

The Development of an Action Plan for Enhancing Teachers' Innovative Leadership Based on Organization Culture at Primary Schools in Best Educational Organization, China

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Abstracts

This study mainly aimed to explore the relationship between teachers' innovative leadership and school organizational culture; examine the effect of demographic factors on teachers' innovative leadership and school organizational culture; and to develop an action plan for better teachers' leadership in primary schools of Best Educational Organization in China. Through systematic literature review, the researcher developed a questionnaire to survey teachers' innovative leadership and school organizational culture. A total of 390 full-time teachers from three primary schools of Best Educational Organization in China was used as the target group. Based on the qualitative and quantitative analyses, the study developed a model and proposed an action plan and put it into the implementation for a term. Finally, the findings showed that: 1) Teachers' perception of innovative leadership before implementing the action plan was at a moderate level in this study. 2) Teachers' overall perception of school organizational culture was at a high level. 3). Teachers' perceptions of innovative leadership and their perception of school organizational culture were significantly different according to their demographic factors such as age, service years, and position. 4) Teachers' perceptions of innovative leadership were highly positively correlated with perceptions of school organizational culture. 5) Teachers' innovative leadership after implementing the action plan was improved. Discussion based on each research objective was conducted and recommendations for the schools and teacher were provided by the end of the study.

Keywords: Teachers' Innovative Leadership; School Organizational Culture; Effect of Demographic Factors; Action Plan; Primary Schools of Best Educational Organization; China

Introduction

Teachers' leadership originated from the management theory in the 1980s and has been paid more attention in recent decades. Early international studies on leadership in the educational environment mostly focused on the leadership characteristics of a single leader, such as the role of the principal or the influence of different leadership styles. Then, with the rise of transformational leadership theory, leadership paradigms gradually shift to organizational members, such as teachers, students, communities, parents, etc.

This trend is towards decentralization of leadership, and everyone can be a leader and the collective contribution of leading members, which will influence each other and make more positive educational practices and improvements together; Positive educational practice and improvement, that is, the emergence of educational reform, also means educational innovation. Therefore, this study used the term teachers' innovative leadership to emphasize the

characteristics of teacher's leadership in improving educational quality. Teachers' innovative leadership emphasizes teachers' influence rather than the roles or formal authorities (Anderson & Anderson, 2001 : 214-258 ; Snoek, Enthoven, Kessels, & Volman, 2017 : 26-56). Teachers' leadership is conceptualized as a process of innovation and change, in which teachers are the key change agents and the source of innovation (Chew & Andrews, 2010 : 59-74 ; Snoek et al., 2017 : 26-56).

Teachers' innovative leadership not only emphasizes the role of teachers' leadership beyond the formal classroom but also emphasizes sharing practice and initiating innovative teaching changes. Cooperation and informal interaction, sharing, and communication with peers based on common interests, respect, and trust (Baker-Doyle, 2017 : 450-466 ; Smeets & Ponte, 2009). However, the research on teachers' leadership with teachers' innovative leadership is very limited. Therefore, this study is eager to break through this bottleneck and open a wider research scope for teachers' leadership.

With the gradual expansion of the definition of teachers' leadership, research topics on teachers' leadership become more and more abundant. For example, teachers' leadership will be influenced by school culture (Cooper, Stanulis, Brondyk, Hamilton, Macaluso & Meier, 2016), school structure (Cheng & Szeto, 2016 : 140-148), and other factors, and what impact it will have on an individual level, group level, and organization level are all considered as important viewpoints of current research; Especially, professional growth groups at the organizational level and supporting curriculum changes are considered by scholars as one of the research directions that must be paid attention to in the future (Hairon, Goh, & Chua, 2015 : 163-182 ; Sebastian, Huang, & Allensworth, 2017). Therefore, combining the research of teachers' innovative leadership with school culture, and observing the interaction between teachers' innovative leadership and organizational culture, especially the influence on supporting curriculum change at the organizational level, will be the research topics that will be paid international attention in the future.

However, compared with the attention paid by foreign research institutes, these trends have little impact on the domestic education sector. According to the research of Chinese domestic scholars on teachers, teachers' concept of teachers' leadership is still generally low, and their perceptions about school organizational culture are also very limited (Song, Hu, & Yang, Li, 2007 : 25-28 ; Gong, 2011 : 52-55). A good organizational culture can improve school efficiencies, such as learners' learning effectiveness and teachers' professional growth (Evans, 2003 : 424-437). This effect has attracted the attention of domestic school administrators (Song, Hu, Li, 2009 : 56-61; Gong, 2011 : 52-55 ; Leslie & Chen, 2007 : 1-5). However, although the research concerned teachers' leadership and school organizational culture paid attention to, research topics are still novel and the amount of research is small, especially since the research content of organizational culture is hardly used to improve teachers' innovative leadership.

Since 2001, the three primary schools of Best Educational Organization have been established in the Chinese mainland area and have been deeply engaged in education for nearly 20 years. Their school-running features not only emphasize the international language education of learners, but also attach importance to the active learning ability. Integrating Chinese and American courses, planning a dual-track curriculum, and being approved by the government as an international school for Sino-US cooperation in running schools, the mainland China area is an excellent teaching demonstration site. On the characteristics of school organizational culture, for example, all kinds of school activity scenes are presently

hand-made by teachers and students; According to the theme education venues of local humanities and history in China mainland area to assist in a research study; International study camps are also held to help teachers and students learn and understand the multiculturalism of different countries. In terms of teachers' professional growth, managers personally interact and encourage each teacher in the teaching profession and provide teachers with further education allowance to encourage teachers' further education; In the management of teachers, strict hierarchical management of primary, intermediate, and senior teachers is set to control the teaching quality of teachers. For decades, these two schools have been committed to developing self-growing and lifelong learning teachers and management teams to increase their competitiveness.

