

Transformational Leadership of the School Heads and Physical Education Teachers' Self-Efficacy from Selected Private and Public Universities

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Abstract: This paper investigate and analyze 177 PE teachers from five universities in Hubei Province (two public and three private schools) to verify whether the School heads transformational leadership can be a predictor of improving PE teachers' self-efficacy. This paper also discusses whether there is a difference between transformational leadership and self-efficacy when teachers are grouped according to gender, teaching year, education, teacher title, and type of school. The results show that higher titles, higher education backgrounds, and public school teachers have higher levels of perception of transformational leadership and self-efficacy. The perception of transformational leadership and self-efficacy is not influenced by gender and teaching years. Meanwhile, School heads four dimensions of Transformational leadership are positively correlated with PE teachers' self-efficacy in different dimensions. The regression model showed that different dimensions of transformational leadership predicted teachers' self-efficacy. Among them, Inspirational Motivation ($\beta=0.330$), Individualized Consideration ($\beta=0.303$), Idealized Influence ($\beta=0.227$), and Intellectual Stimulation ($\beta=0.134$). Fostering teachers' sense of belonging to the school, increasing the importance of school physical education, establishing timely and effective communication, and making teachers acknowledge the purpose of school education is the essence of transformational leadership.

Keywords: Transformational Leadership; Self-efficacy; PE Teachers.

1. Introduction

According to data from the 2020 National Student Physical Fitness Failure Survey conducted by the Department of Physical Education (PE), Health and Arts Education of the Ministry of Education, the rate of students' physical fitness failures has been gradually increasing with the continuous upgrading of education stages. PE teachers who directly impact students, lack sufficient enthusiasm for teaching and curriculum innovation in PE courses and don't have a clear plan for their own improvement [1]. As well as, most of PE teachers has no chance to involved in planning PE programs in universities and are unable to effectively participate in the building and decision-making of the school's PE culture for a long time. furthermore, the low priority given to PE in school education is also one of the reasons for the deteriorating physical fitness of students.

In the same year, the Chinese government issued the Opinions on Comprehensively Strengthening and Improving School PE in the New Era, which mentioned that school PE should be placed in a more prominent position, as a direct participant in PE, improving leadership is a requirement for schools to promote PE reform [2]. However, The development of PE is a difficult problem for all universities. School heads are promoted from PE teachers and they lack sufficient leadership to a large extent. They lack a long term vision for the development of PE. Meanwhile, PE departments have been given low priority in universities. As a result, the lower status and lower level leadership of leader has led to low self-efficacy (SE) among PE teachers.

The transformational leadership (TL) of PE heads, the increased involvement of PE teachers in the organization, the shared vision for the development of school sports activities, and the establishment of a university sports climate are

important for the growth of PE teachers and students.

2. Literature Review

2.1. Transformational Leadership

At present, transformational leadership (TL) is playing an increasing role in the development of education and schools. It provides the basis for the development of a school innovation climate, teacher commitment, collaborative school culture, teacher Self-efficacy, and collective teacher competencies [3] [4]. Based on empirical research, Day, Gu, and Sammons [5] pointed out school heads Transformational leadership (TL) can improve school outcomes, and foster student attainment. In addition, school leaders' transformational leadership (TL) can inspire teachers to improve their performance by exploiting their talents and abilities to the highest level to ensure optimal progress [6], as well as enhancement of teachers' job satisfaction [7]. In this study, our research identified transformational leadership (TL) according to Bass [8] and selected sub-dimensions including Idealized Influence (II), Inspirational Motivation (IM), Intellectual Stimulation (IS), and Individualized Consideration (IC).

2.2. Self-efficacy

Self-efficacy has different effects on how people feel, think, and act. In terms of feelings, low Self-efficacy is associated with depression, anxiety, and helplessness. Self-efficacy has different effects on how people feel, think, and act. In terms of feelings, low Self-efficacy is associated with depression, anxiety, and helplessness. Luszczynska and Schwarzer [9] indicated that a strong sense of competence facilitates cognitive processes and academic performance. When it comes to readiness for action, self-relevant perceptions are a

major component of motivational processes. In our research, we focus on teacher subjects, Self-efficacy refers to the teachers' beliefs and attitudes toward their capabilities to achieve academic o (e.g., student achievement and motivation) and well-being in the working environment [10], as well as belief in their ability to fulfill academic tasks and the successful learning of the materials.

