Understanding The Impact On The Teacher Professional Learning: Combination Of The Psychological States And School Capacity

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Abstract:

Teacher Professional learning is highlighted to provide an avenue for teachers to obtain necessary skills to improve their teaching. The objective of the research was to explore the role of teachers' psychological states and school capacity on teacher professional development. This study examined the question through analyzing the data that collected from 417 teachers at a private university in Henan province of China. The research utilized statistical analysis to obtain the Mean and Standard Deviation. Multiple regression analysis was used to verify the validity of the variables. The psychological state of teachers contained two significant items, including teacher self-efficiency (β=0.178, P=.000); teacher agency (β=0.227, P=.000). School capacity also includes two variables: teacher trust (β=0.392, P=.000); teacher communication (β=0.105, P=.010). This result of the research showed good support for the proposed hypotheses. Teacher psychological states and school capacity were positively related to teacher professional learning.

Keywords: *Teacher Professional Learning, Psychological states, School Capacity.*

Introduction

Over the past decades, numerous studies have verified that the quality of teacher matters for students' achievement and learning (Timperley, 2011; Canales and Maldonado, 2018; Thoonen et al. 2012). Research on teacher professional learning has exponentially evolved, which can be greatly attributed to the current changes and innovation in the setting of education across the world. During the process of reforms implement, teachers must be equipped with the ability and professional knowledge to adopt the new method and enhance the development of skills among learners (Hallinger et al., 2014). Equipping teachers with profes[1]sional knowledge would lead to a smooth flow from the government to the education institution and finally to the students.

There are a variety of definitions and models of teacher professional learning. Despite the issues of definition, it has been generally acknowledged that teachers'

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participating in teacher professional learning activities has an active effect on their techniques and knowledge, and it can improve the quality of student learning and performance (Parsons and Beauchamp, 2011; Desimone 2011).

In China, this focus of teacher professional learning also resonates in recent years. The requirement of teacher professional learning has a profound impact on teachers. It is suggested that education institutions should place teacher professional learning into their development agenda and teachers ought to take part in no less than 150 hours of professional development courses during a three-year period (Ministry of Education [ED], 2013). China has carried out a series of curriculum reformation that request teaching staff to adjust to the objectives of new system and master new teaching approaches (Dello-Iacovo, 2009; Qian & Walker, 2013; Ding, 2010).

Emphasis is placed on the teacher's professional development to provide a pathway for them to obtain the skills that are needed to enhance their teaching. However, according to a research paper by Hallinger et al. (2017), top-down teacher training systems often ignore the teachers' actual needs. Prior research has perceived professional development as a method to enhance the learning of teacher, but recently researcher has been increasing interested in view of teacher professional development, and it focuses a more collaborative approach to teacher professional growth (Hallinger et al., 2017; Liu et al., 2016; Prenger et al., 2020; Hallinger and Kulophas, 2020). A teacher's willingness to grow professionally, the comprehension of professional development, and the types of development activities they participate in all have an influence on teacher professional development. Prior studies (Hallinger & Liu, 2016; Zheng, Yin, & Li, 2018; Yin & Zheng, 2018; Liu et al. 2016) discussed that teachers' psychological states, such as teacher self-efficacy, teacher trust and teacher professional agency, are important psychological mechanisms that affecting teacher professional learning. Li, Hallinger and Ko (2016) explored that school capacity including teacher trust, teacher communication and teacher collaboration influence teacher professional development. A gap still exists referring to how psychological states and school capacity work together to have effects on teacher professional learning. And there exists limited empirical study referring to the practice of teacher professional learning in Chinese schools. In addition, there are few studies on teacher professional learning in higher education, especially in private universities. This study examined the issue through the analysis of the data collected from 417 teachers of a private university in Henan province of China to explore the role of teachers' psychological states and school capacity on teacher professional development.

Literature Review

In this section, this research reviews the relevant literature on the five key variables: teacher professional learning, teacher trust, teacher self-efficiency, teacher agency and teacher communication.