As the manager of Best Educational Organization, the researchers knew that to build the sustainable management of the school organization, it is necessary to take some action plans to make a learning community for the ever-changing international educational market and confront the ever-changing educational problems, it needs to promote a good school organizational culture has the potential to create the above-mentioned content. Therefore, this researcher hopes to promote teachers' innovative leadership through curriculum development guided by school organizational culture, and finally realize the breakthrough and continuous progress of school education management module.

Based on the previous scholars' arguments, this research on teachers' leadership and school organizational culture has been proven to improve learners' learning, teachers' teaching quality, teachers' professional growth, and school effectiveness. International and domestic educational management research has paid more and more attention to the issues of teachers' leadership and school organizational culture. The leadership level of Best Educational Organization also realized the importance of teachers' innovative leadership, hoping to promote teachers' innovative leadership by improving the school's organizational culture.

Research Objectives

Based on the above statement and research questions, the objectives of this study were as follows:

1. To determine the level of teachers' innovative leadership at the primary schools of Best Educational Organization, in China.
2. To determine the level of teachers' perception of school organizational culture at the primary schools of Best Educational Organization, in China.
3. To examine the effect of demographic factors on teachers' innovative leadership and school organizational culture.
4. To test the significant relationship between teachers' innovative leadership and their perceptions of school organizational culture and predict the extent that teachers' perceptions of school organizational culture impact innovative leadership.
5. To develop an action plan to enhance teachers' innovative leadership based on school organizational culture.
6. To evaluate the teachers' innovative leadership before and after implementing the action plan.

Literature Review

Teachers' Leadership

Around the 1980s, teachers' leadership began to prevail in the United States and Canada, and its main purpose was to improve schools, enhance teachers' specialization and enhance students' academic achievement (York-Barr & Duke, 2004 : 225-316). Teachers all advocate that school leaders should be decentralized (Harris, 2003 : 313-324); This view represented two meanings. One is that leadership is fluid and emergent, rather than a fixed phenomenon; Secondly, every educator can perform leadership tasks. Of course, this does not mean that every educator is a leader, or that every educator should be a leader, but a more democratic and collective leadership style should be opened.

Wasley (1992) defined teachers' leadership as influencing teachers' peers and making them improve their teaching practice. Pellicer & Anderson (1995 : 312-324) mentioned that the relationship between teachers' leadership is that teachers help teachers so that teachers can further help students; Forster (1997 : 82-94) thought that teachers' leadership can be broadly defined as a kind of professional commitment, and it influences the course of teachers' cooperation towards teaching improvement and school reform, to achieve the goal of sharing the school. Clemson-Ingram & Fessler (1997 : 95-106) commented that the concept of teachers' leadership means that class teachers play diverse roles in the professional growth and management of staff and the improvement of schools.

Miller, Moon & Elko (2000) believed that teachers' leadership usually refers to the teacher's actions outside the teacher's class. These actions include providing professional development activities to teachers' peers, influencing the educational policy of the community (group) or school district, and supporting the change of classroom practice (referring to class teaching and class management). Katzenmeyer & Moller (2001) defined teachers' leadership as: teachers are leaders in their own class insider and outside and contributions to a learning community that includes teacher learners and teacher leaders, and further influence others to make educational improvement activities. Anderson & Anderson (2001 : 214-258) added that teachers' leadership lies in setting the direction and influencing others to work hard in the set direction.

Katzenmeyer & Moller (2009) further explained that teachers' leadership means that teachers, as leaders inside and outside the classroom, can participate in and contribute to the community of teachers, learners, and leaders, influence other teachers to improve educational practices, and take responsibility for students' learning results. Overall, the term "teachers' leadership" may include students' teaching, personal development, peer development, organizational development to community management, and other aspects; Although scholars still lack a consistent and clear definition of it, it is generally believed that teachers' leadership is the ability and commitment beyond the classroom to which teachers belong (DiMaggio, 2007 : 145-152 ; Wasley, 1992; York-Barr & Duke, 2004 : 225-316). In this study, the researchers believed that teachers' leadership is a process of teacher professional development, whose goal is to promote positive changes in students, school administrators, teachers' peers, parents, communities, and campus culture, and further achieve the ultimate goal of school improvement.

Teachers' Innovative Leadership

Innovation is the power source for any organization to advance. Teachers' innovative leadership can make teachers break away from the long-standing tradition of stability and closure, reflect on the educational dilemma they are facing, and cooperate and share responsibilities in an atmosphere of autonomy. At the same time, teachers are empowered to actively construct solutions to curriculum and teaching problems, so that all teachers can form a learning community, seek teaching innovation, and make positive changes on the campus. This section will review the concepts of innovation, leadership, and innovative leadership.

The topic of teachers' leadership has been paid much attention by educational academic circles in the last forty years, especially as an important factor of educational innovation (Ackerman & Mackenzie, 2006 : 66-70 ; Levenson, 2014 : 89-95). Şena & Eren (2012) pointed out that the current research focuses on the definition of teachers' innovative leadership, which is to create the most appropriate and effective teaching strategies and practical courses through the community combination established by school leaders that transnational boundaries, through the management of professional knowledge of each community, and the cooperation across cultural barriers of different communities, through the display of leadership style and influence, and the participation of the leaders' community in decision-making operation, so as to improve the personal achievements and organizational goals, shape the core values of the organization and enhance the school.

