

# PE Teachers' Leadership and Level of Motivation in Application-oriented Undergraduate Universities: Basis for a Strategic Leadership

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**Abstract:** *Teacher leadership, as one of the core qualities of teachers, plays an important role in the professional development of teachers and the improvement of education quality. The purpose of this study is to evaluate the leadership and motivation of physical education teachers in applied undergraduate universities. By means of questionnaire survey and focus group discussion, a survey was conducted on PE teachers in applied undergraduate universities in China. The results show that: the proportion of PE teachers in applied undergraduate universities with a doctoral degree is relatively small, and most of them have master's degrees. They are mainly male and aged between 31 and 50. Respondents showed good overall leadership, with high ethical leadership, educational leadership and curriculum leadership, as well as some research leadership and team leadership. When respondents were grouped according to age, gender, year level, and job title, there was no significant effect on the leadership assessment of physical education teachers. However, when respondents were grouped according to education level, there were significant differences in the assessments for teaching leadership, curriculum leadership, and research leadership, PE education level had an impact on physical education teachers' performance in these areas. The interviewed PE teachers are relatively active in all areas of education and enthusiastic about curriculum development and teaching, but their research motivation is rated as low and more support and incentives are needed to improve the motivation of research activities. When respondents were grouped according to age, gender, education, year level, and job title, it was found that these factors had no significant impact on the leadership motivation of PE teachers. The paper also puts forward some strategies to improve the strategic leadership of PE teachers on the basis of the challenging factors that hinder the effective leadership of PE teachers in application-oriented undergraduate universities.*

**Keywords:** *application-oriented undergraduate university, physical education teacher, leadership, motivation, educational innovation*

## 1. Introduction

In developed countries such as the United States, Japan and Germany, application-oriented undergraduate universities all play an important role in their national innovation systems [1]. The "14th Five-Year Plan" and the 2035 vision goals issued by many provinces and cities in China in 2021 frequently mention the need to accelerate the transformation of undergraduate universities into application-oriented development. Up to now, application-oriented colleges and universities account for 88% of China's general undergraduate colleges and universities. Building an excellent team of teachers and educators is an important foundation for the development of national education. However, from the perspective of the current professional quality of teachers in China, whether it is theoretical or practical quality, there is a certain gap between them and the needs of competent national teacher education. As one of the core qualities of teachers, teacher leadership plays an important role in the professional development of teachers and the improvement of education quality [2]. How to improve teachers' leadership has become an important issue that needs special attention in teacher development research. Taking a survey of the current research, it is found that the research on teacher leadership mainly focuses on the leadership of principals and teachers in primary and secondary schools, while the research on teacher leadership in colleges and universities, especially physical education teachers in colleges and universities, is relatively lacking. Therefore, under the background that the sports industry has risen to a new national strategy to promote China's sustainable development, this study, based on

the actual development of application-oriented undergraduate colleges, uses quantitative research methods to explore the leadership strategy development of application-oriented undergraduate physical education teachers, which has great theoretical and practical significance, and plays a corresponding role in inspiring and promoting the operation and management of application-oriented undergraduate colleges.

This study is based on the framework of college teacher leadership proposed by Zhao and the definition of teacher leadership by Zhou and Guo [3-4], combined with the characteristics of college physical education teachers. This study evaluated the leadership ability and motivation of applied undergraduate physical education teachers from five dimensions: moral leadership, teaching leadership, curriculum leadership, scientific research leadership and team leadership. Physical education teachers in applied undergraduate universities in China were selected as the research objects, and the Likert four-point scoring scale was used to design a questionnaire. Through statistical analysis of the questionnaire results, the effectiveness leadership level and leadership motivation of physical education teachers in applied undergraduate universities were summarized.

## **2. Evaluation of the leadership effectiveness of physical education teachers in application-oriented undergraduate universities**

### ***2.1 Basic situation of physical education teachers in application-oriented undergraduate universities***

In application-oriented undergraduate universities, the proportion of male PE teachers is almost twice that of female teachers. 65.6% of the teachers have a master's degree and 11.7% have a doctor's degree. The proportion of teachers with intermediate professional titles is 72.2%, and the proportion of teachers with senior professional titles is small; Most of the respondents were between 31 and 50 years old, with 36.7% of teachers between 31 and 40 years old and 33.9% between 41 and 50 years old. Teachers with 6-10 years of service accounted for 24.4%, and teachers with more than 15 years of service accounted for 33.9%. This shows that at present, physical education teachers in application-oriented undergraduate universities are mainly male, with master's degree as the main body and senior professional title teachers. Teachers in the age group of 30-50 years old are more common or they are more willing to participate in this research. The job stability of teachers is high, and they have accumulated rich teaching experience. This also has a positive impact on their level of leadership, as experience correlates with leadership.