Most universities in China were "Government Administrative". There is a lack of autonomy in the management, and the principal and other main heads of public universities are appointed by the government. At the same time, with the constant changes in government personnel, school heads do not stay in position for long. It also influences the appointment of personnel to departments and colleges [11]. It lets the dean or director be assigned through other factors but not leadership and management. Therefore, transformational leadership is a deficiency in Chinese universities. It limits teachers from expressing their views and participating in decision-making and Creative changes which in turn makes them feel frustrated and unenthusiastic about their work.

3. Methodology

3.1. Research Design

In this study, a quantitative research method was used in this study. Through descriptive comparison and correlation. We wanted to identify differences between respondents with different backgrounds and characteristics, especially between private and public universities. By comparing these factors, it is possible to find out how private universities should develop TL among PE department heads. Also, through related research, the impact of TL on teachers' self-efficacy will be determined and different factors that contribute to teachers' self-efficacy will be examined from different dimensions.

3.2. Sample and Locale

Questionnaires were distributed to PE teachers in five universities (three private and two public) in Wuhan Hubei Province, China through Stratified sampling. and 192 questionnaires were returned, of which 177 were valid.

Table 1. Demographic profile

	N
Gender	Male = 100 Female =77
Years of experience	Under 3years = 56 3 - 5 years = 36 5 - 10 years = 37 10 - 15 years = 26 Above 15 years = 22
Education background	Bachelor = 22 Master = 136 Doctor = 19
Teachers title	Assistant = 49 Lecturer = 78 Associate professor = 36 Professor = 14
Type of school	Private school = 88 Public school = 89

Before distributed questionnaires and data collection, this study was approved by the Hubei business college of ethics review Board.

3.3. Measures

The data used in this study came from two parts of the web-based questionnaire. The first section contained demographic information, and the second section contained two scales assessing teachers' TL of their leaders and their own self-efficacy.

Participants were asked for information about their background characteristics: gender, years of experience, job title, level of education, and the type of school they worked at.

The Multifactor Leadership Questionnaire (MLQ-5X) was adapted to assess the extent of teachers' TL of their leaders [12]. As well as, we combined the multidimensional Self-efficacy for Exercise Scale (MSES) and Relation-inferred Self-efficacy scale (RISE) to assess teachers own self-efficacy [13][14]. the two instruments were scored on a four-point Likert scale (1 = strongly disagree, 4 = strongly agree). In the current sample, the reliabilities of the "transformational leadership" and "self-efficacy" subscales were 0.931 and 0.934, respectively, as measured by Cronbach's alpha.

Additionally, to distinguish the language habits and psychological structures of Chinese people, I will prove the reliability of its content validity by consulting three linguistic experts after replacing this scale with Chinese.

4. Result

Before analyzing and comparing the data, normality test was conducted on TL and self-efficacy. The results showed that the sample size of the study data (177) showed a significance ($p < 0.05$) indicating that the null hypothesis was rejected. TL and self-efficacy do not conform to normal distribution. Therefore, the next step of comparison and correlation analysis will be Mann-Whitney U test, Kruskal-Wallis H test and Spearman's Rho test.

4.1. The Level of Transformational Leadership of School Heads as Perceived by PE Teachers

PE teacher respondents 'disagreed' with the four dimensions of their School heads TL.

Table 2. Transformatonal leadership perceive by PE teachers

	Mean	Interpretation
Idealized Influence (II)	2.22	Disagree
Inspirational Motivation (IM)	2.30	Disagree
Intellectual Stimulation (IS)	2.04	Disagree
Individualized Consideration (IC)	2.23	Disagree
Transformatonal leadership (TL)	2.19	Disagree

Indicating that School heads in these universities of Hubei province are not sufficiently Transformational in their leadership and that PE teachers in universities generally do not agree that School heads have TL. Some studies have also indicated that teachers in universities are neutral towards the TL of their school heads [15], which reflects that teachers in departments except for PE do not agree with the TL of their school heads.

4.2. The Level of self-efficacy Perceived by PE Teachers

PE teacher respondents 'disagreed' with the three dimensions of Self-efficacy including Coping efficacy, Scheduling efficacy, and Relation-inferred Self-efficacy which have mean values of 2.18, 2.26, and 2.26. PE teacher respondents 'agreed' with Task efficacy. the overall mean value of Self-efficacy is 2.30. It indicates that PE teachers in these universities of Hubei province are with low Self-efficacy.

