

## Effects of Physical Education Teachers' Leadership Styles and Classroom Climate on Learning Motivation for Basketball Course

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### ABSTRACT

This study intends to discuss the effects of university PE teachers' leadership styles and classroom climate on learning motivation for basketball course. University students in Guangdong Province, as the research objects, are surveyed with PE teacher leadership style scale, learning motivation for physical education scale, and classroom climate in physical education scale. Total 589 valid copies of questionnaire are analyzed with Multiple Stepwise Regression Analysis. The research results show that teacher support, affinity, charismatic leadership, and intellectual stimulation could positively predict intrinsic motivation, teacher support, laissez-faire leadership, and individualized leadership could positively predict identified regulation, charismatic leadership, individualized leadership, and involvement could positively predict introjected regulation, and laissez-faire leadership and passive management by exception could positively predict motivation. Accordingly, PE teachers' leadership styles of individualized leadership, charismatic leadership, and intellectual stimulation as well as classroom climate of teacher support, affinity, and involvement could positively affect students' autonomous motivation, while laissez-faire leadership and passive management by exception could positively affect students' non-autonomous motivation.

**Keywords:** transformational leadership, transactional leadership, classroom climate, learning motivation

### RESEARCH BACKGROUND

Physical education (PE) is an important promotion in school education. In addition to providing students with opportunities and channels to participate in sports, it could seek and cultivate outstanding athletes. Sallis and McKenzie (1991) indicated that the experience in physical education at school would affect the intention to engage in physical activity after being an adult, as students who were satisfied in the learning process would keep the learning motivation for continuous learning and involve more in the learning objective. In other words, learning motivation was a key factor in students' successive exercise participation behaviors. Learning motivation, as an intrinsic motivation to facilitate an individual proceeding various behaviors, is an inner psychological process to induce students' learning activity, influence the degree to participate in activity and the time for continuing the activity, and lead the learning activity approaching to the objectives set by teachers (Wu & Tai, 2016). Enhancing students' learning motivation for courses is an objective which PE teachers have to complete. Nevertheless, there are many factors in students' learning motivation, such as classroom atmosphere, student characteristics, and teachers' leadership styles (Wu & Tai, 2016). Past research also discovered that reinforcing students' learning motivation could enhance the learning satisfaction and promote the learning efficiency.

Class is the basic unit of school education as well as an important field for students' growth and learning. For teachers, class management does not simply relate to the achievement of educational objectives, but would also influence students' learning achievements and even the learning motivation for courses (Amorose & Anderson-Butcher, 2007). Classroom climate, a unique style different from other classes, is formed by the interaction among teachers, students, and environment. Such climate or style, once being formed, would fill the entire class to further

### Contribution of this paper to the literature

- PE teachers should apply transformational leadership in the teaching process to satisfy students' basic psychological needs of autonomy, competence, and relationship.
- Laissez-faire leadership is an inactive leadership style to have students appear anxiety for being lost in the learning process and reduce the learning motivation for participating in PE class.
- Passive Management by exception is also a negative leadership style which merely gives correction when students make mistakes that it does not have positive interaction with students in the learning process and could not have students' present positive feedback and satisfaction in the learning process.

influence the concepts and behaviors of class members. With harmonious classroom climate, students would psychologically feel secure, are not fear of being punished for the failure, and would not cower to face learning (Mazer, Murphy & Simonds, 2007; Morin, Marsh, Nagengast & Scalas, 2014). Relevant research found out the positive effect of classroom climate on students' learning motivation (Morin et al., 2014), positive correlations between teacher support, involvement, task-oriented classroom climate and learning motivation (Fry & Coe, 1980), and active and harmonious classroom climate as the requirement for successful teaching (Lewis, 2001). Moreover, DeMulder, Kayler and Stribling (2009) discovered that teachers applying transformational leadership could improve teacher-student interaction and build good classroom climate to further promote learning effectiveness. Accordingly, there are close relations among teachers' leadership styles, classroom climate, and learning motivation. However, research on the relations between classroom climate in physical education and learning motivation is little that leadership style, classroom climate, and learning motivation are regarded as the research variables in this study. Besides, university students in basketball courses are regarded as the research objects to discuss the effects of perceived PE teachers' leadership styles and classroom climate on learning motivation for physical education. The research results could be the reference for PE teachers' developing class management strategies and promoting teaching quality and learning effectiveness.