### ***2.2 Current situation of leadership effectiveness of physical education teachers in application-oriented undergraduate universities***

The overall comprehensive average of the respondents in terms of the level of moral leadership factors is 3.72, which is interpreted as very effective, indicating that the respondents as a whole show a high level and they have strong potential and influence in moral leadership.

The overall comprehensive average of the respondents in terms of the level of teaching leadership factors is 3.60, which is interpreted as very effective, especially emphasizing their role in encouraging students to actively learn, think independently, create and solve problems. But there is some room for improvement in identifying students' learning needs at the beginning of the course.

The overall comprehensive average of the respondents in terms of curriculum leadership factor level was 3.56, which was interpreted as very effective, indicating that the surveyed educators had some room for improvement in creating unique curriculum content. However, this does not affect their overall effectiveness in course design. Educators' unique insight and creative curriculum design help to stimulate students' interest. These results also provide useful guidance for further research in the field of educational leadership.

The overall comprehensive average of respondents' scientific research leadership level was 3.28, which was interpreted as Effective. This indicates that the educators surveyed demonstrated a certain level of effectiveness in all aspects of research leadership, especially in the areas of meticulousness, research spirit, and teamwork. However, when it comes to challenging authority and innovative thinking, educators score lower, which means that they have a certain humility in scientific research and are less inclined to question authority or pursue highly innovative research. However, in the field of scientific research, challenging authority and proposing innovative problems and solutions are often the key to making important breakthroughs.

The overall comprehensive average of the respondents in terms of the level of team leadership factors is 3.33, which is interpreted as Effective. This indicates that the respondents show some effectiveness in team leadership. However, it is important to note that there are still areas for improvement, particularly with regard to having a clear vision and coordinating the overall situation. Team leaders need to be able to set a clear long-term vision for the team and coordinate the overall situation to ensure that the team is moving towards a common goal, which is essential for the success of the team.

In general, the statistical results show that the interviewees have a good level of overall leadership, with high moral leadership, educational leadership and curriculum leadership, as well as certain scientific leadership and team leadership. This is positive for practitioners in the field of education, but also provides an opportunity to further develop research and teamwork skills. Overall, these results show that respondents have a strong foundation in different aspects of leadership and can make a positive contribution to the education sector.

### ***2.3 Differences in the evaluation of PE teachers' leadership level by individual variables in applied undergraduate colleges***

When grouped according to the personal data variables such as age, gender, education level, year level and title, the differences in the leadership assessment level of PE teachers are as follows.

After the respondents were grouped by age, the F-value was 1.422 and the significance value was 0.238, which was greater than the significance criterion of 0.05, that is, there was no significant difference between them in leadership evaluation. This indicates that age is not an important factor affecting the leadership of respondents.

After gender grouping, the respondents' significance values in moral leadership, teaching leadership and scientific research leadership were greater than 0.05, and there was no significant difference in their evaluation. However, the significance value of curriculum leadership is 0.004, which is less than 0.05, which means that there is a significant difference in their assessment when the gender of the respondents is used as a test factor. However, the T-value calculated for the overall significance value is 1.696, and the significance value is 0.092, or it is interpreted as not significant, which is greater than the significance standard of 0.05, which indicates that gender is not an important determinant of leadership, and the influence of gender on leadership is not significant. Different leadership dimensions are affected by different factors, and there are some leadership dimensions where gender does have a significant impact, while other leadership dimensions are not.

After the respondents are grouped according to educational level, the total f value calculated is 3.961 and the significance value is 0.051, which is interpreted as not significant and greater than the significance value standard of 0.05. In other words, there is no significant difference between them in leadership evaluation. Educational level is not an important factor affecting the leadership of respondents. However, the significance value of teaching leadership, curriculum leadership and scientific research leadership is less than 0.05, and there are significant differences in their evaluation. It shows that education level has an impact on teachers' teaching leadership, curriculum leadership and scientific research leadership. Different leadership positions require different levels of education. In some leadership roles, a higher level of education is more advantageous because it can provide more specialized knowledge and skills. But in other cases, practical experience and leadership qualities matter more.

