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Working Situation and Research Willingness: A Case of Primary School Teachers in The Southeast of China

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Abstrak

Based on the pursuit of research-oriented teachers, this study temped to understand whether school teachers have the time, willingness, and demands to conduct research while teaching. A qualitative survey was conducted among primary school mathematics teachers in southern Fujian province, the Southeast of China, through Questionnaires Star, and 102 texts were obtained. The survey found that primary school mathematics teachers' average daily work time in the sample was about 10 hours. The work contents were cumbersome and diverse, including rigid and semi-rigid tasks, and a social control mode of short-term responsibility with limited personal autonomy was found. The lesson preparation adopted the modification and imitation mode, and the classroom teaching conducted preset adjustment orientation. The research awareness and innovation ability of lesson preparation and teaching were insufficient, but the overall willingness to do research was very high. Teaching-based empirical research was their favorite, aiming at improving personal, professional rank, and student achievement. The reasons for not wanting to do research were mainly busy work, lack of theoretical literacy, and expecting mentors to lead or team up with famous teachers. As such, some recommendations were put forward.

Keywords: primary school teachers, research willingness, working situation.

INTRODUCTION

With the call for research-oriented teachers, full-time teachers in primary and secondary schools on China's mainland are adding a new task of becoming a researcher under the traditional work of teaching and educating children (Fan & Liu, 2017). The school teachers' research is different from that of academia. Action research based on daily work is the most suitable way (Chen, 2019) to improve

teaching and form reflective and critical practical knowledge. This work empowerment profoundly reflects traditional teachers' dependence on the subject content (Wang, 2003). It appeals to teachers' innovative consciousness and creativity in the knowledge economy and information age. Research-oriented teachers respond to the wave of education reforms surging worldwide since the 21st century. Both curriculum development and teaching reform regard on-site teachers as the backbone of school education innovation, hoping that teachers' teaching reform can reflect the needs of education reform and social development.

Since 2016, the teachers' evaluation system reform has been implemented across China's mainland. Teachers'ranks in primary and secondary schools have been evaluated from the aspects of teaching, research, and public service. It is thought that teaching and research can be unified to achieve the goal of research-oriented teachers. However, there is little research on the situation of school teachers after the implementation of the teacher evaluation system. Therefore, only by profoundly understanding the actual working situation and research willingness from the perspective of on-site teachers can provide conditions and foundations for becoming research-oriented teachers and enable practical growth of research-oriented teachers.

Based on the teacher's professional development standards established by the American Committee of Mathematics Teachers to meet the needs of math teaching reform, Meagher(2011) investigated the relationship between the characteristics of effective professional development, teachers' job satisfaction, and teachers' working conditions. The results showed that teachers' professional development was significantly related to teachers' working conditions.

Skalvik and Skaalvik (2017) highlighted that time pressure was the most important predictor of emotional exhaustion for teachers in grades 1-13 in Norway. The more work teachers did in a limited time, the more emotional exhaustion they would lead to (Skalvik and Skaalvik, 2017). However, if they managed their time successfully, they could also achieve a balance between workload and time demand (Goodale, 2011). Robert et al. (1999) divided teachers' time into contractual working time, face time at the workplace, work invasiveness, housework time, and total time, but the work content corresponding to work time and personal time was not addressed in these studies.

Existing research on teachers' work in China mainland mostly used quantitative methods to investigate teachers' job satisfaction or burnout from gender, qualifications, working hours, work tasks, working environment, etc. Especially, working hours were used as explicit indicators to point out the negative effects of emotional exhaustion caused by job burnout or job satisfaction, sense of value acquisition, and school innovation. Huang, Zhao & Sun (2019) took the statutory working hours, total working hours, and net teaching hours of primary and

secondary school teachers in OECD countries as a reference. The statutory working hours and total working hours of school teachers in China mainland were much more than the net teaching time. Gai and Li (2020) also found that school teachers had a high workload and long working hours, and the work contents were cumbersome.

Although the above studies potentially showed that teachers' job satisfaction (burnout) and sense of value were related to job content and working hours. Teachers' job contents were often only a one-dimensional or single potential variable for investigation, and there was little empirical research on teachers' daily work contents and research willingness. Only when we have a clear understanding of the actual day-to-day work of teachers and the corresponding time required can we have a clear understanding of the opportunities brought by such a working environment to teacher research. For school teachers who have always focused on teaching, research seems unnecessary. Therefore, taking the daily work of primary and secondary school teachers as a window to understand and analyze the arrangement of the work related to teaching and research on the worksheet is the premise of promoting teacher research and school teaching innovation.