According to the foregoing, teachers' leadership has become one of the main development trends of contemporary school innovation and leadership theory and practice. Teachers are the designers and implementers of teaching, so teachers' leadership has great educational reform power (Katzenmeyer & Moller, 2009). To make the meaning of teachers' leadership clearer, Murphy (2005) put forward "The Embedded Logic of Teachers' leadership" to explain it. According to Murphy's implicit logical idea of teachers' leadership, teachers' leadership includes 1. Professionalization of teaching; 2. The strengthening of the school organization (or school health); 3. The promotion of classroom and school improvement and other three main axes, are connected and interrelated.

Concepts of Organizational Culture

Peggigrew (1979 : 570-581) believed that organizational culture consists of behaviors, actions and values, and individuals in an organization are expected to follow these behaviors, actions, and values. However, the most fundamental definition of organizational culture originated from Schein (1992), who defined organizational culture as: a set of basic assumptions developed by a certain group when learning to cope with its external adaptation problems and internal integration problems. Because these assumptions work well, they are recognized as valid and can be taught to new members of the organization as a correct way to perceive, think and feel the above problems. Moorhead & Griffin (1998 : 145) mentioned that organizational culture was a set of values, which were usually deeply rooted and help people in the organization to know which behaviors acceptable and which ones are unacceptable in the organization. These values are usually conveyed through stories or other symbolic meanings.

Henry (1993) applied the general concept of organizational culture to schools, and defined school organizational culture as a group of shared relationships, beliefs, values, and feelings in schools. The school meaning created by administrators, staff, teachers, parents,

friends, students, and others, with the core of "shared meaning", made the members in schools know that they belong to each other. School organizational culture is an extension of the concept of organizational culture.

Moorhead & Griffin (1998 : 145) commented that organizational culture was a set of values, which are usually deeply rooted and help people in the organization know which behaviors acceptable and which ones are unacceptable in the organization. These values are usually conveyed through stories or other symbolic meanings. A school is an organization, and this organization is composed of principals, administrators, teachers, and students. Organizational culture is the values and basic assumptions shared by the members of the organization, and the norms and expectations derived from this value, which are passed on to the members by symbolic means such as stories, biographies, rituals, and codes (Barley, 1986 : 656-665; Martin, 2006 : 12-19). Therefore, this study defined the school organizational culture as "a tangible and intangible product shared by school members through the interaction and adaptation with the environment inside and outside the school, and it has become a unique phenomenon of every school, and it is also a norm that school members abide by together". Saravanan (2013 : 143-165) believed that the factors that influence organizational culture include physical factors, social factors, organizational commitment factors and cultural factors.

Teachers' Innovative Leadership and School Organizational Culture in China

As for the empirical research on teachers' innovative leadership, Gong (2011 : 52-55) conducted a survey on rural schools in Napo County, Guangxi, and found that there were some problems in the leadership construction of female teachers in ethnic villages in Guangxi, such as leadership myth, lack of subjective consciousness, false representation, glass ceiling, etc. That is, there is still a lack of a more modern concept of transformational leadership. Lo & Chen's (2007) research on regular (backbone) teachers pointed out that backbone teachers play an important role in various professional development activities, but they also show the characteristics of elitism, hierarchy, and instrumentality. In addition, due to administrative interference everywhere, teachers' professional development is full of utilitarian color, compulsion, and passivity (Lo & Chen, 2007).

In view of the current situation of school organizational culture in China, scholars have conducted a survey of 5,255 teachers in primary and secondary schools in Beijing, China. The results show that teachers perceived organizational culture varies with seniority and school type, for example, those with 6-10 years' seniority disagree most, ordinary schools' teachers agree more than middle school teachers, and teachers in key schools agree more than those in weak schools (Song, Hu, & Yang, 2007 : 25-28).

This study planned to take the only three schools of Best Educational Organization in Chinese mainland, as the target research participants. Best Education covers kindergartens, primary schools, and middle schools, which not only emphasizes foreign language learning from kindergarten to middle school, but also attaches importance to the cultivation of learners' multiple intelligences and good habits.

Among the three schools, Best Bilingual School is a primary school. It was founded in 2002. In 2021, there were about 469 boys and 500 girls, a total of 969 students. Best Headstart Bilingual School is a primary school. It was founded in 2010. In 2021, there were about 218 boys and 253 girls, totaling 471 students. The schools' parents come from different jobs and areas, they are very diverse, such as social and economic backgrounds in law, finance, and real estate. Parents attach great importance to their children's education, so most of them

support schools to carry out educational innovation, and most of the learners are active and have independent ideas. Yanhuang Foreign Language School is a 15-year consistent foreign language school and elite, jointly invested by Shanghai Guanghua Education Group and Suzhou Guanghua Group. There are currently 71 teaching classes with more than 2,100 students. Among them, there are nearly 100 students in international classes from South Korea, the United States, Singapore, Taiwan, and Hong Kong.

The characteristics of Best Educational Organization in these schools are as follows:

- a. Change desks to small groups and change the one-sided appearance in the past.
- b. Workbench, equipped with computer, microphone host, sound reinforcement, physical projection, and interactive electronic whiteboard, meets the needs of teachers and students in various types (words, films, and even the introduction of onion mathematics teaching videos), so that students can open their all-round senses for learning, which is more than the previous single type of blackboard, whiteboard, projection, and so on.
- c. Teachers must prepare handouts to give students complete information about class knowledge.
- d. The rhythm of the class is that students learn by themselves, discuss in groups, express in groups, summarize by teachers, and practice in class.

This study as a part of designed action plan by this researcher, would directly be implemented in the three schools of Best Educational Organization in mainland, China. All the full-time teachers who currently work at these three schools would be used as participants. The researcher would use the targeted population as the sample directly, the sampling method is purpose sampling, since the output of this study would be applied in the action plan to improve all the teachers' innovative leadership in the schools managed by the researcher directly.

