Q. (2021). An study of detailed after-school service. *People's Education, 22*, 8.

Zhou, X., & Fu, J. L. (2021). How to achieve the effective of classroom teaching in the context of "Double Reduction" policy?. *Journal of The Chinese Society of Education, 12*, 1-5.