Teacher professional learning

Teacher professional learning has been traditionally defined as a course where teachers absorb the techniques and knowledge passively in certain programs and take advantages of the skill that learned elsewhere (Kelly, 2006). As time goes on, researchers have taken a

more sophisticated approach to comprehend teacher learning by combining teacher subject objective, social interactions and learning competence (Gibbons & Cobb, 2017; Geijsel et al., 2009).

Based on the point, researchers conceptualized teacher professional learning as teachers' professional and social behaviors to actively construct skills and knowledge and enhance teaching in the context of practice, with the aim of improving the learning of students (Putnam & Borko, 2000; Bruce, Esmonde, Ross, Dookie, & Beatty, 2010). Scholars believe that teacher professional learning not only concentrates on the broadening of discipline knowledge, but also the deepening of teaching methods. Instead of being episodic and short-term, the experience of learning and support should be ongoing and continuous. Teachers are driven by their belief psychologically to move forward towards their purpose (Kolb, 2014). Individual learning of teachers can be shown in many forms, which includes self-exploration and reflection. Improving individual learning can widen the comprehension of the role of teachers in enhancing authentic learning for students and increase their engagement.

Continuous learning opportunities often occur in the process of activities that are embedded in jobs, in which teachers share knowledge and exchange ideas (Lieberman & Pointer Mace, 2008). There are various forms of activities, for example, planning sessions, curriculum development teams, collaborative assessment of student work and mentoring relationship (Kwakman, 2003; Parise & Spillane, 2010; Qian et al.,2016; Qian & Walker, 2013; Wang, 2016)

Relationship between teachers' psychological states and teacher professional learning
The social cognitive theory of Bandura (1986) is the most significant adult learning theory. This theory states that environment situation, human cognitions and personal behavior are the determinants of the interaction, which explains individual learning and functioning. Bandura (1997) points out that perceived self-efficiency plays a significant role in mediating human learning and behavior. Self-efficiency is a belief about a person's expected ability to perform in a given situation. Bandura (1986) states that it is evident that people who deem themselves as productive would set themselves difficulties to stimulate their interest in and participation in activities. They tend to take risks and are more likely to be creative in thinking, learning and working. Studies on the impact of teacher efficiency and teacher trust show that they are related to teachers' professional learning and improvement of student achievement. Recent research (Hallinger & Liu, 2016; Zheng, Yin, & Li, 2018; Yin & Zheng, 2018; Liu et al. 2016) have explored that the states of teacher psychology such as teacher self-efficacy, teacher trust, teacher professional agency, working as significant psychological mechanisms and it influences on teacher professional development. Based on the above research results, this research defines psychological states as teacher efficiency and teacher agency, which will be explained in detail as follow:
Teacher self-efficiency.

Teacher self-efficacy refers to the competence of teachers to believe in their capacity to successfully complete teaching tasks and professional development, as well as affect students' participation (Tschannen-Moran and Hoy, 2001; Hoy and Spero, 2005). It is regarded as a significant mechanism that explains changes of human behavior. It is a

powerful motivation for teachers to strive and persist in the pursuit of teacher professional learning.

As an important psychological state to motivate and maintain teachers' learning, teacher self-efficacy has received increasing attention from researchers. Teachers who see themselves as effective professionals tend to accept challenges and show perseverance and interest in their professional development. Teachers who have high self-efficacy are regarded to be more likely to accept the new teaching approach which can help to advance student learning outcomes. They are motivated to work to achieve their professional objectives, engage in self-exploration, and try innovative teaching strategies (Bruce et al., 2010). Studies on the impact of teacher self-efficacy confirm these discoveries. Some researchers hold the view that teacher's self-efficacy is associated with their professional learning and the development of student learning (Goddard, Hoy, and Hoy, 2000; Bandura, 1993), and it works as a moderating effect between teacher professional learning and principle leadership (Thien et al., 2021; Liu & Hallinger, 2020;). Based on these findings, this paper predicted next hypothesis:

H1. Teacher self-efficiency will be positively related to teacher professional learning.

Teacher agency.

Agency refers to confidence of individuals when encountering difficulties and the ownership of initiatives and the goals that they acquire (Emirbayer and Mische 1998). Although academic efforts to conceptualize teacher agency date back to 20 years ago (Biesta et al. 2017; Emirbayer and Mische 1998), the specific definition of teacher agency has not yet reached an agreement. This study defines teacher agency as an individual's attitude towards learning which can affect one's belief in one's competence of improving (Frost 2006; Kwakman 2003; Piyaman et al. 2017).