Research Methodology

Participants

This study planned to take the only three schools of Best Educational Organization in Chinese mainland, as the target research participants. Best Education covers kindergartens, primary schools, and middle schools, which not only emphasizes foreign language learning from kindergarten to middle school, but also attaches importance to the cultivation of learners' multiple intelligences and good habits.

This study as a part of designed action plan by this researcher, would directly be implemented in the three schools of Best Educational Organization in mainland, China. All the full-time teachers, a total of 390 teachers who currently work at these three schools were used as participants, from the end of the first semester to the end of the second semester in early 2023, the purpose sampling method was used in this study.

Questionnaire Design

The questionnaire developed by the researcher in this study was named as *The Questionnaire on Teachers' Innovative Leadership and School Organizational Culture at Primary Schools of Best Education Group, China*. The questionnaire, which was designed by the researcher after the synthesis and systematic literature review on the recent sources and got the experts' IOC validity check and pilot tested.

The questionnaire basically consisted of three parts: The first part was demographic data, mainly including teachers' *gender, age, education level, length of service and positions*.

The second part of the questionnaire is teachers' innovative leadership. The scale contents were explained with details in the second chapter of the paper. The key dimensions include *knowledge and skills, self-awareness, vision and values, creativity, interpersonal relationship, and organizational cultivation*. Each dimension contains 8 items, so the total was about 48 questions. The third part of questionnaire was to assess the teachers' perception of school organizational culture, which is directly adopted from the survey-organizational culture of Saravanan (2013 : 143-165). The factors of school organizational culture used in this part of questionnaire includes *physical factors, social factors, organizational commitment factors and cultural factors*. Each factor contained five items, so the total was 20 questions.

In this study, the data was collected with the assistance of the three schools' HR department and staff, and these data are processed by both qualitative and quantitative methods, including systematic literature review, synthesis, 360-degree interview, descriptive statistics, multivariate analysis of variance (MANOVA), multiple correlation and regression analysis, paired sampled t-test and so on to analyze the data, specific methods were used based on the related research objectives.

Research Conceptual Framework

Based on the above-mentioned literature, the researcher planned to take the teachers of three primary schools of Best Educational Organization as the target group, aiming to explore the teachers' perceptions of innovative leadership in six dimensions through questionnaire part 2, including knowledge and skills, self-cognition, vision and values, creativity, interpersonal relationship, and organizational cultivation. Meanwhile, the questionnaire on school organizational culture developed by Saravanan (2013 : 143-165) was adopted to assess teachers' perceptions of school organizational culture in four aspects: physical factors, social factors, organizational commitment factors, and cultural factors.

During this process, this research will test the effects of demographic factors on teachers' innovative leadership and school organizational culture, the teachers' demographic factors will be studied, and their effects on the teachers' innovative leadership and school organizational culture were be assessed. Then, the correlation between teachers' innovative leadership and school organizational culture were analyzed by correlation analysis and regression test to ensure if there has any correlation between the six aspects of teachers' innovative leadership and the four aspects of school organizational culture. The significant dimensions and findings were analyzed and put into the process of action planning, the new action plan would be applied in one of the sample schools for further implementation and evaluation, to test the effect of the action plan, and to promote the action plan's further implementing in all Best Educational Organization Schools.

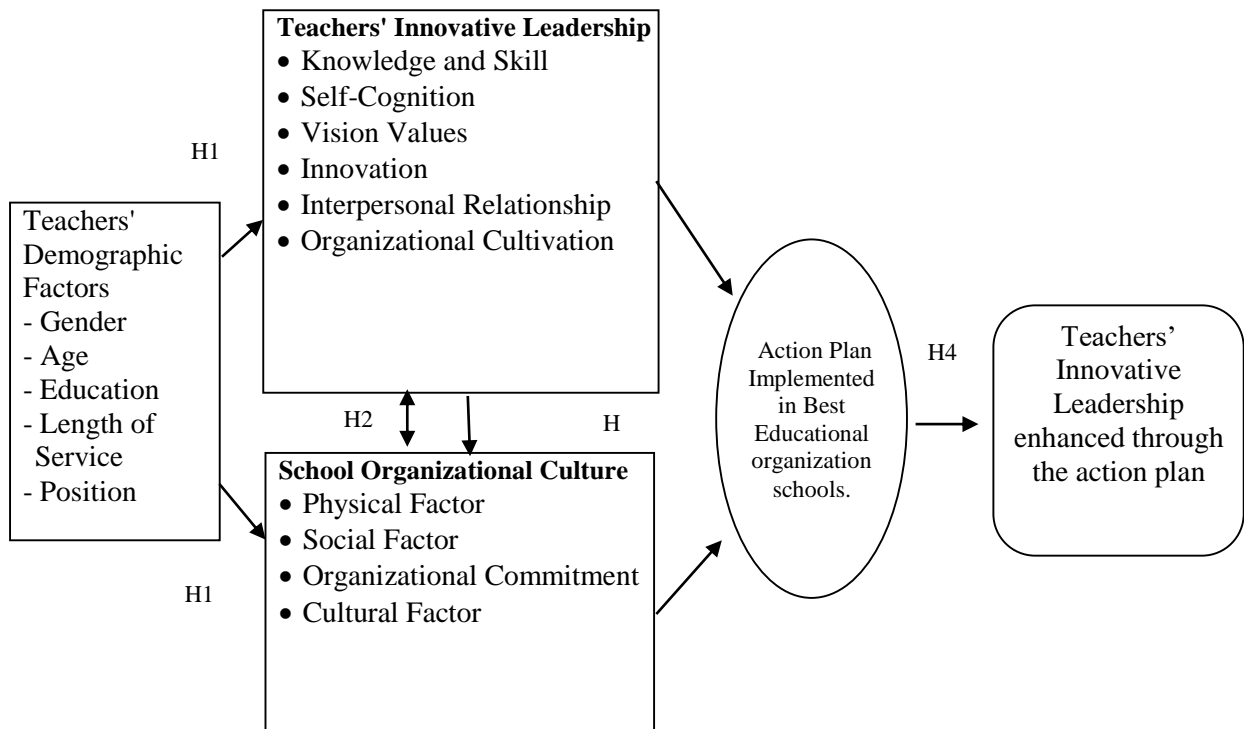


Figure 1.1 Research Conceptual Framework

Figure 1 above presented the conceptual framework for this study, which depicted the major variables and showed the research focuses and procedure.

