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Peer Relations and Class Participation in PE

Lianqiang Li

Adamson University

Abstract:
The study assessed how Chinese students' peer relationships influence physical education (PE) class participation. The results showed positive assessments of peer relationships and class participation. Among the domains of peer relationships, intimacy, trust, and insight were identified as predictors of class participation. The findings suggest that teachers can enhance class participation by fostering student-peer relationships.

Keywords: College PE Students, Peer Relationships, Class Participation, Physical Education

Introduction

The issue of student participation is a significant concern for higher education institutions due to the negative consequences of disengagement [1], [2], [3]. In an educational context focused on student-centered learning, class participation is crucial for improving students' academic performance [4], [5]. Students not actively participating in the classroom tend to garner lower grades and diminished academic performance, which correlates with constrained employment prospects. This circumstance can pose challenges for governments in recovering education costs, subsequently exerting a detrimental impact on the evaluation of educational institutions [6]. In addition, students generally prefer amalgamating final grades and participation in assessments over the conventional assessment method. However, class participation has become a common condition of many university courses within the concept of coursework [6]. Consequently, fostering active student class participation in student-centered learning environments is vital for enhancing academic performance, ensuring successful employment outcomes, and maintaining the economic sustainability of educational institutions.

Classroom engagement is defined initially as verbal interactions between students and teachers [7]. Contemporary conceptualizations have expanded to include active student involvement in learning [7]. Previous research has demonstrated that classroom engagement activities, such as pre-class preparation, class discussion, active contribution, and task completion, positively impact the development of students' personal and professional skills [4]. Consequently, students become proficient in effectively demonstrating a wide range of skills, enhancing their academic performance [8]. Current research on classroom engagement is evaluated using quantitative or qualitative methods to develop metrics for assessing classroom engagement or to capture the dynamic process of student engagement [4],[3]. The aim is to create effective learning environments that stimulate students' behavioral, affective, and cognitive interests, increase their motivation to participate in the classroom, and ultimately enhance their academic performance.

The impact of physical education on the health of children and adolescents has been widely studied [9]. Physical education equips students with the necessary knowledge and skills to maintain a physically fit and active lifestyle. Therefore, physical education programs promote healthy student development [10],

[11]. Moreover, a positive correlation exists between students' engagement in physical education programs and their academic performance and physical fitness [11].

While the importance of involvement in physical education (PE) classes is widely recognized, the low levels of student engagement in the PE classroom still need to be addressed. Classroom engagement can manifest as observable behaviors such as active participation in activities or task completion, feelings of interest or emotion in the classroom, and cognitive states of self-regulated learning. Additionally, the Classroom Engagement Scale(CES), as further expounded upon by Wang et al. [12], serves as a metric for assessing four critical dimensions of student engagement: behavioral, affective, cognitive, and social. Recent studies have focused on possible predictors of students' classroom engagement through specific characteristics of highly engaged students to improve students' classroom engagement [13], [14]. This study delves into the same area. The primary objective of this research is to gauge the extent of classroom participation in physical education among Chinese university students and determine whether peer relation predicts it. As Dudley and Burden [10] highlighted, active participation in PE classes is pivotal in attaining physical, emotional, and cognitive learning objectives within the classroom context.

When students actively engage in classroom learning, they focus on mastering tasks, overcoming obstacles, and fostering supportive peer relationships. Furthermore, the correlation between elements such as teacher support, teaching quality, and affective engagement with classroom participation has been thoroughly explored [13]. In this context, affective engagement pertains to the degree to which teacher and peer relationships impact motivation to engage in classroom activities actively. Thus, a robust peer relationship may positively influence student engagement. Throughout college, students spend most of their time with their peers, fueled by a desire to be in each other's company. Adolescents may naturally gravitate towards adopting similar academic values or learning behaviors as their friends, enhancing their enjoyment of shared experiences. In recent decades, scholars have concluded that peer relationships are crucial adolescent social connections [15]. These relationships are a critical indicator of adolescents' ability to adapt to their surroundings and navigate challenges [16].

Furthermore, forming close-knit groups establishes the basis for peer relationships in schools. According to attachment theory, attachment quality affects the intimacy level among adolescents during personal development. Close peers share emotions, anxieties, and fears without developing physical intimacy. Therefore, Aydogdu [17] developed the Peer Relationship Scale (PRS) for Adolescents based on attachment theory. The scale includes four dimensions: intimacy, popularity, trust, and insight. Peer relationships are characterized as tight-knit cliques formed around shared interests and friendships. Members cultivate interpersonal connections through psychological interactions within these small groups, all geared towards adapting to their environment and navigating life's challenges [18]. Research on academic socialization emphasizes the influence of peer relationships with similar academic interests or aspirations on academic achievement. These peer connections also contribute to shaping students' motivation and willingness to participate actively in class [14].

