

INFLUENCING FACTORS OF TEACHERS' INNOVATION BEHAVIOR IN PRIVATE COLLEGES AND UNIVERSITIES

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Abstract

This study explored the effects of five independent variables (Transformational et al. Group Cohesiveness, Individual Learning Orientation, Emotional Intelligence) on the dependent variables (Innovation behavior). Furthermore, it also aims to identify significant differences between the variables. The research employed the Index of Item-Objective Congruence (IOC) for validity and a Cronbach's Alpha in a pilot test (n=60) for reliability. The multiple linear regression analyzed 80 valid responses from Zhanjiang University of Science and Technology teachers to verify the significant relationship between variables. Following this, 30 teachers underwent a 14-week Strategic Plan Implementation (SPI). Afterward, the quantitative results from post-SPI and pre-SPI were analyzed in the paired-sample t-test for comparison. The multiple linear regression results show that transformational leadership, empowering leadership, workgroup cohesiveness, individual learning orientation, and emotional intelligence have a significant influence on teachers' innovative behavior. Comparative results by paired sample t-test showed significant differences in teachers' innovative behavior between post-SPI and pre-SPI phases. This study provides a reference for private colleges and universities to improve teachers' innovative behavior and creative ability and realize high-quality development.

Keywords: Transformational Leadership, Empowering Leadership, Individual Learning Orientation, Emotional Intelligence, Innovation Behavior

Introduction

Today, innovation has become an important driving force for national development. As early as 2014, China introduced the concept of innovation and entrepreneurship for the first time at the Economic Work Conference. In the 20th report, China's top leaders clearly stressed the need to comprehensively improve the quality of personnel training and focus on training a group of high-end talents with innovative spirit and entrepreneurial ability.

With the support of national policies, Zhanjiang University of Science and Technology has proposed to build an innovative and entrepreneurial university to cultivate more talents with innovative consciousness and entrepreneurial ability. In the process of realizing this goal, teachers play a decisive role. They are not only the mentors who guide students to explore the road of innovation but also the core force that promotes students' innovation and entrepreneurship practice. As the main education body, teachers' innovative behavior is significant for cultivating a new generation with an innovative spirit. However, the formation and development of teachers' innovative behavior are influenced by many intertwined factors that make the study of teachers' innovative behavior appear complex and interesting.

Therefore, it has become a key topic for improving the factors influencing teachers' innovation behavior and clarifying the field of education. This study explores the factors that influence teachers' innovative behaviors in private universities, hoping to provide beneficial inspiration for educational policymakers, educational administrators, and teachers, jointly promote educational innovation, and contribute to cultivating innovative talents.

Literature Review

1. Innovative Behavior

Back in 1989, West and Farr proposed that innovative behavior is not just a personal trait but behavior that improves role performance and team performance in an organization or team by consciously developing, introducing, and implementing new ideas, strategies, or methods. Innovation behavior is a key factor for the organization to seek competitive advantage, maintain long-term development, and achieve the success of the enterprise because innovation behavior helps to improve the work efficiency and performance of the organization, to realize the appreciation of the enterprise value (Imran et al., 2010). In the context of this research, this definition of innovative behavior is adopted.

2. Transformational Leadership

According to Burns (1978), transformational leadership is the capacity of leaders to support followers in realizing self-transformation, steer organizational change to address a variety of obstacles, and seize opportunities in the process of assisting the organization in advancing its goals and overcoming obstacles during the organizational change phase. The transformative leadership proposed by Bass and Avolio (1994) refers to the ability of leaders to adapt to the changing situation and the changing requirements of The Times, to lead and

motivate followers, to seize historical opportunities, to respond to various challenges, and to achieve common goals. It is also defined as the ability to achieve individual metamorphosis by changing the members' emotions, morality, values, norms of action, and long-term goals (Jaruwanakul, 2021). Hence, a hypothesis is derived:

H1: Transformational leadership has a significant impact on innovative behavior.