Research Results

For Research objective one: To determine the level of teachers' innovative leadership at the primary schools of Best Educational Organization, in China.

For this objective, descriptive statistics including means, SD were used to determine the level of teachers' innovative leadership at the primary schools of Best Education Group, in China. Table 1 showed the teachers' innovative leadership at the primary schools of Best Educational Organization, in China.

Table 1. The Level of Teachers' Innovative Leadership at the three primary schools

No.	Dimensions	Mean	SD	Interpretation
1	Knowledge and Skills	3.60	.516	High
2	Self-cognition	3.49	.601	Moderate
3	Vision values	3.45	.548	Moderate
4	Innovation	3.45	.600	Moderate
5	Interpersonal Relationship	3.61	.578	High
6	Organizational Cultivation	3.44	.612	Moderate
Total		3.50	.567	Moderate

Table 1 showed, generally, the teachers' innovative leadership from the three Best Group primary schools in Mainland was at the moderate level, as the total mean scores was 3.50, which was in the range of 2.51-3.50, belonged to the moderate level. Among the six dimensions, the dimension of *Organizational Cultivation* was the lowest ($M=3.44$, $SD=.612$), meanwhile, the dimension of *Knowledge and Innovation* was also low relatively, as the means for these two dimensions were only 3.45. The dimensions were at the moderate levels included *Organizational Cultivation*, *Vision Values Innovation*, and *Self-cognition*, though the dimensions of *Knowledge and Skills* and *Interpersonal Relationship* were at the level of high already.

For Research Objective Two: To determine the level of teachers' perception of school organizational culture at the primary schools of Best Education Group, in China.

For this objective, descriptive statistics including means, SD were used to determine the level of teachers' perception of school organizational culture at the primary schools of Best Education Group, in China. Table 4.9 showed the teachers' perception of school organizational culture at the primary schools of Best Education Group, in China.

Table 2. The Level of Teachers' Perception of School Organizational Culture at the Primary Schools

No.	Factors	Mean	SD	Interpretation
1	Physical factors	3.65	.610	High
2	Social factors	3.59	.591	High
3	Organizational factors	3.60	.548	High
4	Cultural factors	3.49	.602	Moderate
Total		3.58	.567	High

For Research Objective Three: To examine the effect of demographic factors on teachers' innovative leadership and school organizational culture.

For this objective, multivariate analysis of variance (MANOVA) was used to assess the effect of demographic factors on teachers' innovative leadership and school organizational culture; and H 1 had been tested through the MANOVA analysis.

H 1: There are significant differences between teachers' innovative leadership and their perceptions of school organizational culture with teachers' demographic factors.

H 1.1: There are significant differences between teachers' innovative leadership with teachers' demographic factors.

Table 3. Multivariate Test^a for the Effect of Demographic Factors on Teachers' Innovative Leadership

	Effect	Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.977	3597.401 ^b	3.000	255.000	.000
	Wilks' Lambda	.023	3597.401 ^b	3.000	255.000	.000
	Hotelling's Trace	42.322	3597.401 ^b	3.000	255.000	.000
	Roy's Largest Root	42.322	3597.401 ^b	3.000	255.000	.000
KS*SC*V V*I*IR*O C	Pillai's Trace	.000	. ^b	.000	.000	.000
	Wilks' Lambda	1.000	. ^b	.000	256.000	.000
	Hotelling's Trace	.000	. ^b	.000	2.000	.000
	Roy's Largest Root	.000	.000 ^b	3.000	254.000	.000

a. Design: Intercept + KS * SC* VV * I * IR *OC

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

d. Computed using alpha = .05

Note: KS=Knowledge and Skills

SC=Self-cognition

VV= Self-cognition

I= Innovation

IR= Interpersonal Relationship

OC= Organizational Cultivation

From the above Table 3, it showed that when the significance level α was 0.05 (the default), the Sig. Values of KS * SC* VV * I * IR *OC were all 0.000, indicating that demographic factors had a significant effect on teachers' innovative leadership, especially with the six dimensions of *Knowledge and Skills*, *Self-cognition*, *Self-cognition*, *Innovation*, *Interpersonal Relationship*, and *Organizational Cultivation*.

H 1.2: There are significant differences between teachers' perceptions of school organizational culture with their demographic factors.

Table 4. Multivariate Test^a for the Effect of Demographic Factors on Teachers' Perceptions of School Organizational Culture

	Effect	Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.997	9036.340 ^b	2.000	56.000	.000
	Wilks' Lambda	.003	9036.340 ^b	2.000	56.000	.000
	Hotelling's Trace	322.726	9036.340 ^b	2.000	56.000	.000
	Roy's Largest Root	322.726	9036.340 ^b	2.000	56.000	.000
PF*SF*	Pillai's Trace	.756	17.335	4.000	114.000	.000
	Wilks' Lambda	.269	25.954 ^b	4.000	112.000	.000
OCF*CF	Hotelling's Trace	2.617	35.990	4.000	110.000	.000
	Roy's Largest Root	2.580	73.542 ^c	2.000	57.000	.000

a. Design: Intercept + PF*SF*OCF*CF

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

d. Computed using alpha = .05

Note: PF=Physical Factors
SF=Social Factors
OCF=Organizational Commitment Factors
CF=Cultural Factors

From the above Table 4.16, it showed that when the significance level α was 0.05 (the default), the Sig. Values of PF*SF*OCF*CF were all 0.000, indicating that demographic factors had a significant effect on teachers' innovative leadership, especially with the four factors of *Physical Factors*, *Social Factors*, *Organizational Commitment Factors* and *Cultural Factors*. Based on all the above MANOVA tests and Post Hoc Test results, it reflected that the H 1 was accepted, namely, there were significant differences between teachers' innovative leadership and their perceptions of school organizational culture with teachers' demographic factors.