Teacher agency refers to the belief of teachers in his or her capacity to learn skills that are needed to enhance teaching. Teachers that have a high sense of agency are more likely to invest in teacher professional learning (Priestley et al. 2015) and to be stronger minded to enhance their teaching (Liu et al. 2016). Therefore, teacher agencies have attained more and more attention from scholars and policy makers. The research indicated that teacher agency plays a vital part in developing teacher learning and teaching competence, which influences the improvement of school (Fu and Clarke 2017). Discovers from prior studies also verifies the role of teacher agencies in promoting teacher professional learning with the aim of improving teaching (Hallinger et al., 2017b; Liu et al., 2016). Based on the point, this study proposes the third hypothesis:

H2. Teacher agency will be positively related to teacher professional learning.

Relationship between school capacity and teacher professional learning

The capacity for school improvement has been the theme of theoretical and empirical research. Although the concept of "school capacity" varies among research, it is a construction of school-level. Newmann et al. (2000) believed that the school's capacity for enhancing student outcome contains the knowledge and character of teachers, the degree of consistency in the curriculum, the nature of principal leadership, and the quality of

technical resources. They also discussed that school capacity could be developed by the usage of systematic teacher professional development.

Heck and Haringer (2009, 2014) carried out several research on the relationship between leadership, school improvement and school capacity, which gave definition of school capacity as the condition of school, and it contained various characteristics, such as trust, communication, teacher professional competence, quality of student support, and continuous concentration on improvement. Li, Hallinger, and Ko (2016) pointed out that school capacity such as teacher trust, teacher communication, and teacher collaboration affect teacher professional development. The school capacity of this research includes teacher trust and teacher communication.

Teacher trust.

Trust is 'one's vulnerability to another in terms of the belief that the other will act in one's best interests' (Hoy et al., 2006). According to existing research, three different aspects of trust were identified. Calculative trust is the trust that is on account of an individual's assessment of interpersonal interactions. Faith trust means the trust in colleagues that is based on common values and beliefs. And relational trust is ties of affection that are on basis of personal relationships. (Tschannen-Moran and Hoy,
2000; Tschannen-Moran,2004;Hoy and Tschannen-Moran, 1999; Lee, 2011; Rousseau et al., 1998).

A growing number of studies stated the positive effect of teacher trust on the willingness to take part in teacher professional learning and the preparation for change (Zayim & Kondakci,2015). Prior studies have conceptualized trust as a condition that can promote teacher professional learning (Hallinger & Lu, 2014; Thomsen et al. 2015; Li et al., 2016). Teacher trust can enhance teachers' disciplinary knowledge, teaching techniques, and enhance the effectiveness of teaching which is indispensable for classroom teaching reform (Cosner, 2009). The 'interdependence of the relationships' plays a significant part in the establishing of professional learning community (Caskey, 2010; Hoy & Miskel, 2008; Wahlstrom & Louis, 2008). Previous research has proposed that trust is a necessary condition to maintain active participation in professional learning and it mediates between the leadership and teacher professional learning (Hendawy Al-Mahdy et al., 2021; Bellibaş & Gümüs ,2021; Thien et al., 2021). Therefore, we propose the following hypothesis:

H3.Teacher trust will be positively related to teacher professional learning.

Teacher communication.

As an essential factor of building relationships within schools, the definition of communication is "any means by which an individual relates experiences, ideas, knowledge and feelings to another including speech, sign language, gestures and writing" (Harryman, Kresheck, & Nicolosi, 1996). Researchers considered communication to be the course of development that individual try to inform and achieve a shared comprehension (Dwyer, 2005; Gouran, Wiethoff, & Doelger, 1994). Communication is fundamental competence for individuals and organizations to achieve their objectives. Communication is always a basic element in studies on school improvement and it is also a vital element in building relationship quality, as well as school climate and culture (Leithwood et al., 2008; Vescio,

Ross, & Adams, 2008; Heck & Hallinger, 2009).