3. Empowering Leadership

Arnold et al. (2000) defines empowerment leadership as a way of behavior in which leaders give subordinates rights and responsibilities and motivate subordinates to conduct self-development. Leach et al. (2003) define empowerment leadership as the leader's ability to enhance their autonomy by assigning more autonomy and responsibilities to subordinates, teams, or collectively. Authorization leadership is obviously different from other types of leaders. The purpose of authorization leadership is to cultivate the self-development of employees, adopt "decentralization" to break the boundary between leaders and followers, and give employees rights and responsibilities outside their own work (Spreitzer, 1995). Empowering leadership can help create an atmosphere in which employees feel encouraged and supported to explore creative solutions and promote their innovative behavior (Amabile, 1996). Hence, a hypothesis is derived:

H2: Empowering leadership has a significant impact on innovative behavior.

4. Work Group Cohesiveness

Leonard Festinger put forward the concept of "group cohesiveness" as early as 1950. Group cohesiveness refers to the close association and interdependence of members within a group that can be achieved through shared goals, beliefs, values, and norms of conduct. Group cohesion is important for group stability and development. In the study on group cohesion, scholars believe that group cohesion is an important factor affecting innovation behavior. The findings of West and Farr (1989) suggest a positive association between group cohesiveness and innovation behavior. Improving group cohesiveness can stimulate the creativity of members and promote the generation of innovative behaviors, thus driving the sustainable development of the group and organization. Hence, a hypothesis is derived:

H3: Work group cohesiveness has a significant impact on innovative behavior.

5. Individual Learning Orientation

Sinkula et al. (1997) proposed that personal learning orientation (Individual et al.) refers to the attitude, beliefs, and behavioral tendencies of individuals in the face of new knowledge and skills. Individual learning guides focus on the initiative, exploration, self-regulation, reflection, and summary of individuals in the face of new knowledge, skills, and challenges. Individual learning orientation is a key factor that influences the individual learning process and outcomes. Sinkula et al. (1997) believes that the individual learning orientation has an important impact on the individual's career development, innovation ability, and teamwork. The link between individual learning orientation and innovative behavior has been

widely studied. Calantone et al. (2002) studied the direct relationship between innovative behavior and individual learning orientation and showed that individuals with higher individual learning orientation tend to have a strong ability to explore new. Hence, a hypothesis is derived:

H4: Individual learning orientation has a significant impact on innovative behavior.

6. Emotional intelligence

Emotional intelligence is a concept that covers individual qualities in emotions, beliefs, and frustration. Carroll (1993) proposed that EQ mainly includes the following aspects: self-knowledge, individual cognition and understanding of their emotions, needs, and advantages; emotional constraints, individuals can keep calm, rational, and not emotionally controlled; emotional regulation, individuals can adjust their emotional state to adapt to different situations and challenges. Cognitive ability: an individual's ability to process emotional information, solve problems, and think creatively. Emotions of others: individual perception, understanding, and coping with others' emotions, as well as compassion and care shown in interacting with others. Emotional intelligence affects a person's psychological quality, interpersonal relationships, leadership, and innovative behavior. Dincer et al. (2011) empirically analyzed the correlation between innovation behavior and EQ, and the results showed that the level of emotional intelligence largely determines the individual's ability to respond to innovation challenges. Hence, a hypothesis is derived:

H5: Emotional intelligence has a significant impact on innovative behavior.

Research Framework

The researchers applied three model theories from Afsar and Umrani (2020), Mutonyi et al. (2020), and Malik (2020). All three of the above-mentioned theoretical frameworks support and develop the conceptual framework in Figure 1.