For Research Objective Four: To test the significant relationship between teachers' innovative leadership and their perception of school organizational culture, predict the extent that teachers' perceptions of school organizational culture impact innovative leadership.

For this objective, multiple correlation was used to test the significant relationship between teachers' innovative leadership and their perception of school organizational culture, and regression analysis then was used to predict the extent that teachers' perceptions of school organizational culture impact innovative leadership.

H 2: There is a significant correlation between teachers' innovative leadership and their perceptions of organizational culture.

Based on the research data of SPSS, this researcher conducted Pearson correlation analysis to test the correlation between teachers' innovative leadership and their perception of school organizational culture.

Table 5. Correlation between Teachers' Innovative Leadership and Their Perception of School Organizational Culture

Correlation Coefficient	Six Dimensions of Teachers' Innovative Leadership						Overall Teachers' innovative leadership
Four Factors	KS	SC	VV	I	IR	OC	
PF	.611*	.672*	.752**	.583*	.733**	.824**	.813***
SF	.623*	.602*	.781**	.606*	.785**	.831**	.812***
OCF	.583*	.643*	.751**	.645*	.705*	.793	.850***
CF	.582*	.653*	.782**	.635*	.724**	.819***	.851***
Overall School Organizational Culture	.642*	.714**	.822**	.712**	.795***	.920***	.835***

$N=357$, * $p<.05$, ** $p<.01$, *** $p<.005$

Table 5 presents the p values and Pearson correlation coefficient results between the dimensions of teachers' innovative leadership and the factors of their perception of school organizational culture. Based on the analysis results of Pearson's correlation coefficient, the correlation coefficient values of the six dimension of teachers' innovative leadership perception and the four factors of school organizational culture were all highly correlated, among them, most of the correlations belong to moderate to high positive correlation. The overall Teachers' innovative leadership was highly correlated with their perception of school organizational culture, as shown that all aspects are highly positively correlated with the overall relevance.

H 3: Teachers' perceptions of school organizational culture significantly impact their innovative leadership.

Table 6. Regression Analysis of the Predictive Power of School Organizational Culture on Teachers' Innovative Leadership

TIL Dimensions	OC factors	R	R ²	ΔR^2	B	β	Sig
Knowledge and skills	PF	.648	.420	.413	.216	.232	.004***
	SF				.304	.216	.001***
	OCF				.058	.062	.497
	CF				.085	.090	.296
Self-cognition	PF	.723	.522	.517	.189	.218	.003***
	SF				.363	.390	.000***
	OCF				-.002	-.002	.982
	CF				.142	.161	.040*
Vision Values	PF	.825	.680	.676	.135	.156	.010*
	SF				.287	.311	.000***
	OCF				.026	.028	.197
	CF				.287	.328	.000***
Innovation	PF	.721	.520	.514	.247	.262	.000***
	SF				.386	.382	.000***
	OCF				-.085	-.087	.040*
	CF				.141	.147	.061
Interpersonal Relationship	PF	.798	.636	.632	.149	.173	.007**
	SF				.447	.485	.000***
	OCF				-.012	-.014	.849
	CF				.175	.200	.004***
Organizational Cultivation	PF	.867	.752	.749	.350	.363	.000***
	SF				.434	.419	.000***
	OCF				.005	.005	.927
	CF				.129	.131	.020*
Overall	PF	.859	.738	.735	.214	.267	.000***
	SF				.370	.431	.000***
	OCF				.017	.020	.740

Teachers' Innovative Leadership	CF				.160	.196	.001***
	Overall	.850	.722	.721	.752	.850	.000***
	Organizational Culture						

Note: N=357 , * $p < .05$, ** $p < .01$, *** $p < .005$

Table 6 showed that the "physical factors" and "social factors" had a significant predictive effect on the "knowledge skills" of teachers' innovative leadership, indicating that the "physical factors" and "social factors" in school organizational culture would deeply affect teachers' feelings of "knowledge skills". In addition, the "innovation" dimension of teachers' innovative leadership was also affected by "physical factors" and "social factors". The regression analysis proved that H 3 was accepted, which means teachers' perceptions of school organizational culture significantly impact their innovative leadership.

For Research Objective Five: To develop an action plan to enhance teachers' innovative leadership based on school organizational culture.

For this objective, based on the main quantitative findings from the correlation and regression analysis, and the descriptive findings of teachers' innovative leadership and their perceptions of school organizational culture, this researcher conducted a series of steps for the action plan production and implementation.

Step 1: The researcher deeply studied the analysis results, developed a model for proposing a culture-oriented action plan for improving teachers' innovative leadership at Best Educational Organization Schools.

Step 2: The developed model would also be checked and validated by 11 experts with rich research and management experiences in the educational administration field.

Step 3: After that the action plan would be proposed based on the model, and the action plan would be implemented and processing in the Best Educational Organization schools in Zhengzhou, China.

Step 4: To implement the action plan, the researcher would apply various leadership training, seminars, workshops, organizational culture development activities were conducted for promoting teachers' innovative leadership in the school.