In a school context, communication is the "the purposeful production and transmission" of information (Gouran, Wiethoff, & Doelger, 1994). Sparks (2003) argued that it is significant to promote communication and the skills of problem solving of leaders with the aim of improving relations among employees. A small amount of previous literature showed communication plays a crucial part in enhancing teacher professional learning (e.g., Danielson, 2001; Li et al., 2016; Tschannen - Moran, 2000). Therefore, this research suggests the sixth hypothesis:

H4.Teacher communication will be positively related to teacher professional learning.

Methodology

Sample and data collection procedure

The purpose of the study is to analyze the impact of teachers' psychological states and school capacity on teacher professional development. This research was carried out in Henan province in mainland China. The questionnaire was submitted to 450 teachers who have various levels of professional learning. 417 questionnaires were collected and proven to be valid.

The data collection methods in this research contained frequency, percentage, standard deviation and means for analyzing the current situation of teacher professional learning. This research also utilizes the Multiple Regression Analysis to analyze the degree that the teachers' psychological states and school capacity influencing teacher professional learning.

Measures

The variables of the research were tested on a five-point Likert-type scale, in which 5 stood for a high value of the variable and 1 represented a low value of the variable. All scales used the same response options. The options are from 1 (strongly disagree) to 5 (strongly agree).

The measure for teacher professional learning in this research used items taken from a scale developed by Li et al., (2016). And there are 8 items in the sub-scale of the teacher professional learning with the aim of measuring the aspects of teacher professional learning.

The study also employed scales to measure the teachers' psychological states and school capacity. The scale for teacher self-efficacy used items chosen from the research of Liu & Hallinger (2018). This research deleted two items from the original one which were invented by Tschannen-Moran and Hoy (2001). Because it is not suitable for the Chinese context. And the sub-scales included ten items in the teacher self-efficiency. As to the scale of teacher agency, this research selected items from the scales which invented by Toom et al., (2017). The scale measured teacher agency especially in the professional community and learning environment and it consisted of 13 items for teacher agency. The teacher trust scale is informed by the research of Li et al., (2016). This current research report on sub-scales measuring teacher trust. There are four items in the teacher trust sub-scales. The last sub-scale is teacher communication scale. This scale is selected for the research of Li et al., (2016). It consists of 4 items measuring teacher communication in teacher professional learning.

Results and Discussion

Demographic information was collected on gender, age, education background, teaching experience, and position in school (See Table 1).

Table 1: Demographic Information of the Samples(n=417)

Characteristic	Group	Number	Percentage
Gender	Male	112	26.9
	Female	305	73.1
Age	21-25	43	10.3
	26-30	154	36.9
	31-35	110	26.4
	36-40	56	13.4
	41-45	15	3.6
	>46	39	9.4
Education Background	Associate degree	1	0.2
	Bachelor's degree	66	15.8
	Master's degree	348	83.5
	Doctoral degree	2	0.5
Teaching experience	0-3 years	217	52
	4-10 years	110	26.4
	11-16 years	51	12.2
	17-23 years	7	1.7
	24-30 years	3	0.7
	>30 years	29	7
Leader or not	Yes	23	5.5
	No	394	94.5

Table 2 is the descriptive statistics of the variable, and the analysis of the result presents positive results. "Teacher trust"is the highest Mean 4.3903, The lowest Mean is " Teacher communication", which is 4.1379. All the items got a positive result.

Table 2: Mean Score and Standard Deviation (n=417)

Values	Mean	SD	Interpretation
Teacher professional learning	4.2620	.49835	High
Teacher self-efficiency	4.1626	.48486	High
Teacher agency	4.3365	.47259	High
Teacher trust	4.3903	.47229	High
Teacher communication	4.1379	.60932	High

In this study, the researcher tended to investigate the degree of teacher self-efficiency, teacher agency, teacher trust and teacher communication impacting on the teacher professional learning. The first section of Multiple Regression showed the data analysis results (See Table 3). The R-value was .812, and it indicated the relationship between teacher self-efficiency, teacher agency, teacher trust, teacher communication and teacher professional learning was 0.812. The R Square was .659, and the data indicated that teacher self-efficiency, teacher agency, teacher trust, teacher communication indicated teacher professional learning was 65.9%.