## LITERATURE REVIEW

### Self-determination Theory

Self-determination theory is often used for discussing motivation and final behaviors. Self-determination theory, proposed by Deci and Ryan (1985), stresses on distinct motivation generated by the interaction between individuals and environment, allows researchers understanding individual cognition, behavior, and emotion under general and specific situations that it could effectively discuss the motivation quality of individual participating in activity as well as deeply explain motivation and behaviors (Deci & Ryan, 1991; Abeysekera & Dawson, 2015). The theory has been broadly applied to education (Vallerand, Fortier, & Guay, 1997) and workplace (Vansteenkiste, Lens & Deci, 2006). Deci, Koestner and Ryan's (1999) self-determination theory explains the factors in an individual engaging in activity with three patterns of intrinsic motivation, extrinsic motivation, and motivation, where intrinsic motivation shows the highest self-determination degree. It reveals that the major factors in an individual engaging in activity are the fun of the activity and the satisfaction obtained in the activity, e.g. feeling the fun of PE class and the sense of achievement. Extrinsic motivation, on the other hand, drives an individual to participate in the activity for achieving certain objectives, acquiring others' identification, or obtaining rewards, e.g. receiving teachers' approval and other extra rewards by being serious in PE class.

According to different self-determination degree, Deci et al. (1999) divided extrinsic motivation into four motivation patterns of external regulation, introjected regulation, identified regulation, and integrated regulation. External regulation indicated that an individual did not participating in activity because of the interest in the activity, but was influenced by external tactics, e.g. rewards or punishment. Introjected regulation referred to an individual starting to internalize the reason for participating in activity. Such a motivation pattern was generated because the individual intended to acquire social identity or avoid feeling guilty. Identified regulation indicated that an individual participating in activity because of the perceived value and the selectivity of activity participation that there was not much pressure even though participating in the activity was not pleasant. Integrated regulation was the extrinsic motivation pattern with the highest self-determination degree. The generation of such behaviors was selected, because the importance of the behaviors were identified and integrated into self-value. Finally, Ryan and Deci (2000) also proposed the concept of motivation, which was the motivation pattern with the lowest self-determination degree. Individuals with motivation were lack of action intention or simply participated in the action passively, e.g. not understanding the reason for PE class and feeling senseless of PE class. As a consequence, self-determination theory is regarded as a practicable research structure to show in-depth understanding of students' learning motivation for physical education and sports behavior.

Empirical research on education have pointed out the positive relations between autonomous-support environment and self-determination motivation (Hagger, Chatzisarantis, Culverhouse & Biddle, 2003; Chatzisarantis & Hagger, 2009), high self-determination motivation being able to effectively promote individual intention to participate in physical activity (Standage, Duda, & Ntoumanis, 2003), and high self-determination motivation being able to enhance individual positive intention to continuously study physical education (Ntoumanis, 2005). For this reason, the learning experience in participating in PE class at university stage shows great influence on the regular exercise habit after growing up. It therefore becomes a primary issue to deeply understand the factors in students' learning motivation for physical education.

### **Leadership Style**

After organizing research on new-style leadership, Bass and Avolio (1990) developed Multifactor Leadership Questionnaire (MLQ) and classified leadership styles into transformational leadership, transactional leadership, and laissez faire leadership. Transformational leadership referred to a leader giving proper concerns to the subordinates, applying various methods to encourage the subordinates enhancing the goal and motivation, and inducing the subordinates' wisdom to present high-level analysis ability and vision and achieve self-actualization. Four types of leadership styles were covered. (1) Charismatic leadership: A leader presented clear vision and goal, could show the norm which individuals have to follow, and obtain the trust and respect to further make more efforts. (2) Inspirational leadership: A leader encouraged individuals and induced the motivation and potential to clearly understand the goal and share the vision. (3) Intellectual stimulation: A leader actively gave constructive innovation measures to stimulate individuals make the maximum efforts for tasks and objectives. (4) Individualized leadership: A leader would pay attention to individual needs and facilitate the potential development to further achieve the level of self-actualization (Bass, Avolio, Jung & Berson, 2003; Cristina & Ticlau, 2012; Yang, Wu, Wang & Chin, 2012). Transactional leadership was the process between a leader and the subordinates fulfilling the common agreement in order to exchange valuable objects. The relationship between a leader and the subordinates was a view exchange process, rather than a persistent objective. It contained (1) contingent reward: a leader giving positive reinforcement after an individual completing preset objectives and (2) management by exception: giving negative reinforcement to individual improper behaviors. Management by exception was further divided into active management by exception: a leader observing and modifying individual behaviors at any time in order to ensure the effective achievement of tasks, and passive management by exception: modifying individual behaviors for the unachieved objectives to correct the deviation between reality and expectation (Cristina & Ticlau, 2012). Furthermore, laissez-faire leadership was also covered in the new-style leadership theory. Transformational leadership and transactional leadership, proposed by Bass and Avolio (1990), were broadly applied to the interaction between leaders and subordinates in enterprises and administrative organizations as well as gradually used for discussing teacher-student relationship (DeMulder et al., 2009). Bernaus and Gardner (2008) indicated that teachers' leadership styles were a key factor in students' learning motivation. The more a teacher applied transformational leadership behaviors, the higher students' learning motivation (Pounder, 2008; DeMulder et al., 2009) and the better classroom climate and class management effectiveness would present (Morin et al., 2014). Apparently, PE teachers' leadership styles presented significant effects on students' learning motivation.