Existed surveys showed that school teachers in China's mainland had long working hours and heavy tasks, so do they have time to research? Are they willing to do research? Based on the questions, this paper used primary school maths teachers in the south of Fujian province, the Southeast of China mainland, as a case aimed at whether school teachers have the time and willingness to study while teaching.

The specific objectives of this study are: to investigate the relationship between the daily work perceived by primary school math teachers and the time allocation in this situation. To understand the current professional development activities and analyze the research space and research willingness for teachers.

METHODOLOGY

A mailed questionnaire or a web-based survey containing open-ended questions are common sources of qualitative research, and anonymous texts can produce more open disclosures(Charmaz, 2009). This study adopted a qualitative method with a semi-open question network survey as the main instrument to collect data, supplemented by group-focused interviews to verify and confirm the survey results. The questions investigated were as follows:

1) Please describe how you spend a typical day at school and home (such as how long you usually spend doing things at school and how long you spend doing work-related stuff at home).
2) Please describe in detail how you prepare lessons and teach classes.

3) What activities have you participated in teachers' professional development in the last two years? (It can be discussed from learning, training, teaching research, and competition)
4) What do you think about the above activities? What do you like and dislike?
5) Do you want to do research? What kind of research do you want to do if you are going to do research?
6) Is there anything you want to share?

An online survey was administered in May 2021 to investigate in-service public primary school math teachers' working situation and research willingness in the South of Fujian Province in China mainland. The questionnaires were distributed through Questionnaire Star, an online survey platform. When the number of texts reached 80, it was found that the information began to repeat, but there was a slight imbalance in seniority. When there were 102 texts, no new important topics appeared, and the news was considered saturated (Charmaz, 2009), so ended the survey.

The basic information of the participants was as follows (see Table 1): male teachers accounted for about 20%, and female teachers accounted for about 80%. The degree of education was mainly undergraduates, followed by junior college, and the proportion of graduate students was the least, only 2%. 70% of the participants came from urban areas and 30% from towns. 92% wanted to do research, and 8% did not want to do research. In the teaching experience, there was a fault phenomenon of 11-15 years.

Table 1

List of participants' information

Participant information		numbers	Proportion (%)
gender	man	20	20
	woman	82	80
Teaching experience (years)	1-3	19	18
	4-10	25	25
	11-15[1]	2	2
	16-25	38	37

[1] Note: Primary school mathematics teachers with 11-15 years of teaching experience are missing in the survey (only two). According to the interview, it is mainly due to the transformation of normal education since 2005, which leads to the decrease of teachers recruitment in schools at this stage.

	More than 26 years	17	70
School location	urban district	71	70
	township	31	30
academic degree	master	2	2
	bachelor	80	78
	Associate degree	20	20
willingness	yes	93	92
	no	9	8

Source: personal document

The group-focused interview was conducted on one afternoon in July 2021 in a tea house, and the time lasted 4 hours. There were seven teachers interviewed, which was a project team. Of them were three teachers with 1-3 years of teaching experience, two teachers with 4-10 years, 0 teachers with 11-15 years, and two teachers with 16-25 years of teaching experience. The teaching experience structure of panelists was consistent with that of the survey participants. The interview was based on analyzing five dimensions: daily work, lesson preparation and teaching, professional activities and demands, research willingness, and difficulties or expectations.

Data analysis was similar to using what Thomas (2006) called thematic coding inductive analysis, including reading texts in detail, identifying topics related to research goals according to dimensions, reducing repetition and redundant coding, and building categories. The inductive analysis carefully analyzes issues and inter-topic relationships from data and develops and revises hypotheses based on the data (Allen, Butler-Mader, & Smith, 2010).

When analyzing qualitative data, we should recognize the link and vulnerability between data(Charmaz, 2009). This study used six questions to collect data from five dimensions. Each question had a thematic tendency but contrasted with each other. Therefore, the researcher (also the author) read through the 102 full texts and then read the statistics by question items, paying particular attention to the statements that teachers described or implied that they did not want to do research or want to do research. After the text analysis was completed, the survey results were interviewed and confirmed by a group interview to ensure the reliability and validity of the analysis results.