Based on the explanation in the last section, this researcher chose one primary school of Best Educational Organization, which was Bilingual Languages Primary School located in Zhengzhou to implement the action plan. During three rounds of action plan implementation, the researcher conducted many activities, such as "production of Sharestart handout", "hold diversified mathematics competition", and "SDGS experience sharing". The detailed contents and activities of the entire action plan are summarized in Figure 2.

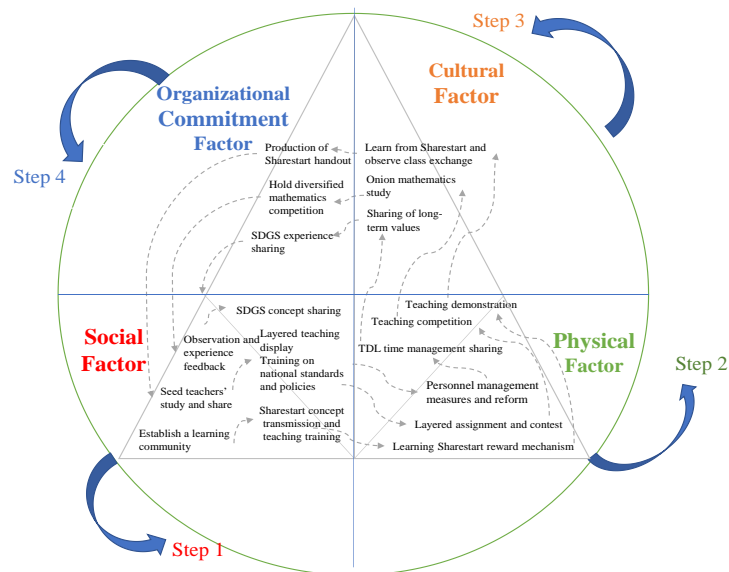


Figure 2. Detailed Contents of Action Plan Activities

For Research Objective Six: To evaluate the teachers' innovative leadership before and after implementing the action plan.

For this objective, the researcher first retested the teachers' innovative leadership after implementing the action plan and compared the teachers' innovative leadership mean scores by using paired sample t-test. Secondly, the related training and activities satisfaction were also reported, 360-degree feedback from teachers, interviews with leaders, were applied to examine the effect of action plan.

H 4: Teachers' innovative leadership after implementing the action plan can be improved.

The researcher assessed the teachers' innovative leadership after implementing the action plan and compared the teachers' innovative leadership mean scores by paired samples t-test. Table 4.22 showed all the teachers' innovative leadership means scores and the overall level were improved.

Table 4.23 Paired Sample T-test Teachers' Innovative Leadership at Best Foreign Languages Primary School before and after the Action Plan Implementation

Pair Samples t-test	Mean difference	SD	t	Sig. (2-tailed)
TIL Before AP- TIL After AP	-.586	.367	-2.005	.001***

Note: N=117 , *** $p < .005$

Table 4.23 further confirmed that there was a significant difference of the teachers' innovative leadership before and after the action plan was implemented since the p value is .001, which was less than .05. Thus, H 4 was proved true and accepted, which means Teachers' innovative leadership after implementing the action plan can be improved.

Moreover, the related training and activities satisfaction were also reported, 360-degree feedback from teachers, interviews with leaders, parents, and students were applied to examine the effect of action plan.

Discussion

About Teachers' Innovative Leadership

This study found teachers' innovative leadership from the three Best Group primary schools in Mainland was at the moderate level, meanwhile, the dimension of *Innovation* was also low relatively. The dimensions were at the moderate levels included *Organizational Cultivation*, *Vision Values Innovation*, and *Self-cognition*, though the dimensions of *Knowledge and Skills* and *Interpersonal Relationship* were at the level of high already.

Examining all these lowest mean scores reflected those teachers at Best group eager to learn more about the learning theories, they hope can have more self-style in terms of dealing with the school matters; they hope to take every possible opportunity to convey the school vision to the team, students, parents, community, and others; they valued colleague's view and may not yet reach a consensus with the school administrators in some ways of decision-making.

Consistent with the points of Şena & Eren (2012), the current research focused on the teachers' innovative leadership, which is also aiming to create the most appropriate and effective teaching strategies and practical courses through the community combination established by school leaders that transnational boundaries, through the management of professional knowledge of each community, and the cooperation across cultural barriers of different communities, through the display of leadership style and influence, and the participation of the leaders' community in decision-making operation, so as to improve the personal achievements and organizational goals, shape the core values of the organization and enhance the school. Therefore, teachers' innovative leadership is a process of teachers' professional development, whose goal is to promote positive changes in students, school administrators, teachers' peers, parents, communities, and campus culture, and further achieve the goal of school improvement as described by Katzenmeyer & Moller (2009).

According to the foregoing, teachers' leadership has become one of the main development trends of contemporary school innovation and leadership theory and practice, Murphy (2005) also mentioned the current teacher innovative leadership need to be improved still, as they are neglected easily in the process of school daily management. As for the empirical research on teachers' innovative leadership in China, Gong (2011 : 52-55) conducted a survey on rural schools in Napo County, Guangxi, and found that there were some problems in the leadership construction of female teachers in ethnic villages in Guangxi, such as leadership myth, lack of subjective consciousness, false representation, glass ceiling, etc. That is, there is still a lack of a more modern concept of transformational leadership. Lo & Chen's (2007) research on regular (backbone) teachers pointed out that backbone teachers play an important role in various professional development activities, but they also show the characteristics of elitism, hierarchy, and instrumentality. In addition, Lo & Chen (2007) found that due to administrative interference everywhere, teachers' professional development is full of utilitarian color, compulsion, and passivity, all these previous findings are consistent with

this study.