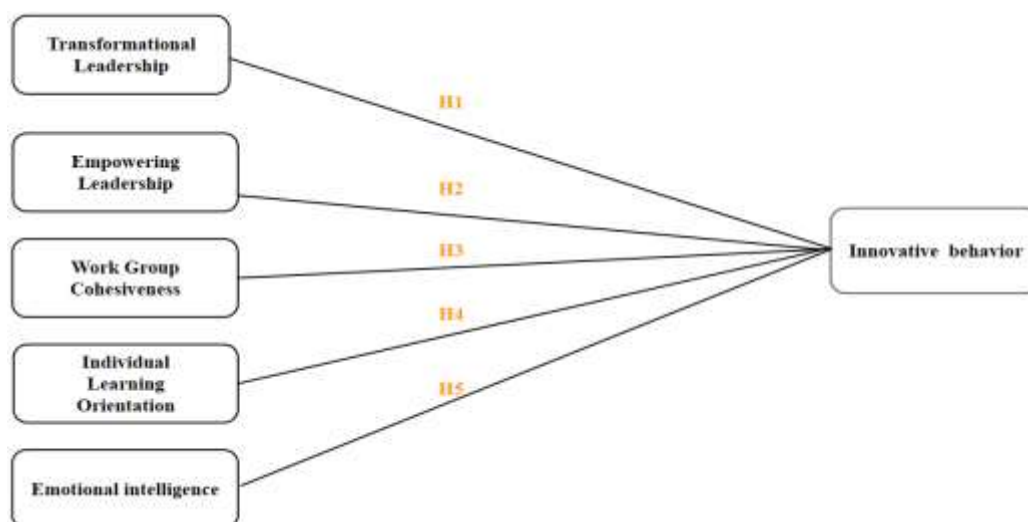


Figure 1 Conceptual Framework

The hypotheses of the research variables based on the conceptual framework are;

H1: Transformational leadership has a significant impact on innovative behavior.

H2: Empowering leadership has a significant impact on innovative behavior.

H3: Work group cohesiveness has a significant impact on innovative behavior.

H4: Individual learning orientation has a significant impact on innovative behavior.

H5: Emotional intelligence has a significant impact on innovative behavior.

Research Methodology

The research process was divided into four different stages. The first stage was to verify the significant impact of independent variables on dependent variables. A questionnaire survey was conducted among 80 teachers selected proportionally from 10 secondary colleges of Zhanjiang University of Science and Technology, and the data were collected using the five-level Likert scale. Subsequently, the multivariate linear regression analysis was conducted using statistical software to determine the significance when the p -value < 0.05 .

Research Population, Sample Size, and Sampling Procedures

1. Research Population

There are 14 colleges in Zhanjiang University of Science and Technology, and the researchers' selected teachers from 3 of them as the research group of this study, namely, School of Accounting, School of Economics, and School of Financial Management. By 2023, there will be 58 teachers in the School of Accounting, 74 teachers in the School of Management, and 108 teachers in the School of Economics and Finance, with a total of 240 teachers. Since the conceptual framework constructed in this study contained six variables, the minimum number of samples for the linear regression analysis was 60 teachers. To prevent the influence of questions such as invalid questionnaires on the valid questionnaire data, the sample number was set to 80 teachers.

2. Sample size

In the initial diagnostic stage, the sample size of the test was 15 for reliability and 80 for multiple linear regression tests. In the SPI stage, 30 teachers were selected as participants in implementing the SPI. Furthermore, these 30 teachers will serve as respondents in the post-SPI phase, using the same study procedures as in the pre-SPI phase.

3. Sampling Procedures

The researcher performed multiple sampling, with the relevant sampling procedure as follows:

Sample 1: 240 ZUST teachers were selected for the pre-survey. The researcher sent questionnaires to 240 teachers through the questionnaire star APP. The researcher checked all the answers and confirmed that 60 questionnaires were suitable for further investigation.

Sample 2: The researchers selected 30 teachers from the school of accounting to

implement the SPI.

Sample 3: In the post-SPI stage, 15 teachers were randomly selected from 30 participants to participate in the interview, to evaluate the results of the SPI.

Research Instruments

1. Design of Questionnaire

The researcher designed the survey questionnaire by following three steps.

Step1: Identifying questionnaire sources from three
openly published articles (Afsar & Umrani, 2020; Malik, 2020; Mutonyi et al., 2020)

Step2: Adjusting and Presenting survey questionnaires
about factors related to teachers' innovative behavior.

Step 3: Implementing IOC.

2. Components of Questionnaire

Survey questionnaire items were composed of the following two parts:

Part 1: Basic information Questions. There were questions to gain basic information about the research population, including gender, age, college, Teaching years, and title.