Table 3. Self-efficacy perceive by PE teachers

	Mean	Interpretation
Task efficacy (TE)	2.51	Agree
Coping efficacy (CE)	2.18	Disagree
Scheduling efficacy (ScE)	2.26	Disagree
Relation-inferred Self-efficacy (RISE)	2.26	Disagree
Self-efficacy (SE)	2.30	Disagree

The results obtained are contrary to other studies, Xiong Y and colleagues [16] noted that PE teachers in Guangzhou have high levels of self-efficacy. However, considering that they all work in public primary and secondary schools. Their income exceeds that of most parts of China, based on the fact that Guangzhou is the most prosperous city. Some studies show that the government does not provide enough support for the rights and interests of teachers in private universities and that society and the public do not understand the management system, operation mechanism, and fees of private universities, and look at them with "colored glasses". As a result, teachers in private universities always feel inferior compared to teachers in public universities [17].

4.3. Differences in the Assessment of School Heads' Transformational leadership

The result showed that there was no significant difference ($p=0.93, 0.558 > 0.05$) in the PE teachers' assessment of the Transformational leadership of the School head when Gender and Years of experience were taken as a test factor. Like Díaz-Gómez [18] research, it found that gender, age, and experience could not be observed to moderate Transformational leadership.

Table 4. Difference on Transformational Leadership

Variables	II	IM	IS	IC	TL
	P	P	P	P	P
Gender	.827	.601	.433	.879	.93
Years of experience	.778	.421	.471	.19	.558
Education background	.01	.001	.283	.001	.001
Teachers title	.000	.000	.153	.003	.00
Type of school	.014	.022	.192	.042	.016

In Addition, the result indicated that there are a statistically difference of the School heads' Transformational leadership when Education background, Teachers title, and Type of school were taken as a test factor ($p=0.001, 0.00, 0.016 < 0.05$). However, at Intellectual Stimulation, no significant difference was shown by any group. It suggests that all current leaders show very little of Intellectual Stimulation's behaviors and

none of these behaviors can be perceived by PE teachers of any background. This result met Miranda S.R. [19] study, he indicated that education background is also related to experience and cultural background, which may result in subordinates with different degrees having different perceptions and values about leadership style, authority, and management methods. And, higher education and higher title PE teachers are often more involved in departmental and school decisions, and therefore feel more directly about the Transformational leadership of their leaders [20].

4.4. Differences in the Assessment of PE Teachers' Self-efficacy

The result showed that there was no significant difference ($p=0.837, 0.49 > 0.05$) when gender and years of experience were taken as a test factor. Other studies have also shown that there is no difference between male and female teachers in terms of their sense of teacher effectiveness (0.145), classroom management (0.278), and student engagement effectiveness (0.493) in different districts. Muamaroh [21] noted that male teachers (mean=173.5) have a higher sense of self-efficacy than female teachers (170.38), but there is still no statistically significant difference.

Table 5. Difference on Self-efficacy

Variables	TE	CE	ScE	RISE	SE
	P	P	P	P	P
Gender	.876	.874	.384	.132	.837
Years of experience	.76	.433	.408	.389	.49
Education background	.001	.015	.001	.01	.001
Teachers title	.004	.002	.015	.001	.001
Type of school	.084	.065	.003	.145	.038

Moreover, the result indicated that there are a statistically difference of PE teachers Self-efficacy when Education background, Teachers title, and Type of school were taken as a test factor ($p=0.001, 0.001, 0.038 < 0.05$). Some study also showed teachers with higher educational background showed higher self-efficacy [22]. Yang X.T. and Wang Q. [23] identified a significant differences in Self-efficacy in teaching strategies between teachers with different teacher titles ($p=0.009 < 0.05$), but not for classroom management or student management.

4.5. Relationship between School Heads' Transformational Leadership and PE Teachers' Self-efficacy

Table 6 showed the correlation relationship among Idealized Influence, Inspirational Motivation, Intellectual Stimulation, Individualized Consideration, Task efficacy, Copy efficacy, Schedule efficacy, and Relation-inferred Self-efficacy respectively. Spearman's Rho value was used to indicate the strength of the positive correlation among these items.

Li and Liu [24] stated that Transformational leadership in schools is related to teachers' Self-efficacy and that teachers are high level under Transformational leadership. Their own confidence and work motivation are influenced by their leaders. For teachers' groups and individual teachers, Lu H. and Li F. [25] conducted research on both individual and team efficacy and found that group-centered Transformational

leadership influenced team efficacy and positive effects of mediation of team processes. while individual-centered Transformational leadership positively influenced team member performance through follower Self-efficacy.