About Teachers' Perception of School Organizational Culture

This study found the teachers' perception of school organizational culture from the three Best Group primary schools in Mainland, different from their innovative leadership, it was at the high level in general, this factor was still at the moderate level, the physical factors were the highest. As Katzenmeyer & Moller (2001) supported, Effective teacher leaders can exert their influence, promote the decision-making and participation of the school community towards sharing, and create a better democratic atmosphere of school organizational culture and cooperation.

About the Effect of Demographic Factors on Teachers' Innovative Leadership and School Organizational Culture.

This study used multivariate analysis of variance (MANOVA) to assess the effect of demographic factors on teachers' innovative leadership and school organizational culture; and the MANOVA analysis result proved that There are significant differences between teachers' innovative leadership with teachers' demographic factors.

Comparing the finding of school organizational culture with other study conducted in China, Song, Hu, & Yang (2007 : 25-28) also found that teachers perceived organizational culture varies with seniority and school type. Leithwood, Jantzi, & Steinbach (1999 : 163) revealed that teachers' innovative leadership is an effective way to promote school innovation, because they are the practical workers in the education field and will be the best practitioners and leaders. If all innovative actions can be gradually implemented in a button-up way, initiated, and led by teachers, it is easier to get the recognition and support of other colleagues.

Effective teacher leaders can exert their influence, promote the decision-making and participation of the school community towards sharing, and create a better democratic atmosphere of school organizational culture and cooperation (Katzenmeyer & Moller, 2001). In addition to demographic variables that may cause differences in school organizational culture, school organizational culture has also been proved to change education or innovate teaching, such as building consensus and belonging, adjusting changes, and guiding changes (Frost & Durrant, 2003 : 173-186 ; Wenner & Campbell, 2017 : 134-171).

About the Relationship between Teachers' Innovative Leadership and Their Perception of School Organizational Culture and the Extent That Teachers' Perceptions of School Organizational Culture Impact Innovative Leadership

This study tested the significant relationship between teachers' innovative leadership and their perception of school organizational culture, predicting the extent that teachers' perceptions of school organizational culture impact innovative leadership. In the process of testing, multiple correlation was used to test the significant relationship between teachers' innovative leadership and their perception of school organizational culture, and regression analysis then was used to predict the extent that teachers' perceptions of school organizational culture impact innovative leadership.

Based on the research findings, this researcher tested the correlation between teachers' innovative leadership and their perception of school organizational culture. Pearson correlation coefficient results between the dimensions of teachers' innovative leadership and the factors of their perception of school organizational culture. Based on the analysis results of Pearson's correlation coefficient, the correlation coefficient values of the six dimension of teachers' innovative leadership perception and the four factors of school organizational culture were all

highly correlated, among them, most of the correlations belong to moderate to high positive correlation. The overall Teachers' innovative leadership was highly correlated with their perception of school organizational culture, as shown that all aspects are highly positively correlated with the overall relevance.

Teachers and school organizational culture are emerging research topics in education in recent decades. Based on Chew & Andrews (2010 : 59-74), what they have in common is that they emphasize empowering the members of the organization and stimulating the members of the organization to have a high degree of intrinsic motivation and be willing to pay for the organization. However, according to the current research of Gong (2021 : 52-55) and Liao (2020), they both pointed out that teachers' leadership or school organizational culture may be deeply influenced by demographic factors, and a good school organizational culture has great potential to enhance teachers' innovative leadership skills. In addition, most teachers in China still generally have a low concept of teachers' leadership, and their organizational culture in schools is also very limited. Therefore, it will be a feasible model in the future to build a school organization culture, explore its interaction with teachers' innovative leadership, and promote the sustainable development of school organization and management.

Although organizational culture can help members discover their own feelings and influences on their own organizations, a good school organizational culture may improve teachers' innovative leadership skills. However, according to previous researchers like Crowther (2002) and Dan (2020 : 148), the development of teachers' leadership research was only in recent decades, and the research on teacher innovation leadership was extremely limited. Therefore, there is not much empirical research on the relationship between school organizational culture and teacher innovation leadership at present. Although this paper expects the positive interaction between school organizational culture and teacher innovation leadership. However, because each school organization has its own unique structure, specific norms, and values, what is the impact of the developed organizational culture on teachers' innovative leadership? Whether a good school organizational culture, as proved by similar research, can really improve school effectiveness (Evans, 2003 : 424-437); it was the influence on teachers' innovative leadership effectiveness, and it was indeed a research topic to be solved in the future.

Conclusions

This study took three Best Educational Organization's Primary Schools in China as a research object, to assess and explore the relationship between teachers' innovative leadership and teachers' perception of school organizational culture. According to the research objectives, the specific conclusions were as follows:

1) Teachers' perception of innovative leadership before implementing the action plan was at a moderate level in this study. In terms of each level and the overall current situation, the primary school teachers' innovative leadership was moderate. 2) Teachers' overall perception of school organizational culture was at a high level. 3) Teachers' perceptions of innovative leadership and their perception of school organizational culture were significantly different according to their demographic factors such as age, service years, and position variables. 4) Teachers' perceptions of innovative leadership were highly positively correlated with perceptions of school organizational culture Teachers' perception of innovative leadership is highly positively correlated with their overall perception of school organizational culture; Teachers' perceptions of innovative leadership and perceptions of school organizational culture

were predictive. 5) Teachers' innovative leadership after implementing the action plan was increased. Meanwhile, the researcher conducted a series of related training and activities based on the model as action plan implementation, the effect of action plan was regarded as effective, since the school internal satisfaction surveys, 360-degree feedback from teachers, interviews with teacher leaders reflected.

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