Part 2: Pre-survey Questions. There were questions for the pre-survey to find out the current level of IV and DV for a total of 240 ZUST teachers.

3. IOC Results

The researcher invited five independent experts to implement IOC (Index of item-objective congruence). Two experts (experts 1 and 2) are from Nanjing University of Finance and Economics and have experience in innovation, and the other three experts (experts 3, experts 4, and experts 5) are from Zhanjiang University of Science and Technology.

In this IOC process, independent experts marked +1 for Congruent, 0 for Questionable, and -1 for Incongruent. After the independent judgment of five experts on the scale, TL kept six questions, EI kept seven, and IB kept seven. The experts gave 1 point to all three variables of EL, WGC, and ILO.

4. Pilot survey and Pilot test results

The researchers randomly conducted a pilot survey of 60 teachers, asking them to complete the questionnaire and give feedback. Afterward, they implemented Cronbach's Alpha's internal consistency reliability test, in which values should be equal to or greater than 0.7 (Nunnally & Bernstein, 1994). Therefore, the table below demonstrates the approved results for the high reliability of each construct.

Table 1 Pilot Test Result

Variables	No. of items	Sources	Cronbach's Alpha	Strength of association
Transformational leadership	6	Bass and Avolio (1994)	0.926	Excellent
Empowering leadership	3	Leach et al., (2003)	0.870	Very Good
Work group cohesiveness	3	Mudrack (1989)	0.801	Very Good
Individual learning orientation	3	Vandewalle (1997)	0.792	Good
Emotional intelligence	7	Goleman (1998)	0.888	Very Good
Innovative behavior	7	West and Farr (1989)	0.942	Excellent

Results and Discussion

1. Demographic Information

The researcher demonstrated the demographic profile of the entire research population (n=60), followed by the selected teacher's group (n=30), who participated in SPI, as shown in Table 2.

Table 2 Demographic Profile

Entire Research Population (n=60)		Frequency	Percent
Gender	Male	16	26.7
	Female	44	73.3
Age	Under 30 years old	6	10
	Between 30 and 40 years old	35	58.3
	Between 40 and 50 years old	12	20
	Over 50 years old 50	7	11.7
College	College of Accounting	41	68.3
	College of Management	9	15
	College of Economics and Finance	10	16.7
Teaching years	Less than 5 years 5	13	21.7
	5-10 years	26	43.3
	10-15 years	11	18.3
	Over 15 years 15	10	16.7
Title	Teaching assistant	9	15
	Lecture	38	63.3
	Associate professor	9	15
	Professor	4	6.7
Total		60	100%

Table 2 (Continue)

SPI Participants (n=30)		Frequency	Percent
Gender	Male	8	26.67%
	Female	22	73.33%
Age	Between 30 and 40 years old	16	53.33%
	Between 40 and 50 years old	9	30%
	Over 50 years old	5	16.67%
College	College of Accounting	30	100
	College of Management	0	0
	College of Economics and Finance	0	0
Teaching years	Less than 5 years 5	4	13.33%
	5-10 years	15	50%
	10-15 years	4	13.33%
	Over 15 years 15	7	23.33%
Title	Teaching assistant	2	6.67%
	Lecture	17	56.67%
	Associate professor	9	30%
	Proessor	2	6.67%
Total		30	100%

2. Results of multiple linear regression

The researcher conducted a multiple linear regression analysis on the results of 60 questionnaires, and Table 3 shows the results of the multiple linear regression analysis. The significance test showed that all the p-values were less than 0.05, indicating that all the five dimensions of the independent variables had a significant effect on the dependent variable (Vongurai, 2024). Based on the variance inflation factor (VIF) analysis, it can be concluded that multicollinearity is not a concern since the VIF value is below 5 (Hair et al., 1995). The R-squared value was 0.297, indicating that the independent variables accounted for 29.7% of the dependent variables.