After the respondents were grouped according to Year level, the significance value was 0.702, and there was no significant difference between them in leadership assessment, indicating that Year level was not an important factor affecting the leadership of respondents. Although the significance values indicate that there are no significant differences between Year levels, some limitations need to be noted. First, it depends on the size and composition of the study sample, so the influence of sample effects cannot be ruled out. Second, leadership assessments are influenced by a number of factors, of which Year level is just one. Future research could continue to explore other potential influencing factors in order to more fully understand the dynamics and changes in leadership assessments.

When respondents' Academic title was used as a test factor, there was no significant difference in their assessments. It shows that academic titles do not significantly affect the evaluation of different leadership aspects. This means that academic titles are not the primary factor in determining their views on leadership, and that academic titles simply reflect respondents' educational and professional experience, but not necessarily their abilities or assessments in leadership.

### **3. Evaluation of leadership motivation of physical education teachers in application-oriented undergraduate universities**

#### ***3.1 Current situation of leadership motivation of physical education teachers in applied undergraduate universities***

The overall comprehensive average level of teaching factors in motivation of respondents was 3.40, which was interpreted as Effective. This indicated that respondents performed well in terms of teaching motivation, although there was room for improvement. These results highlight the positive motivation and willingness of educators to continuously improve their attitudes, willingness to experiment with new teaching methods and educational technologies to meet the changing needs of students, which is essential to improve student achievement and satisfaction, and can also drive improvements in the education system.

The overall composite average of the curriculum factor level is 3.56, which is interpreted as Effective. This means that educators' positive motivation and belief in the curriculum is essential for improving the quality of education and educational leadership. Teachers in the field of education often require continuous learning and self-professional development to keep up with changing educational trends and best practices. Teachers in the field of education show enthusiasm in curriculum development and professional development are willing to develop the curriculum independently and assume the role of curriculum leadership. This shows that they are interested in taking a greater leadership role in the educational process and improving the quality and applicability of the curriculum content.

A total composite average of 3.46 at the scientific research factor level is interpreted as Effective. This indicates that educators are generally positive in their research motivation, although there is still room for improvement in some areas. Many studies have found that individual self-achievement is closely related to research motivation. Educators pursue academic success and contributions to satisfy their sense of self-fulfillment, which can motivate them to actively participate in research work. The sense of self-fulfillment can also motivate them to continuously improve their academic level and pursue excellence. Passion and interest play a key role in scientific research motivation. Educators' interest and passion for their own research field can promote them to achieve better results in scientific research.

The overall comprehensive average of the respondents in terms of the level of teamwork factors is 3.30, which is interpreted as effective. Although the average score in teamwork is slightly lower than in other areas, it still shows relatively positive motivation. This indicates the educator's positive attitude and desire to work in teams, especially to motivate team members through leadership demonstrations and shared pursuit of success. When leaders actively engage and demonstrate good behavior, team members are more motivated to pursue team goals, and the educator's behavior has a model effect on students and colleagues. A negative motivation, that is, the pursuit of individual power and status, can negatively affect the teamwork and performance of an organization.

According to the motivation assessment of the interviewees, generally speaking, they have relatively positive motivation and motivation in all aspects of the education field, so as to improve the quality of education, promote scientific research, promote curriculum development and cooperate in a team.

#### ***3.2 Differences in the assessment of leadership motivation of PE teachers in applied undergraduate colleges and universities by individual variables***

When grouping according to variables such as age, gender, education level, Year level and title, the differences in respondents' assessment levels of PE teachers' leadership motivation are as follows.

After the respondents were grouped by age, the F-value was 1.596, and the significance value was 0.196, which was higher than the significance standard of 0.05, with no significant difference. It shows that age is not an important factor affecting the motivation of respondents.

After grouping by sex, the T-value calculated for the overall significance value was 0.738 and the significance value was 0.461, which was greater than the significance criterion of 0.05 and was interpreted as no significant difference. It shows that gender is not an important determinant of leadership motivation, and individual differences, interests and motivations are usually more decisive than gender.

After the respondents are grouped according to educational level, the overall  $f$  value is 2.651, and the significance value is 0.073, which is higher than the significance value standard of 0.05. There is no significant difference in their motivation assessment. It shows that educational level is not an important factor affecting the leadership motivation of respondents. Educational level groups usually include a variety of academic levels, from undergraduate to postgraduate and above. People with higher levels of education are more motivated in their careers because they usually have access to more opportunities for promotion and advancement. Different levels of education often require different levels of expertise and skills in specific areas. Therefore, people with a higher level of education will more actively pursue motivation related to their major to improve their professional quality. At the same time, education level is related to an individual's sense of self-efficacy, that is, the individual's confidence that they can achieve their goals. People with higher education levels are more confident and motivated to pursue their goals.