## **RESEARCH METHOD**

### **Research Objects**

University students in Guangdong Province are proceeded the pretest of questionnaire in October 22-31, 2016. Since the most 26 questions are included in the questionnaire scale, at least 130 samples are required for the pretest. In consideration with the response rate and invalid response rate, 4 universities in Guangdong Province are randomly selected and then 6 classes are extracted with cluster sampling. Total 168 university students studying basketball courses are selected for the pretest. The participants are requested to fill in "PE teacher leadership style scale", "learning motivation for physical education scale", and "classroom climate in physical education scale". Total 147 valid copies are collected for data analysis, Factor Analysis, and reliability test to complete the formal research scales. The formal questionnaire is distributed in December 15-25, 2016. Considering the response rate and invalid response rate, random sampling is preceded in Guangdong Province. Total 13 universities are extracted, and 2 classes from each of above 13 universities are extracted with cluster sampling to have the students in total 26 classes precede the formal questionnaire. Among 800 copies of formal questionnaire distributed, the final effective copies are 589 (395 males and 194 females), where 301 students major in science and engineering and the average age is 20.2.

## Measurement of Variable

Leadership style, classroom climate, and learning motivation scales are included in the questionnaire, which are scored with Likert 5-point scale. After collecting the questionnaire, Factor Analysis is proceeded to confirm the reliability and validity, and then internal consistency coefficient (Cronbach's  $\alpha$ ) is proceeded to test the reliability. (1) PE teachers *leadership style* scale: referring to Bass et al. (2003), leadership styles are divided into transformational leadership, transactional leadership, and laissez faire leadership in this study to discuss university students' perceived leadership styles of PE teachers. Transformational leadership contains three dimensions of charismatic leadership, intellectual stimulation, and individualized leadership, with 19 questions; transactional leadership includes three dimensions of contingent reward, active involvement, and passive involvement, with 12 questions; and, laissez faire leadership is a single dimension, with 5 questions. With Factor Analysis, factors with the eigenvalue $>1$  are extracted from transformational leadership and those with factor loadings lower than .40 and cross-factor questions are deleted. Total three factors of personal care ( $\alpha= .89$ ), charismatic leadership ( $\alpha= .91$ ), and intellectual stimulation ( $\alpha= .87$ ) are extracted, and the total subscale Cronbach's  $\alpha$  appears .91. With Factor Analysis, three factors of active involvement ( $\alpha= .88$ ), contingent reward ( $\alpha= .91$ ), and passive involvement ( $\alpha= .85$ ) are extracted from transactional leadership, and the total subscale Cronbach's  $\alpha$  is .87. Finally, the reliability of the laissez faire leadership style subscale shows the Cronbach's  $\alpha$  .95. *Learning motivation*: based on self-determination theory of Deci et al. (1999), it is modified to the university student learning motivation for physical education scale suitable for this study to discuss students' learning motivation for physical education. Four dimensions of intrinsic motivation, identified regulation, internal regulation, and motivation are covered, and total 26 questions are contained. Total four factors of motivation ( $\alpha= .95$ ), internal regulation ( $\alpha= .88$ ), intrinsic motivation ( $\alpha= .91$ ), and identified regulation ( $\alpha= .92$ ) are extracted, with the total Cronbach's  $\alpha$  .92. *Classroom climate*: referring to the classroom climate in physical education scale of Morin et al. (2014), it is modified to the classroom climate in physical education scale suitable for this study. Three dimensions of teacher support, involvement, and affinity are included, with total 20 questions. Total three factors of teacher support ( $\alpha= .89$ ), involvement ( $\alpha= .88$ ), and affinity ( $\alpha= .85$ ) are extracted, and the total Cronbach's  $\alpha$  appears .88.