Table 6. Correlation between Transformational leadership and Self-efficacy

	TE	CE	ScE	RISE	SE
	P	P	P	P	P
	R-value	R-value	R-value	R-value	R-value
II	.000	.000	.000	.000	
	.644	.556	.517	.609	
IM	.000	.000	.000	.000	
	.694	.604	.527	.624	
IS	.000	.000	.000	.000	
	.484	.443	.463	.427	
IC	.000	.000	.000	.000	
	.718	.639	.556	.614	
TL					.000
					.852

4.6. Predictors of School Heads' Transformational Leadership on PE Teachers' Self-efficacy

In this research, using Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration as independent variables and Self-efficacy as dependent variable for linear regression analysis.

Table 7. Regression Model

Modle		II	IM	IS	IC
B	0.533	0.182	0.259	0.122	0.235
Std. Error	0.093	0.049	0.052	0.045	0.05
Standardized Coefficients		0.227	0.33	0.134	0.303
Sig.		0.000	0.000	0.007	0.000
VIF		2.305	2.674	1.51	2.531
F	110.578 p=0.000a				
R²	0.720				
Durbin-Watson	1.919				

a. Predictors: (Constant), Individualized Consideration, Intellectual Stimulation, Idealized Influence, Inspirational Motivation

b. Dependent Variable: Self-efficacy

The results of multiple linear regression analysis showed that the regression equation was significant ($F=110.578$, $p<0.01$). Among them, Idealized Influence ($\beta=0.227$, $P<0.01$), Idealized Motivation ($\beta=0.33$, $P<0.01$), Intellectual Stimulation ($\beta=0.134$, $P<0.01$), Individualized Consideration ($\beta=0.303$, $P<0.01$) were significantly positively predicting Self-efficacy, these variables explain 72.0% of the variation in Self-efficacy.

In addition, it can be concluded that the linear regression model formula is: Self efficacy = $0.533 + 0.182 * \text{Idealized Influence} + 0.259 * \text{Inspirational Motivation} + 0.122 * \text{Intellectual Stimulation} + 0.235 * \text{Individualized Consideration}$. Furthermore, D-W and VIF indicated that there are no autocorrelation and multicollinearity problems.

Besides, P-P plot can indicate that the residuals follow an approximately normal distribution. Meanwhile, Figure 2 showed that the standardized residuals were distributed

around the zero value and basically symmetrically distributed up and down, and the distribution characteristics did not change with the increase of the predicted values, which implies that the conditions of homogeneity and independence of the data variance were satisfied.