In the data analysis process, a triangle test was used to ensure the reliability and validity of the research. Through analysis, comparison, and induction within and

between each text, the researcher verified the consistency of the analysis results. In addition, the researcher conducted group-focused interviews based on online surveys to ensure the consistency and credibility of the data. Finally, the findings of this study were explained and verified by the results of other studies.

Only 102 electronic texts of primary school maths teachers from three prefecture-level areas in one province on China's mainland were selected as research data, which may affect the reliability and validity of the research. Similarly, this study relied on teachers' self-reporting in the region to understand the teachers' daily work, lesson preparation, and research willingness and lacked on-the-spot investigation and observation. Future research needs in-depth research in multi-regions and multi-disciplines.

RESULTS

1. An overview of teachers' work through task and time perception

Except for at least 12 classes (one class lasts 40 minutes) per week, primary school maths teachers perceived their other work as including lesson preparation, homework correction, student aiding, budget issues, teaching research, and self-improvement. Such as training, competition, reading educational journals and Chinese National Knowledge Infrastructure (CNKI), writing papers, etc. Working at home included preparing lessons, correcting test papers, contacting parents, and self-improvement. The teachers usually spent 9-10 hours in school and 1-2 hours at home and sometimes needed to use weekends. In this way, the average work-related time per day was about 10-11 hours, 2-3 hours longer than the 8 hours for civil servants. The following was a daily description of the work of a primary school math teacher who was also a headteacher. This daily work from morning to afternoon was described by teachers as a cyclic pattern of breakpoint and continuation, in line with the school curriculum.

Morning Reading or class tutoring at 7:40 a.m., take students to do morning exercises at 8:00 a.m. and have two math classes at 8:30-10:00 a.m. From 10: 10 to 11: 40, first check and reply to the school work and parent information, which takes about one class time. And then correct homework. Wait for the students to have lunch after school at noon and go back to the office at about 12:20 to continue correcting homework. If there is no class in the afternoon, take a lunch break and continue to update tasks in the afternoon. If there is a class in the afternoon, do not take a lunch break and finish correcting homework at noon. There are two afternoons having classes and two afternoons attending group activities each week. Generally, I will complete the day's task till the second lesson in the afternoon, and in the third lesson, I sit and rest and reply to parents' messages, giving feedback on the children's situation that day.

Robert et al. (1999) surveyed primary school teachers in four metropolitan cities in the United States. They found that the contracted working hours were 6.5 hours per day on average, 8.26 hours of regular working hours at school, and 10.28 hours of total working hours per day with some temporary tasks, nearly 4 hours more than contracted time. Clark (2010) also found that to meet the requirements of standardized examinations and effectively implement the curriculum reform, many teachers in the United States worked longer than the contracted time.

Regarding the relationship between tasks and time, teaching and research activities, homework correcting, student tutoring, and budget issues need to be handled at school. The required time took up about 5 hours a day on average, which was the tough working time at school. The remaining things are flexible, such as parent communication, lesson preparation, competition preparation, and reading journals and books.

Budget issues will be prioritized during the flexible time because this kind of task is usually urgent temporarily arranged by superiors. Preparing lessons and communicating with parents, especially preparing lessons, would be done by teachers in the least critical time. As for self-improvement, it would appear in a state of "indulgence" over time. Therefore, it is no surprise that teachers often prepare lessons at home. Taking work home is also common in other countries due to limited time (Creswell, 2013). Hargreaves (1991) argued that if survival means conforming to a mode of social control of short-term responsibility, teachers may delay caring for their identity as a person or teacher, prioritizing externally imposed principles as a worthwhile behavior over reflection on personal growth.

After analyzing the first dimension, the researcher found that the primary school math teacher's work was as diverse and trivial as the literature said, and there was not much free time left. In this way, the lesson preparation did not appear in the priority event under the time squeeze of the priority of the work arrangement. So, how did teachers prepare lessons and teach at such a tight time? Is the quality of lesson preparation and teaching guaranteed? The data to look for in the next problem analysis.