Table 3 The multiple linear regression of five independent variables on teacher's job Satisfaction

Variables	Standardized Coefficients Beta value	t-value	P-value	VIF	R ²
Transformational Leadership (TL)	0.237	2.28	0.026	1.63	0.297
Empowering Leadership (EL)	0.173	2.22	0.031	1.20	
Work group cohesiveness (WGC)	0.134	2.08	0.042	1.11	
Individual learning orientation (ILO)	0.188	2.37	0.021	1.20	
Emotional Intelligence (EI)	0.287	2.05	0.045	1.43	

Note: p-value <0.05*

The results in Table 3 support these five hypotheses, which are supported by the results of multiple linear regression. In the SPI stage, the researcher proposed the following hypotheses:

H6: Transformational leadership is significantly different between the Pre-SPI and Post-SPI stages.

H7: There is a significant mean difference in empowering leadership between Pre-SPI and Post-SPI stages.

H8: There is a significant mean difference in workgroup cohesiveness between Pre-SPI and Post-SPI stages.

H9: There is a significant mean difference in individual learning orientation between the Pre-SPI and Post-SPI stages.

H10: There is a significant mean difference in emotional intelligence between Pre-SPI and Post-SPI stages.

H11: There is a significant mean difference in innovative behavior between Pre-SPI and Post-SPI stages.

3. Strategic Plan Stage

The Strategic Implementation Plan (SPI) lasted 14 weeks, based on quantitative and qualitative data collected during the pre-SPI phase, to achieve the purpose of this study, namely to improve the innovative behavior of teachers in private universities. Figure 2 shows the specific implementation arrangement of SPI.

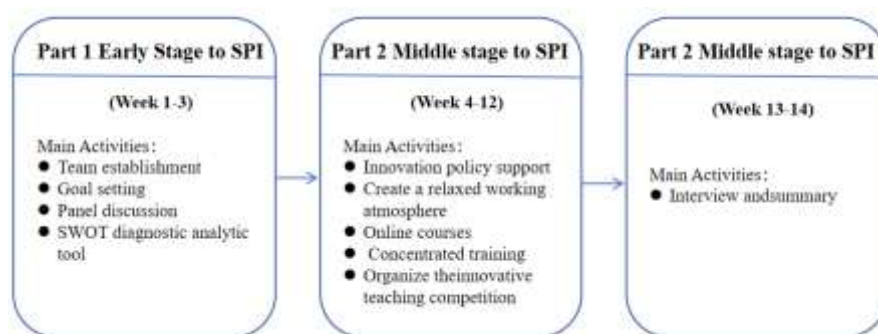


Figure 2 SPI Activities

4. Results Comparison between Current Situation and Expect Situation

A paired-sample t-test analysis was performed for all six variables to determine whether there were differences in teacher innovation behavior during the pre-SPI and post-SPI phases. The paired five t-test analysis for the six variables is shown in Table 4:

Table 4 Paired-Sample T-Test Results

Variables	Mean	SD	P-Value
Pre-SPI	4.29	0.519	<.001
Post-SPI	2.29	0.497	
Pre-SPI	4.19	0.493	<.001
Post-SPI	2.33	0.561	
Pre-SPI	4.11	0.563	<.001
Post-SPI	2.32	0.507	
Pre-SPI	4.51	0.493	<.001
Post-SPI	2.30	0.663	
Pre-SPI	4.28	0.483	<.001
Post-SPI	2.30	0.484	
Pre-SPI	4.28	0.498	<.001
Post-SPI	2.34	0.587	

There was a significant increase in transformational leadership between post-SPI (M=4.29, SD=0.519) stage and pre-SPI stage (M=2.29, SD=0.497), while $P < 0.001$ and mean value difference between post-SPI stage and Pre-SPI stage was 2. Therefore, hypothesis 6 supported that there is a significant difference in transformational leadership between Pre-SPI and

Post-SPI stages.

There was a significant increase in empowering leadership between the post-SPI (M=4.19, SD=0.493) stage and pre-SPI stage (M=2.33, SD=0.561), while $P < 0.001$ and mean value difference between the post-SPI stage and Pre-SPI stage was 1.86. Therefore, hypothesis 7 supported that there is a significant difference in empowering leadership between Pre-SPI and Post-SPI stages.