## RESEARCH RESULT

The correlation coefficients reveal the higher individualized leadership, charismatic leadership, intellectual stimulation, active involvement, and contingent reward in PE teachers' leadership styles, the stronger student motivation for external regulation, intrinsic motivation, and identified regulation. Secondly, classroom climate presents remarkably positive correlations with learning motivation that the higher students' perceived classroom climate of teacher support, involvement, and affinity, the higher motivation for external regulation, intrinsic motivation, and identified regulation. Finally, leadership styles reveal notably positive correlations with classroom climate that the higher student perception of individualized leadership, charismatic leadership, intellectual stimulation, active involvement, and contingent reward leadership style in physical education, the better involvement, affinity, and teacher support in classroom climate.

**Table 1** shows the Stepwise Regression Analysis results of leadership styles and classroom climate predicting intrinsic motivation. The coefficients of teacher support ( $\beta= .23$ ,  $p< .01$ ), affinity ( $\beta= .29$ ,  $p< .01$ ), charismatic leadership ( $\beta= .19$ ,  $p< .05$ ), and intellectual stimulation ( $\beta= .17$ ,  $p< .05$ ) achieve the significance with a positive number that the four variables show positive predictability on intrinsic motivation. The total coefficient of determination ( $R^2$ ) appears .37, revealing that 37% intrinsic motivation for university students participating in basketball courses is affected by teacher support. Moreover, the result of leadership styles and classroom climate predicting identified regulation, **Table 1**, shows that the coefficients of teacher support ( $\beta= .31$ ,  $p< .01$ ), laissez faire leadership ( $\beta= .32$ ,  $p< .01$ ), and individualized leadership ( $\beta= .24$ ,  $p< .01$ ) are positive with the significance. Such 3 variables therefore present positive predictability on identified regulation. The total coefficient of determination ( $R^2$ ) .34 reveals that 34% university students' "identified regulation" to basketball courses are influenced by teacher support.

**Table 1.** Regression Analysis of leadership styles and classroom climate predicting intrinsic motivation and identified regulation

Variables	intrinsic motivation		identified regulation	
	Model 1		Model 2	
	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)
gender	.14*	.13*	.14*	.12*
age	.13*	.11*	.15*	.13*
specialty	-.08	-.07	-.11	-.09
teacher support		.23**		.31**
affinity		.29**		
charismatic leadership		.19*		
intellectual stimulation		.17*		
Laissez faire leadership				.32**
individualized leadership				.24**
R2	.15***	.37***	.15***	.34**
$\Delta R^2$		.22		.19

Notes. N = 589; \* $p < .05$ , \*\* $p < .01$

**Table 2.** Regression Analysis of leadership styles and classroom climate predicting introjected regulation and motivation

Variables	introjected regulation		motivation	
	Model 1		Model 2	
	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)	$\beta$ (SE)
gender	.14*	.13*	.13*	.11*
age	.15*	.13*	.17*	.15*
specialty	-.07	-.07	-.11	-.11
charismatic leadership		.38**		
personal care		.23**		
involvement		.15*		
Laissez faire leadership				.41**
passive involvement				.19*
R2	.15***	.39***	.14***	.42**
$\Delta R^2$		.24		.28

Notes. N = 589; \* $p < .05$ , \*\* $p < .01$

**Table 2** shows the Stepwise Regression Analysis result of leadership styles and classroom climate predicting introjected regulation. The  $\beta$  coefficients of charismatic leadership ( $\beta = .38$ ,  $p < .01$ ), individualized leadership ( $\beta = .23$ ,  $p < .01$ ), and involvement ( $\beta = .15$ ,  $p < .05$ ) reach the significance, with a positive number, revealing the positive predictability of the 3 variables on students' introjected regulation to participate in PE class. The total coefficient of determination ( $R^2$ ) .39 presents that 39% university students' introjected regulation to basketball courses is affected by charismatic leadership. From **Table 2**, the Stepwise Regression Analysis result of leadership styles and classroom climate predicting motivation, the  $\beta$  coefficients of laissez-faire leadership ( $\beta = .41$ ,  $p < .01$ ) and passive management by exception ( $\beta = .19$ ,  $p < .05$ ) appear a positive number and achieve the significance that the 2 variables present positive predictability on students' motivation to participate in PE class. The total coefficient of determination ( $R^2$ ) .42 reveals that 42% university students' motivation for basketball courses is influenced by laissez faire leadership.