2. Lesson preparation and teaching

Compared with other tasks, preparing lessons is the most controllable event for teachers. The daily variety of trivial heavy duties and the limited time pressure left them with little time and energy to adequately prepare lessons. Most participants used the spare time of the previous day to prepare for the next day's class, and the preparation time was about 1-2 hours. A few participants just "*flipped through the textbooks*" before entering the classroom. Generally, lesson preparation was integrated and modified with the help of reference books and networks, combined with their abilities and students' learning conditions. There were also

cases of unit preparation and group preparation. The results of lesson preparation were mainly PowerPoint (PPT) or teaching plan and blackboard designs. View whiteboard or micro-video were also mentioned. Shao and Zhang (2019) found that some teachers were not prepared sufficiently, took less time, and relied on online teaching design. The participants in this study performed similarly, which may be caused by inertia or lack of time and ability.

> I often use the spare time of the previous day to prepare for tomorrow's class, take the form of unit lesson preparation, integrate the overlapping teaching contents, select suitable materials that can be used for multiple purposes, and present them through PPT.
>
> 1. Look through the contents of the mathematics book and correspondingly look through the teaching reference book to understand the teaching objectives; 2. Check the existed high-quality teaching design and appropriately change or add my ideas; 3. Modify the PPT content, match the new teaching design, and be familiar with the PPT process.

The materials referenced for lesson preparation were mainly teachers' books, electronic teaching plans or PPTs, or favorite teaching videos through Baidu. The CNKI and teaching journals mentioned in the previous did not appear. Compared with teaching journals and CNKI, which represent the latest ideas and research results and need to be transformed into practice, the more direct use of Baidu resources would make lesson preparation less time-consuming and easier, were the first choice for participants. The actions of preparing lessons were "looking" and "reading" (such as viewing, browsing, searching, collecting), and few teachers used research-related words such as comparison, analysis, understanding, and questioning. However, one participant wrote, "*preparing for competition is time-consuming and labor-intensive, and there are often many conflicting ideas in the integration process that are difficult to choose*." The different attitudes showed that preparing "good lessons" is time-consuming and requires research.

The imitative and integrated lesson preparation mode had two sides to teachers' professional development. On the one side, learning from a reference can help teachers' professional development. Still, at the same time, if there is only imitation without innovation, it would lead to behavior solidification (Duan & Li, 2020) or even degradation. Therefore, it is necessary to treat references rationally, and teachers need to deepen and optimize their reflection and criticism in imitation.

This study was aimed at teaching philosophy, not the teaching behaviors in the classroom. Respondents usually took lessons according to the contents of the lesson plan and followed the logical order of textbooks, presenting a preset adjustment orientation that relied on PPT. If so, the quality of lesson preparation determined the quality of teaching in the classroom.

> When teaching, pay attention to the classroom atmosphere and arouse students' emotions, organize teaching according to the present, pay attention to some good generative resources, and take advantage of the situation and the trend.
>
> Guide students to experience the formation process of knowledge and encourage students to question, dispel doubts, and reason mathematically, leaving time for students to think and answer.

It is not difficult to see that, because primary school maths teachers had a lot of tasks to do every day, they mainly imitated and learned from existing PPT when preparing lessons to guide classes. Their understanding and research on the contents were not enough. However, some new ideas of curriculum teaching have become popular in primary school maths teaching.

3. Teachers experienced various professional development activities, and positive comments were more than negative

Although the teachers' professional development activities involved in the survey had few local characteristics and differences in qualifications (new teachers, young teachers, outstanding young teachers, backbone teachers, excellent teachers, and academic leaders), they were generally similar in forms. These activities were mainly organized and implemented by teacher development schools or education bureaus, including online and offline training, competitions, experience exchanges, research projects, and regular school-level teaching and research activities.

Generally speaking, teachers' positive comments on professional development activities were more than negative. Positive comments were manifested in "*broaden horizons*," "*get in touch with cutting-edge ideas*," "*inject new ideas,*" and "i*mprove teaching ability and research level*," especially "*competition can improve one's ability best."*

> "If you ask where the canal is clear, Only the source of living water can make progress." Teaching and research are practice, and practice can improve abilities. These promote my professional growth, although busy but very happy!