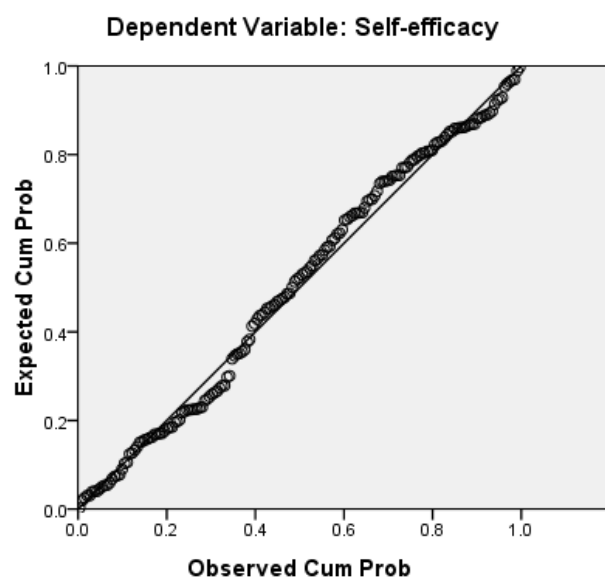


Figure 1. Normal P-P Plot of Regression Standardized Residual

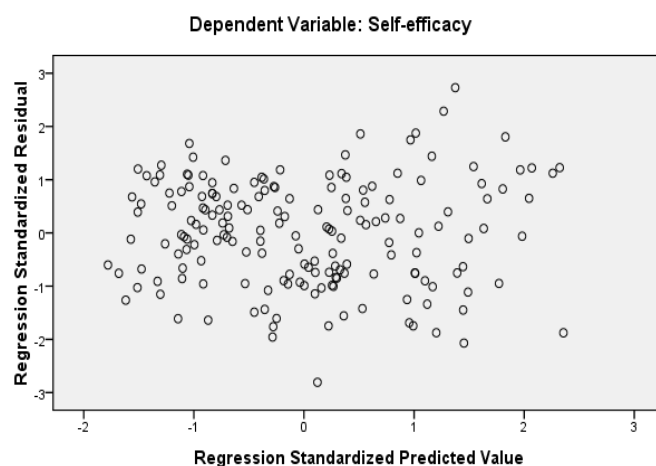


Figure 2. Scatterplot of residual

5. Conclusion

1. With the increasing number of college students in China year by year, more and more master's degree graduates enter colleges and universities to become PE teachers, of which male PE teachers are more favored by HR personnel than female PE teachers. At the same time, young teachers may be slightly inexperienced in teaching experience and teaching skills.

2. The extent of School heads transformational leadership appeared low. To a large extent, it stems from the fact that school heads in China have an inadequate recognition of Transformational leadership, as well as a low level of attention to physical education.

3. PE teachers have a different assessment of transformational leadership of School head according to their Highest Educational Attainment, Teacher title, and Type of School. Teachers' perceptions of Transformational leadership vary across title qualifications and levels of education, partly due to their cognitive abilities. Also, part of this results from the fact that they are more highly focused on their schools.

4. The extent of PE teachers' Self-efficacy seems low based on the assessment of the PE teacher. But they only have a high level of Task efficacy. This indicates that PE teachers have a negative perception that they are confident to complete some tasks, especially in challenging, and manage agenda. It may be a result of a lack of communication with their leader and busy workload.

5. PE teachers have a different assessment of their Self-efficacy according to their Highest Educational Attainment, Teacher title, and Type of School. However, they have relatively the same assessment according to their gender and years of experience. It implies that high job titles and education make them more recognized. Meanwhile, they are more likely to express their voice in decision-making. They will have a stronger sense of belonging to the job.

6. School heads Transformational leadership is highly related to PE teachers' Self-efficacy. School heads' words, actions, and goals affect teachers' work passion, confidence, and a host of other perceptions. Vice versa, lower efficacy teachers who are less enthusiastic about their work will have difficulty connecting with their leader.

7. Based on the result, realizing the Transformational leadership type of School head can be a positive predictor of PE teachers' Self-efficacy. It indicates school heads have to pay more attention to leadership, genuinely consider the development of teachers, and make use of the characteristics of each teacher, rather than applying a one-size-fits-all approach to their management.

6. Recommendations

1. School heads should review their leadership to improve their level of Transformational leadership on Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration.

2. It is recommended that national education authorities at all levels should emphasize Transformational leadership, reduce the need for efficient administrative management of colleges and universities directly or indirectly, and respect the autonomy of colleges and universities. Schools should then move from top-down hierarchical management to a more cooperative, collegial, and participatory form of leadership. Instead of merely obeying orders given by superiors.

3. Both public and private universities should progressively arrange training programs on Transformational leadership for school heads, which will provide a mastery experience that will enable them to apply Transformational leadership more effectively in their day-to-day management, to enhance the professionalism of the heads.

4. Schools should enhance the importance of PE in higher education. Although graduation qualification for all students is now closely linked to the PE test. However, because PE has long been neglected, it has led to the fact that PE tests are often just dealt with and do not play the role expected of them. Playing a practical role in physical testing and increasing the importance of PE in higher education will also further enhance the status and motivation of PE teachers in schools.

5. Offer opportunities for PE teachers to connect with the school's PE head by increasing the number of discussion groups and meetings. Increased communication between the two will increase PE teachers' sense of belonging and engagement. Teachers will become more passionate about their work, as well as a closer relationship will lead to more confidence and enthusiasm in their work.

6. Schools should arrange more training to develop

teaching and communication skills for teachers, also, self-efficacy courses are necessary for teachers to enhance their belief and confidence in work.

7. School heads should prioritize power-sharing. Currently, most schools still operate under traditional centralized management models. The "formalized" and "hollowed-out" false participation has led to a loss of the "subjective consciousness" among the teachers, and teacher decision-making and involvement can't truly be realized. Empowerment involves delegating executive decision-making authority to relevant teacher teams and departments, allowing them to determine the ways to achieve goals on their own. This not only expresses trust in teachers but also fosters a sense of ownership and belief.

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