Moreover, peer relationships are a crucial social dynamic significant in adolescents' physical and mental development. In addition to alleviating social anxiety and shaping moral perspectives and behaviors, these relationships also improve engagement, ultimately contributing to academic success [19], [20]. This means that the quality of peer relationships influences student participation in the classroom.

Although significant progress has been made in researching peer relationships, there needs to be more focus on participation in physical education classrooms [9]. More research is required to understand peer relationships and classroom participation in physical education comprehensively. Therefore, further

investigation is needed to know how peer relationships influence the complex relationship between classroom participation. In this study, we aimed to identify potential predictors of classroom engagement. To achieve this, we selected peer relationships as the independent variable. This decision was based on research findings that consistently demonstrate the positive impact of solid peer relationships on student engagement [21]. Drawing from these findings, educational research has traditionally employed academic achievement or learning outcomes as the primary predictor. Indeed, classroom participation stands out as the foremost factor shaping students' academic performance. However, conventional teaching models have resulted in students becoming increasingly reserved, responding solely to the teacher and refraining from interacting with their peers [14].

Additionally, students who face peer rejection or struggle with insecurities exhibit reduced classroom engagement levels. Previous empirical studies have emphasized the considerable influence of robust peer relationships on classroom participation. In physical education, students can experience the pleasure of movement and further develop their motor skills by encouraging, teaching, explaining, and interacting with each other through peers [22]. However, research on peer relationships and classroom participation in physical education is scarce. Within the Chinese literature, few studies have explored the correlation between peer relationships and involvement in the physical education classroom by the Peer Relationships Scale.

Active participation in subject curricula is critical to adolescents' academic excellence and future professional choices. This study used a classroom engagement scale(CES) to evaluate classroom engagement, including cognitive, behavioral, emotional, and social dimensions [21],[12]. To delve even deeper into the nuanced dynamics between peer relationships and classroom engagement, this study incorporated the Adolescent peer relationships scale (PRS), meticulously fashioned by [17], on the bedrock of attachment theory. This scale thoughtfully embraces four dimensions: intimacy, popularity, trust, and insight. It provides a detailed perspective to understand the complex nature of interpersonal dynamics in the classroom. Therefore, this study explored the relationship between peer relationships and classroom participation in sports with Chinese students as the research subjects.

The study is anchored on the self-determination theory. It expands on applying self-systems motivation theory to the Chinese PE classroom. It demonstrates the widespread use of self-determination theory in PE and education, particularly emphasizing individuals' intrinsic motivation and engagement in learning and sports [23]. Self-determination theory, based on a sub-theory of psychological needs theory, emphasizes individuals' autonomy, competence, and relational needs [23]. It helps to understand how peer relationships influence student participation in the physical education classroom. This theory enhances our understanding of the various dimensions of classroom engagement and reflects the adaptability of diverse motivational theories.

Method

The study involved 379 physical education students selected randomly from three public universities in Chongqing, China. To gather data, the researcher used the Classroom Engagement Scale developed by Wang et al. [12] and the Peer Relationship Scale developed by Aydogdu [17]. Descriptive statistics were used to assess the respondents' level of classroom participation and peer relationships. Multiple linear regression analysis was used to determine whether peer relationships predict classroom participation.

Results and Discussion

Table 1: Overall Peer Relations

Domains	Mean	SD	Interpretation
Intimacy	3.27	0.40	High Peer Relation
Popularity	3.08	0.62	High Peer Relation
Trust	3.30	0.49	High Peer Relation
Insightfulness	3.20	0.49	High Peer Relation
Overall	3.21	0.36	High Peer Relation

Table 1 shows the assessment of four domains of peer relationships. The overall average score is 3.21, indicating that respondents generally have a positive attitude towards intimacy, popularity, and insight with their friends. In the trust dimension, the average score is 3.30, with an SD of 0.49, showing significant variation in respondents' evaluations. According to Aydogdu [17], trust is a crucial factor influencing peer commitment and mutual support behaviors, having a significant positive effect. Xin et al. [24] further noted that trust reflects students' fundamental beliefs about their peers and profoundly impacts expectations and decisions in interpersonal interactions. Thus, due to different cognitions and experiences among students, their expectations of trust may vary. In the intimacy dimension, the average score is 3.27, with an SD of 0.49, indicating high consistency and favorable evaluations. Zhou et al. [15] found that college students are more likely to develop close contacts and peer relationships due to the significant amount of time spent in the school environment. This suggests that the school environment is essential in fostering intimate relationships.

Popularity got the lowest mean of 3.08. To overcome differences in students' intimacy, popularity, and trust and to enhance these dimensions, Bjørke & Mordal Moen [25] and Ulstad et al. [26] recommend using cooperative learning models in physical education classes. Additionally, schools can organize collective sports activities such as basketball, soccer, and track and field events to provide students with more opportunities for close peer interactions, thereby further strengthening peer relationships.