In addition to the most positive comments, some negative comments were also. For example: *"Some activities had no practical significance. Some training contents were not targeted to discipline, and the course research was not enough. The intensive training of continuing education in summer has a weak effect on professional development. Online learning is instructive, but some are long and time-consuming*." A teacher wrote:

> Teachers prefer to hear teaching-related examples in the training activities, which we call "Dry Goods." Of course, theoretical support is also needed. What I do not like should be pure theory or advanced theoretical knowledge.

Although most of these activities were "*arranged*," teachers were still willing to accept them. The professional development activities were specific to teachers at different stages and kept pace with the times. Teachers had criticized the formalized professional development activities and the increased workload of making up for missed classes. They hoped that professional development activities were "dry goods" that combine theory and practice and could be relatively fixed in time without conflict with regular teaching.

4. The research willingness was high even though the pressure of time and energy

When the researcher read and encoded the working tasks of teachers, she felt that the teachers were like a machine that needed to run all the time, which confirmed that the burden of teachers' work and the pressure of actual working hours were underestimated (Skaalvik&Skaalvik,2017). However, when the researcher was reading and coding teachers' research needs, they showed a kind of self-motivated eagerness, which once caused the researcher to have the false image of the teachers to "pretend" to meet her needs. Still, the description of the facts made her dispel her scruples.

The surveyed teachers wanted to research to improve personal comprehensive professional ability and mathematics literacy and promote students' learning. It was also one of the reasons that it was beneficial to professional rank and regard research as a driving force of insecurity.

> There are two main reasons for wanting to do research. One is that becoming a research-oriented teacher is of great help in promoting professional ranks. Moreover, the other is that teaching research is the need for teachers' professional growth.
>
> I think it is meaningful to do research. Inadvertently, there will be many gains. Self-promotion is also. Conducive to the promotion of students, killing two birds with one stone.

The demands of professional activities were reflected in teaching ability and teaching research ability, including expression, analysis, induction, classroom management, evaluating, reasoning, thinking, information technology, etc. Teaching research skills included researching, choosing a topic, and writing papers. As for what kind of research they wanted to do, their favorite was a grounded empirical case study with special issues, cooperation, and guidance from excellent teachers. A teacher wrote:

> Teaching without research is shallow. Research without teaching is empty, so I want to teach and research in parallel to improve myself. I want to improve my literacy in teaching efficiency, teaching methods, class management, teaching philosophy, teaching theories, listening, and evaluating skills.

The reasons for not wanting to do research were mainly being busy at work, lacking time and energy, or feeling that research required talent and lack of theoretical literacy.

> Doing research is good, which can improve one's quality, such as the ability to interpret textbooks, manage classroom ability, and update teaching ideas. However, I am too busy and limited time, and much research goes through the motions!

> I Do not want to do research. The first is that talent is also required to achieve a certain level of professionalism. I feel that I can only complete the daily teaching work. The second is that I need to devote time and energy to studying, but I am in charge of the related work of the school office in addition to teaching and seniority at school, which has occupied most of my time. I am short and tired after work, so I don't want to study further.

Atay(2008) found that Turkish primary and secondary school teachers realized that teacher research could develop their research skills, enhance their understanding of the teaching process, and promote their enthusiasm for teaching. Still, at the same time, they were worried and lacked an understanding of the research process, which was similar to the findings of this study.

5. Expectation and predicament

28 of the 102 participants shared their opinions on trouble and Expectation, accounting for 27.5% of the total. Among these views, 32% called for reducing the burden on teachers because "*chores squeeze teachers' time for thinking and learning*" and "*cannot focus on teaching and professional development*."

> The most valuable thing is to keep teachers' enthusiasm for teaching, desire for sustainable learning, calm down, and believe in regular instruction. However, it is more difficult because today's teachers, especially the headteacher, squeeze out the time to think and study. They cannot explore independently and cannot stop thinking.

39% expected "*have a mentor to lead their growth*" or "f*orm a team with excellent teachers*." Increasing communication opportunities and leaders' encouragement of school research also positively impacted their willingness to study.

> The key to research willingness is teachers' initiative, but the school atmosphere also has a great influence. A good research atmosphere in schools will also encourage teachers to conduct research.

At the same time, the survey participants also shared some of their perceived predicaments, namely: some teaching and research activities were a waste of time and lacked quality; continuing education lacked systematic planning; the training

contents and theme were unclear; rural teachers seriously lacked professional knowledge; tests for students' core literacy were lacking; effective lesson preparation was lacking; inquiry-based teaching was lacking; a large workload of homework correction, etc.