There was a significant increase in workgroup cohesiveness between post-SPI (M=4.11, SD=0.563) stage and pre-SPI stage (M=2.32, SD=0.507), while $P < 0.001$ and mean value difference between post-SPI stage and Pre-SPI stage was 1.79. Therefore, hypothesis 8 supported that there is a significant difference in workgroup cohesiveness between Pre-SPI and Post-SPI stages.

There was a significant increase in individual learning orientation between post-SPI (M=4.51, SD=0.493) stage and pre-SPI stage (M=2.30, SD=0.663), while $P < 0.001$ and mean value difference between post-SPI stage and Pre-SPI stage was 2.21. Therefore, hypothesis 9 supported that there is a significant difference in individual learning orientation between Pre-SPI and Post-SPI stages.

There was a significant increase in emotional intelligence between the post-SPI (M=4.28, SD=0.483) stage and pre-SPI stage (M=2.30, SD=0.484), while $P < 0.001$ and mean value difference between the post-SPI stage and Pre-SPI stage was 1.98. Therefore, hypothesis 10 supported that there is a significant difference in emotional intelligence between Pre-SPI and Post-SPI stages.

There was a significant increase in innovative behavior between the post-SPI (M=4.28, SD=0.498) stage and pre-SPI stage (M=2.34, SD=0.587), while $P < 0.001$ and mean value difference between the post-SPI stage and Pre-SPI stage was 1.94. Therefore, hypothesis 11 supported that there is a significant difference in innovative behavior between Pre-SPI and Post-SPI stages.

The researcher reached the following conclusions based on the above-paired sample t-test results. First, all six variables showed significant mean differences between the post-SPI and pre-SPI phases. Second, the researchers found significant improvements in teacher innovative behavior during the pre-SPI and post-SPI stages.

Conclusions, Recommendations, Limitations and Future Research

1. Conclusions

This study explored the effects of five independent variables, including transformational leadership, empowering leadership, workgroup cohesiveness, individual learning orientation, and emotional intelligence, on teacher innovation behavior. A comprehensive analysis of both quantitative and qualitative aspects draws meaningful conclusions.

The research design incorporated the use of the Index of Item-Objective Congruence (IOC) for validity and Cronbach's Alpha in a pilot test to ensure the reliability of the measurement instruments. This rigorous approach to measurement strengthened the credibility of the research. Data were collected from 60 valid responses from Zhanjiang University of Science and Technology teachers. They were subjected to multiple linear regression analyses to verify the significant relationships between the independent and dependent variables. Moreover, a 14-week Strategic Plan Implementation (SPI) was carried out with 30 selected teachers' groups. Post-SPI data were collected and compared with pre-SPI data using a paired-sample t-test.

The results show that transformational leadership, empowering leadership, workgroup cohesiveness, individual learning orientation, and emotional intelligence all significantly influence teacher innovative behavior.

This shows that to promote teachers' innovative behavior, leaders must first have the foresight and the ability to lead the team in innovation and development. At the same time, leaders must trust and support team members to give teachers enough power and space to exert creativity. Secondly, strengthening team building is helpful for communication and cooperation between teachers and promotes generating innovative results. Then, teachers must be aware of the ability to continuously learn and constantly improve their professional quality and knowledge reserve. Personal learning orientation helps teachers find problems, explore solutions in teaching practice, and provide a source of innovation. Finally, teachers need to have a high EQ and effectively handle relationships with students, colleagues, and leaders. High EQ helps create a harmonious educational environment and encourages teachers to do innovative work better.

The comparative results of the paired sample t-test showed significant differences between the post-SPI phase and pre-SPI phase in transformational leadership, empowering leadership, workgroup cohesiveness, individual learning orientation, and emotional intelligence on teacher innovation behavior. This suggests that the 14-week strategic plan implementation is conducive to improving transformational leadership, empowering leadership, workgroup cohesiveness, individual learning orientation, and emotional intelligence, positively influencing teachers' innovative behavior.