Table 2: Overall Class Participation

Domains	Mean	SD	Interpretation
Cognitive Engagement	3.03	0.36	Engaged
Behavioral Engagement	3.00	0.36	Engaged
Emotional Engagement	2.99	0.56	Engaged
Social Engagement	2.98	0.46	Engaged
Overall	3.00	0.36	Engaged

Table 2 describes respondents' self-assessments across four dimensions: cognitive, behavioral, emotional, and social engagement. The standard deviations ranged from 0.36 to 0.56, indicating relatively balanced and consistent self-evaluations. The overall mean score was 3.00, suggesting a general level of engagement across these dimensions. In the cognitive and behavioral dimensions, the average score was 3.03 (SD = 0.36) and 3.00 (SD = 0.36), indicating high self-evaluation in mental and behavioral engagement. This finding aligns with González-Peño et al. [27], who emphasized the importance of behavioral engagement in predicting student performance and class participation. On the other hand, cognitive engagement is a crucial factor leading to increased focused attention and increased processing

speed in the physical education classroom [28]. However, the scores were slightly lower in the social (mean = 2.98, SD = 0.46) and emotional (mean = 2.99, SD = 0.56) dimensions, possibly indicating fluctuations and uncertainties in social interactions and emotional experiences. This difference may be related to the diversity in respondents' emotional cognition and peer interactions [25]. It may also be influenced by Confucian values in the Chinese education system, emphasizing obedience, self-control, and personal restraint, potentially limiting students' emotional expression and social skills development [29].

Evidence suggests high-quality PE improves students' health-related fitness and fundamental motor skills [30]. However, students spend only 35.9% of their time in PE classrooms on classroom training, and classroom participation is low [31]. Research indicates that in autonomy-supportive learning environments, the teaching style is closely related to students' intrinsic motivation, positively affecting their classroom engagement, skill development, future exercise intentions, and academic achievement [32]. Therefore, to enhance student engagement and learning outcomes, educators should consider creating a more autonomy-supportive learning environment to encourage self-drive and personal growth.

Table 3: Predictor Model

Independent Variables	R Square	Beta	Sig	Interpretation
Intimacy	0.431	.191	.001	Predictor
Trust		.143	.012	Predictor
Insightfulness		.203	.000	Predictor

The multiple linear regression analysis results in Table 3 show a p-value less than 0.05, indicating the regression equation is significant. In the regression model, intimacy ($p<0.05$), trust ($p<0.05$), and insightfulness ($p<0.05$) significantly predicted university students' participation in physical education classes as positive predictors. These findings indicate that these three dimensions of peer relations significantly predict students' participation in physical education classes. The combination of these predictors explains 43.1% of the variance in-class participation. A one-unit change in intimacy is expected to result in a 0.191-unit in-class change involvement. The change in the trust will make a 0.143 shift in-class participation, while insightfulness will create a 0.203 change. These findings align with theoretical claims and previous research in the field of education, suggesting that positive peer relations have a beneficial impact on participation in physical activities and can positively predict class participation [33], [34].

Peer relations are crucial for university students' mental and physical development [18]. The social nature of physical education means peer relations significantly impact students' performance in these classes more than in other subjects [23]. In physical education, peer relations are social agents, contributing to a motivating atmosphere [35]. Evidence shows that peer relations influence students' motivation and enjoyment in physical education and may help less capable students overcome reduced class participation [36], [23]. Moreover, peer support reduces social anxiety, shapes moral cognition and behavior, and enhances engagement, aiding academic success [19].

Research indicates that effective physical education teaching techniques like group management allow teachers more time to correct and provide feedback, enhancing student engagement, autonomy, and effectiveness [37]. Teachers can use interactive skills, such as open-ended tasks framed as problem situations, to encourage personal challenges and self-regulated learning. In China, physical education is

mandatory for all students, which may directly affect their participation [29]. This reflects students' tendency to exhibit positive and goal-oriented behavior in policy-driven physical education classes. Thus, physical education teachers should apply interactive skills based on the school environment and students' specific circumstances to enhance problem-solving abilities and class participation. Finally, policies for non-physical education university students in China should explicitly state that peer relationships are crucial for increasing positive involvement in physical education classes.

Conclusion

The study indicated that college students generally maintain positive peer relationships, excelling in intimacy, popularity, trust, and insightfulness. This suggests that students can quickly form strong peer connections at school. The students also showed a certain level of engagement in PE, with active participation in both behavioral and cognitive aspects. However, their emotional engagement was relatively low, and their social involvement was also limited. Since peer relationship predicts the students' participation, PE teachers can cultivate intimacy, trust, and insightfulness to enhance participation.

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