DISCUSSION

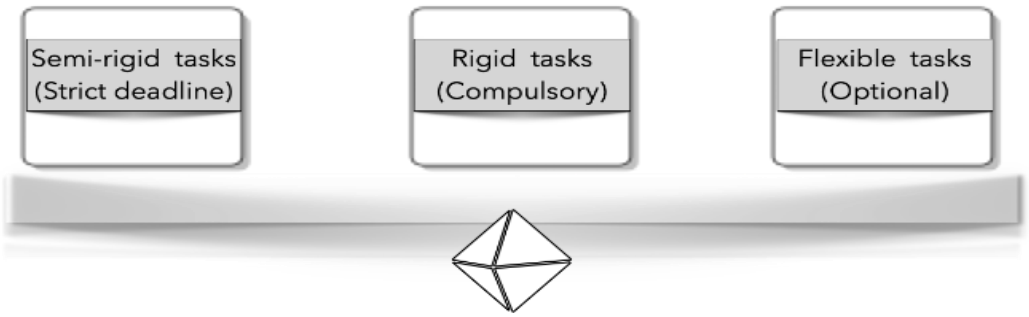
In the past 20 years, with the continuous innovation of educational reform globally, teachers have been required to become teaching reformers and researchers. Educational research in many countries has shown that compared with the past, teachers were increasingly tasked with more and more workloads, which became some unfavorable factors for teachers to do research. From the data, the author summarized the current work contents and time of primary school maths teachers in China mainland and aimed to explore the research space and willingness of the school teachers through the working situation. Though the participated teachers were eager to do research, they faced some difficulties and predicaments.

1. Teachers' research space was affected by semi-rigid tasks

After rereading respondents' descriptions of work tasks many times, the researcher became aware of the priorities and developed three functions versus the time required — rigid, semi-rigid, and flexible tasks (Fig.1). Teachers characterized the value of a unit of time by coping with pressure, constraints, and priorities and strived to achieve the goal and significance of work (Neufeld, 1991).

Figure 1

The game between teachers' daily work priorities and execution time



Source: personal document

It can be seen in figure 1. According to the task's urgency and whether it is optional, a school teacher's daily work is like a lever. Rigid tasks are the support of the lever, which must be completed in compulsory time, and the remaining time was used to deal with semi-rigid tasks and flexible tasks. Teachers' autonomous time was determined by semi-rigid tasks (intrusive tasks). If there were fewer semi-

rigid(invasive) tasks, teachers would have absolute optional time. During the optional time, research elements such as reading, researching, writing papers, and in-depth lesson preparation could be actively implemented.

The space for self-reflection and self-growth as a person and a teacher would be revealed. The current situation is an increasing trend of semi-rigid tasks that take up personal time, causing teachers to become the executors of other people's decisions, similar to the United States (Goodale, 2011). The semi-rigid tasks in America included meetings, examinations, managing students' behaviors, budget issues, and parent contact (Goodale, 2011).

Even without considering the burnout or emotional exhaustion that many tasks may bring to teachers, the most immediate impact was workload, time pressure, and low quality of work. Therefore, as in the primary math teachers' voice in the questionnaire survey, intrusive tasks should be minimized, and "the teacher's practice should be based on the understanding of caring" (Neufeld,1991).

2. Teacher research is facing the predicament

The previous analysis found that in response to the wave of education reform in the new millennium. Teachers are required to find ways to change the teaching practice they are already familiar with, promote the reform and development of the curriculum, and make research become part of the work of school teachers. However, teacher research is facing a predicament. For one thing, primary and secondary school teachers believed that research was a matter of university teachers. In contrast, school teachers focus on teaching, and there is a lack of ability to participate in research on teaching actively.

Although the current school-based teaching research is becoming more and more popular, the concept of primary and secondary school teachers' need for research has not changed. The phenomenon that teaching and research are separated is still common. For another thing, the semi-rigid tasks of school teachers are constantly increasing, making teachers' research face the realistic dilemma of time, energy, and ability. The vast majority of teachers in the sample had a strong research desire to improve teaching. The main difficulty came from the lack of research time and space under busy work pressure. They did not know how to do research. The school environment was under-supported and lacked experts or a team to guide.