According to the result of the data analysis, teacher self-efficiency, teacher agency, teacher trust and teacher communication significantly impacted the teacher's professional learning. This study used a multiple linear regression analysis to explore the hypotheses. The results indicated that teacher self-efficiency was positively related to teacher professional learning (β=0.178, P=.000), and it supported hypothesis 1. Referring to hypothesis 2, teacher agency was positively related to teacher professional learning (β=0.227, P=.000). Teacher trust was positively related to teacher professional learning (β=0.392, P=.000), which supports hypothesis 3. As for hypothesis 4, teacher communication had a significant positive relationship with teacher professional learning (β=0.105, P=.010).

Table 3: Multiple Regression Results of the Survey Data Related to the Teachers' Psychological States and School Capacity Impact on Teacher Professional Learning (n=417)

Model	R	R Square	Adjusted R Square
1	.812	.659	.656

a. Predictors: (Constant), Teacher self-efficiency, Teacher agency, Teacher trust, Teacher communication.

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	68.111	4	17.028	199.277	.000
Residual	35.204	412	.085		
Total	103.315	416			

a. Dependent Variable: Teacher Profession

b. Predictors: (Constant), Teacher self-efficiency, Teacher agency, Teacher trust, Teacher communication.

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	.286	.142		2.005	.046*
Teacher Efficiency	.183	.050	.178	3.639	.000*
Teacher Agency	.240	.059	.227	4.075	.000*
Teacher Trust	.414	.051	.392	8.104	.000*
Teacher communication	.086	.033	.105	2.580	.010*

a. Dependent Variable: Teacher Professional Learning

Conclusion

The objective of the study was to explore the role of teachers' psychological states and school capacity on teacher professional development. Emphasis is placed on the teacher's professional development to provide a pathway for them to obtain the skills that are needed to enhance their teaching. Some studies have concluded that the psychological states of

teachers, including teacher self-efficacy, teacher trust and teacher professional agency, are important psychological mechanisms that affecting teacher professional development (Liu et al. 2016; Yin & Zheng, 2018; Hallinger & Liu, 2016). The prior studies gave definition of school capacity as the condition of school, and it contained various characteristics, such as teacher trust, teacher communication, teacher collaboration, quality of student support, and continuous concentration on improvement (Li & Ko, 2016; Heck & Haringer, 2014). In this study, the psychological states contain teacher self-efficiency and teacher agency, and school capacity includes teacher trust and teacher communication.

This research hypothesized that the psychological states of teacher (i.e., teacher self-efficiency; teacher agency) and the school capacity (i.e., teacher trust; teacher communication) will predict the teacher's professional learning. We found good support for our hypotheses. They were positively related to teacher professional learning, which consistent with the results of previous studies (Bellibaş & Gümüs ,2021; Thien et al., 2021; Li et al., 2016; Liu & Hallinger, 2020; Fu and Clarke 2017). Overall, teachers' psychological states and school capacity had significant effects of teacher professional learning. Most prior research only emphasized one or two aspects that impact teacher professional learning. This research presented actual evidence and combining teachers' psychological states and school capacity together to explore the influence on teacher professional learning.

Therefore, in the process of education, it is significant to improve teacher professional learning in higher education. Meanwhile teachers' psychological states and school capacity play an important role in creating a passion of the professional learning through the effective usage of the system that motivates future teachers. It is recommended in the potential of future research in this domain. In addition, educational systems are recommended to develop teachers' psychological states and enhance school capacity for improving teacher professional learning in their schools.

Limitation

This research was subject to two limitations. First, there is a relatively small sample of teachers in mainland of China in the study. Though there are no important sources of bias of the convenience sample, the results again must be explained as preliminary result. Future study in China context will go on to set up on these achievements.

This research concentrates on exploring the effects of only some relational factors in school context. Indeed, various characteristics of psychological state and school capacity are related to teacher professional learning. Teacher self-efficiency, teacher agency, teacher trust and teacher communication are just a few of them. To further explore the effects of teacher professional learning, future study needs to take a closer look at the variables of psychological state and school capacity in school context.

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