## CONCLUSION AND SUGGESTION

In sum, the following conclusions and suggestions are acquired in this study. 1. Guangdong Province university PE teachers' leadership styles of individualized leadership, charismatic leadership, and intellectual stimulation and the classroom climate of teacher support, affinity, and involvement could positively affect students' autonomous motivation (e.g. intrinsic motivation, identified regulation, introjected regulation) and laissez-faire leadership and passive management by exception positively affect students' non-autonomous motivation (e.g. motivation). PE teachers' leadership styles and classroom climate present primary effects on students' learning motivation that PE teachers have to shape charismatic leadership and individualized leadership styles and build active and harmonious class learning climate to enhance students' learning motivation. 2. It is discovered that teacher support appears significant effects on intrinsic motivation and identified regulation, charismatic leadership shows key effects on intrinsic motivation and introjected regulation, and individualized leadership presents positive effects on identified regulation and introjected regulation. In short, teacher support, charismatic leadership, and individualized leadership show the most broad and profound effects on students' learning motivation for physical education. PE teachers therefore should actively establish supportive learning environment, well apply the

confident, optimistic, and sincere personality traits to arouse students' passion for physical education, and timely and actively concern about and instruct students so as to have students perceive the teacher's efforts and enhance students' learning motivation for physical education. 3. Self-determination motivation theory presents flexible motivation and allows researchers understanding peoples' cognition, behaviors, and emotion under general and specific situations that it could effectively discuss different motivation quality in PE class as well as allow researchers realizing students' motivation and behaviors participating in PE class. In the self-determination theory structure, the idea of behavior regulation has been developed. An individual being satisfied in the activity would present higher intrinsic motivation. On the other hand, an individual participating in activity in order to avoid punishment or obtain rewards would appear higher extrinsic motivation.

It is therefore suggested that university PE teachers, in addition to shape the leadership traits of confidence, passion, and vitality, should actually participate in learning activity and have more interaction with students so that students have positive evaluation and identity to PE teachers. What is more, students' learning situations should be actively understood. Through the support and concerns about students, students' PE class learning confidence should be established to enhance the learning motivation. Furthermore, PE teachers, when planning teaching activity, could apply group teaching to give more exchange and discussion opportunities to classmates. The better class learning climate would have students involve in teaching activity with more active attitudes to further present better learning effect and higher learning motivation. Finally, it is discovered in this study that classroom climate with teacher support could positively affect students' positive motivation for PE class (e.g. intrinsic motivation, identified regulation, introjected regulation). PE teachers therefore should build such classroom climate as teacher support is a supportive classroom climate. In addition to satisfy students' autonomous needs, it could help promote students' learning motivation and performance. PE teachers flexibly applying incentives and actively concerning about students' behavior in class management could help establish good classroom climate and enhance students' autonomous learning motivation. Moreover, individualized leadership, charismatic leadership, and intellectual stimulation would positively influence students' learning motivation (e.g. intrinsic motivation, identified regulation, introjected regulation). That is, transformational leadership style could positively affect students' autonomous motivation. As a result, PE teachers should apply transformational leadership in the teaching process to satisfy students' basic psychological needs of autonomy, competence, and relationship. When the psychological needs are satisfied, students' high self-determination motivation could be enhanced. Finally, laissez faire leadership and passive management by exception positively affect low-autonomous motivation pattern (e.g. motivation), as laissez-faire leadership is an inactive leadership style to have students appear anxiety for being lost in the learning process and reduce the learning motivation for participating in PE class. What is more, passive management by exception is also a negative leadership style which merely gives correction when students make mistakes that it does not have positive interaction with students in the learning process and could not have students' present positive feedback and satisfaction in the learning process. PE teachers therefore should avoid above two types of leadership styles.

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