After the respondents were grouped according to Year level, the overall  $f$  value was 0.596, and the significance value was 0.618, which was higher than the significance value standard of 0.05, that is, there was no significant difference in their leadership motivation evaluation. This indicates that year level is not an important factor affecting the leadership motivation of respondents. Some people are highly motivated early in their careers, while others experience different motivational fluctuations at different stages of their careers. Different individuals have different needs and driving factors for motivation. Some people focus more on stability and security in their career, while others focus more on challenge and a sense of accomplishment. Therefore, years of work do not necessarily have a similar effect in all individuals.

After grouping according to Academic title, the overall  $F$ -value is -0.230, and the significance value is 0.819, which is greater than the significance standard of 0.05, which is interpreted as not significant, indicating that Academic title is not an important determinant of leadership motivation. Academic titles usually reflect an individual's status and career development stage in the academic world, but do not necessarily directly affect their motivation level. Individual motivation is driven more by internal motivations, interests, values, and career goals, rather than just the symbol of a title. In general, individuals with senior academic titles are more likely to take on leadership roles, but being willing and able to be effective leaders depends on other factors such as leadership, communication skills, and teamwork. Thus, academic titles alone do not determine whether an individual has leadership potential.

#### **4. Strategies to enhance the strategic leadership of applied undergraduate physical education teachers**

In application-oriented undergraduate colleges, the leadership role of physical education teachers is equally important because they are both educators and role models. Combined with the focus group discussion, the challenges that hinder the effective leadership of physical education teachers in applied undergraduate universities are generated, which are mainly reflected in five aspects: ethics and moral challenges, teaching and student challenges, curriculum challenges, research challenges and team cooperation challenges [5]. Combined with the evaluation results of the leadership and motivation of physical education teachers in applied undergraduate universities, this paper puts forward some strategies to improve the strategic leadership of physical education teachers in applied undergraduate universities.

##### ***4.1 Conduct targeted and regular leadership training***

Applied universities can establish leadership training and development programs based on the actual situation of physical education teachers in schools to help physical education educators improve their leadership skills in moral and ethical leadership, teaching leadership, curriculum leadership, research leadership and team leadership, especially for research and team cooperation leadership training. This helps to improve teachers' abilities in different areas of leadership and to better meet the needs of the education sector.

##### ***4.2 Stimulate PE teachers' motivation for scientific research***

The establishment of research project funds and diversified research incentive plans, such as high-level scientific research contribution incentive, scientific research innovation incentive, scientific research progress incentive, scientific research team incentive, etc., which will help stimulate the

enthusiasm and innovative spirit of physical education teachers to carry out scientific research.

#### ***4.3 The school provides more choices of educational resources***

The school provides additional educational resources and support to help teachers overcome leadership challenges, particularly with regard to curriculum and instruction, including providing curriculum design tools, modern educational technology support, online learning and teaching platforms, and laboratories to facilitate the creation and delivery of quality educational content.

#### ***4.4 Physical education teachers are encouraged to participate in interdisciplinary teams***

Form interdisciplinary research teams, encourage physical education teachers to participate in research teams, organize seminars, workshops and team projects, etc., encourage teamwork and knowledge sharing among teachers, which helps teachers gain new insights and problem-solving methods from different fields to solve challenges in ethical and moral leadership, curriculum leadership and research leadership, and enhance teamwork leadership.

### **5. Conclusion**

The proportion of physical education teachers in application-oriented undergraduate universities with doctor's degree is small, most of them have master's degree, the age group is mainly 31-50 years old, and most of them are male. Physical education teachers generally have excellent leadership qualities and are relatively active in all aspects of the education field. Age, gender, years of teaching and professional title have no significant influence on the evaluation of PE teachers' leadership ability, while educational background has significant influence on the evaluation of teaching leadership, curriculum leadership and research leadership ability. There is no significant difference in the assessment of PE teachers' leadership motivation, whether based on age, gender, educational background or other factors, which are not the main factors affecting the leadership motivation in the field of education. The leadership challenges faced by PE teachers in applied undergraduate universities are mainly embodied in five aspects: ethics and moral challenges, teaching and student challenges, curriculum challenges, research challenges and team cooperation challenges.

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