In short, this study deeply discusses the factors affecting the innovative behavior of teachers in private colleges and universities and provides beneficial enlightenment for innovative education and teacher development in private colleges and universities. These findings are conducive to improving teachers' innovative behavior in private colleges and universities, promoting the schools to achieve the goal of innovative and entrepreneurial universities, and further promoting the high-quality development of private colleges and universities in China. On this basis, private colleges and universities can train more talented people with innovative spirits and abilities for the country and contribute more to economic

and social development.

2. Recommendations

Based on the above research results and analysis, the following suggestions are put forward in this study to provide a reference for improving the innovation behavior of teachers in private universities. In terms of leadership, leaders of private colleges and universities should encourage teachers to have forward-looking thinking, encourage teachers to pay attention to the development of the education field, and constantly innovate teaching methods and strategies, which will not only help improve teachers' teaching standards but also provide students with a high-quality education that keeps pace with The Times. In addition, leaders must give teachers more autonomy to show initiative and creativity in teaching practice. This approach can effectively stimulate teachers' enthusiasm and help cultivate students' awareness of innovation.

Regarding workgroup cohesiveness, the school or college can regularly hold various team activities to strengthen mutual understanding and communication among teachers and thus enhance team cohesion. Team activities, such as education and teaching seminars, academic salons, and team outward-bound training, can be rich and varied. They can also be relaxed and happy in leisure and entertainment activities. In these activities, teachers can discuss the difficult problems in education and teach together, share excellent experiences and practices, learn from each other's strengths, and progress together. In addition, to create a dynamic, united, and friendly education and teaching environment so that teachers can be better put into the work in a relaxed atmosphere, which is more conducive to improving teachers' innovative behavior.

Regarding individual learning orientation, teachers should establish the concept of lifelong learning and develop good independent learning habits. This can not only help to improve the comprehensive quality of teachers but also to inject a steady stream of vitality into the education and teaching work. To support the personalized development of teachers, schools can provide them with tailored development programs to meet the professional growth needs of different teachers. At the same time, establishing a perfect incentive mechanism is also very important. Through establishing various incentive projects, we will commend the teachers who have made outstanding achievements in education, teaching, scientific research, and service and stimulate their enthusiasm for professional development. In addition, it can also provide more development opportunities and platforms for teachers to achieve more results in academic research, education and training, and other aspects. With the joint efforts of the school and teachers, teachers' learning enthusiasm is constantly improved, and their knowledge reserve is constantly enriched, conducive to their higher innovative behavior in education and teaching work.

Finally, improving teachers' emotional intelligence ability is a part that cannot be ignored in today's educational reform. Given how to improve teachers' emotional intelligence,

this paper puts forward the following suggestions: First, teachers themselves should have good emotional regulation ability. Teachers should maintain a stable mood and respond to various problems with a positive attitude. Secondly, it strengthens the training of teachers' interpersonal skills. Schools can organize various training activities to help teachers improve communication skills and establish good interpersonal relationships. Working in an environment of mutual care and mutual support, teachers can better release their teaching enthusiasm and stimulate their innovation potential. In addition, paying attention to teachers' mental health is an important way to improve emotional intelligence. Schools should establish and improve the teacher mental health service system, regularly carry out mental health education and psychological counseling, help teachers relieve work pressure, and maintain a good psychological state. In short, improving teachers' emotional intelligence is a systematic and comprehensive project. Schools and education departments should start from various aspects, pay attention to teachers' mental health, strengthen interpersonal skills training, cultivate teamwork spirit, and other aspects to help teachers improve the level of education and teaching, and then improve teachers' innovative behavior.

3. Limitations and Future Research

Although this study provides useful implications for exploring the factors influencing teacher innovation behavior, we must recognize the limitations that are crucial for future research. These limitations provide further improvements for subsequent investigations and studies:

Exploring influencing factors in depth: This study did not cover all factors affecting teachers' innovative behavior. Future studies could explore more possible influencing factors and analyze their interactions.

Consider more variables: We may still need to consider some important variables fully during the study. Future studies should incorporate these variables to improve study completeness and accuracy.

Broadening the scope of research: In future studies, we need to extend the research subjects to teachers in other regions, industries, and age groups to achieve a more representative sample distribution.

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