3. Insufficient awareness of promoting teaching with lesson preparation and instructional design

The primary school maths teachers in the sample used teachers' reference books and network resources to learn from and imitate in lesson preparation and teaching design. In doing so, they could avoid thinking and spend less time, which

was shown as the inert behavior of teaching (Shao & Zhang, 2019). However, network resources, teaching reference books, and supporting courseware are like a double-edged sword, which provide convenient resources and imitation channels for teachers to teach and cause shallow teaching. If teachers' imitation lacks conscious internalization and innovation, it will deprive the teacher of the opportunity to think, analyze, study, and even become a hotbed of inertia and degradation. Seven American elementary school teachers interviewed by Crotwell (2011) also did not have enough time to plan and prepare lessons adequately. Still, most of them had a system to when and how to complete lesson plans and spent most of their time on lesson preparation and instructional design.

Dewey pointed out that we do not learn from experience but reflect on the experience. Growth can occur only by combining experience and reflection (Liu, 2007). Let us look at lesson preparation and instructional design from research. The lesson preparation and instructional design process is a kind of miniature teaching research, and the lesson plan is the research result. It needs to compare, analyze, understand, and reflect on the methods, means, and resources that need to be adopted based on students' existing experience, knowledge, and skills. Therefore, school teachers must prioritize and implement the conditions for preparing lessons and instructional design. Based on reference, strengthen the research mentality of critical reflection, train one's research consciousness and research ability from lesson preparation, and then gradually try to study small program research.

CONCLUSION

This study took the public primary school math teachers in Southeast China as a case, aiming at whether the school teachers had time, willingness, and need to study while teaching. According to the survey, school teachers' average daily work time was about 10 hours. The work tasks were trivial and diverse, including rigid, semi-rigid, and flexible tasks such as teaching, homework correction, lesson preparation, budget issues, student aiding, administrative work, competitions, reading educational books and journals, writing papers, etc. Personal autonomous time was limited. The arrangement of working hours was related to the urgency of tasks, presenting a social control mode of short-term responsibility. The lesson preparation adopted a modification and imitation mode while the teaching was conducted in preset adjustment orientation. The research awareness and ability were insufficient.

However, the teachers who participated had a very high willingness to do research and regarded research as a driving force of development. The main reasons were the improvement of mathematical literacy and promoting students' learning, which was conducive to the professional ranks. The reasons for not wanting to do research were mainly being busy at work, lacking time and energy, or feeling that

research required talent and lack of theoretical literacy. They called for reducing burdens, expected mentors to lead their growth, teaming up with excellent teachers to increase communication opportunities, and expected leaders to attach to school research. In addition, they also put forward some predicaments, such as the low quality of some teaching and research activities, the lack of systematic planning of continuing education; the ineffective implementation of effective lesson preparation and inquiry-based teaching; heavy homework correction workload, the connection between online and offline teaching. Some recommendations were put to balance teaching and researching as follows:

First of all, teachers need to change their ideas and face the diversity and triviality of teachers' work in essence. Teachers need to realize that teaching has become a profession that requires long hours of work, and the contents of teachers' work are not simple, far more than "several lessons" on the surface.

Secondly, learn time management and balance the relationship between effective teaching and research. The meaning of social change is to make teachers realize the importance of time management in primary school teaching (Ballet & Kelchtermans, 2009). When teachers can manage time successfully, the teaching they provide for students will be more effective.

Third, provide a support system. In the survey, teaching research requires teachers' initiative, and the school atmosphere can encourage teachers to do research. The significance of this study is to call on education authorities and administrative departments to support teachers' research-based teaching. For example, providing special funds to establish an on-campus cooperative research mechanism between universities and schools lets school teachers be guided and cooperate in their learning and research.

In addition, the education authorities, apart from systematically planning professional development activities according to teachers' development needs at different career stages. They also need to do their best to take measures to solve the intrusive tasks that interfere with teachers' regular teaching and reduce the burden on teachers. "We are very tired" was the direct voice of the surveyed teachers and not to let teachers' teaching become their "sideline." If teachers regard teaching research as an extra task and a waste of time, the quality of teachers' research cannot be guaranteed, and research-oriented teachers will become unrealistic. However, to promote students' development, teachers' in-depth research on teaching is indispensable.

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