Multidimensional Impact of Physical Education Environments on University Students' Self-Efficacy

Zhang Wenyu[1], Lim Boon Hooi[2], He Yao[2], Zhang Tingxiu[2]

[1] Faculty of General Education, Beihai University of Art and Design, China,
[2] Faculty of Education, Languages, Psychology & Music, SEGi University, Malaysia

253567298@qq.com; limboonhooi@segi.edu.my; 422818474@qq.com; tingxiu.zhang@qq.com;
Tel: +86 13977934429

Abstract

This study examines the influence of the physical education (PE) environment on university students' self-efficacy, focusing on teacher support, facility quality, peer influence, and curriculum structure. Quantitative data analysis from 300 students revealed a strong positive correlation between supportive PE environments and self-efficacy, particularly when teacher support and curriculum structure are robust. Well-maintained facilities and positive peer interactions further enhance confidence and engagement. Male students reported higher self-efficacy than females. The findings highlight the need for targeted interventions, including improved teacher training, facility upgrades, peer collaboration, and gender-sensitive programs, offering actionable insights for optimizing PE programs and fostering holistic student development.

Keywords: Physical education environments; Self-Efficacy; Teacher Support; Peer Influence

DOI: https://doi.org/10.21834/aje-bs.v10i30.461

1.0 Introduction

Physical education (PE) is a vital component of university education, contributing to students' physical health, psychological well-being, and social skills. As universities increasingly recognize the importance of holistic development, PE programs have become essential in promoting not only physical fitness but also mental resilience and social integration among students. A key psychological construct influencing these outcomes is self-efficacy, the belief in one's ability to execute actions required to manage prospective situations (Bandura, 1997). In PE, self-efficacy refers to students' confidence in their ability to perform physical tasks, overcome challenges, and achieve specific performance goals. High self-efficacy in PE has been linked to increased participation in physical activities, persistence in the face of challenges, and overall academic motivation (Oliveira et al., 2021). Given the importance of self-efficacy in shaping students' engagement and success in PE, it is essential to understand the environmental factors that influence this construct.

The PE environment encompasses various elements, including teacher support, facility quality, peer influence, and curriculum structure. These factors collectively shape students' experiences and perceptions of their abilities in physical activities. For instance, teacher support has been shown to significantly enhance students' self-efficacy by providing encouragement, constructive feedback, and a supportive learning atmosphere (Zhang et al., 2024). Teachers who foster a positive and inclusive environment can help students build confidence in their physical abilities, which in turn motivates them to engage more actively in PE activities. Similarly, the quality of PE facilities plays a crucial role in creating a conducive environment for skill development and practice, thereby boosting students' confidence. Access to well-maintained and adequately equipped facilities can enhance students' willingness to participate in physical activities and their perception of their competence.

Peer influence is another critical factor that can either enhance or diminish self-efficacy, depending on the nature of social interactions (Zhao et al., 2023). Positive peer interactions, such as encouragement and collaborative learning, can foster a sense of belonging and motivation, while negative behaviors, such as exclusion or bullying, can undermine students' confidence. Finally, a well-structured curriculum that aligns with students' interests and skill levels can further support the development of self-efficacy (Wang et al., 2022). A curriculum that is inclusive, goal-oriented, and tailored to students' needs can provide clarity and set realistic expectations, contributing to students' belief in their ability to meet academic and physical challenges.

Despite the recognized importance of these factors, existing research often examines them in isolation, neglecting the combined impact of the PE environment on self-efficacy. This fragmented approach leaves a significant gap in understanding how these elements interact to influence students' psychological and behavioral outcomes. University students, in particular, face unique challenges, including academic pressures, time constraints, and the transition to adulthood, which may influence their engagement in PE activities. For example, the demands of academic coursework and extracurricular commitments can limit students' time and energy for physical activities, potentially affecting their self-efficacy and

overall well-being (Ryan, 2017). Therefore, a comprehensive examination of the PE environment's impact on self-efficacy is warranted.

This study aims to bridge this gap by exploring the relationship between the PE environment and university students' self-efficacy. By examining the combined influence of teacher support, facility quality, peer influence, and curriculum structure, this research seeks to provide a holistic understanding of how these factors shape students' confidence and engagement in physical activities. The findings have practical implications for educators and policymakers, offering actionable recommendations for enhancing PE programs and fostering holistic student development. For instance, the study may highlight the need for targeted interventions, such as teacher training programs, facility upgrades, and peer collaboration initiatives, to create a more supportive and inclusive PE environment. Additionally, the study may contribute to the broader literature on self-efficacy by extending Bandura's social cognitive theory to the context of university PE settings, emphasizing the interplay of personal, environmental, and behavioral factors in shaping students' confidence and motivation.

This study addresses a critical gap in the literature by examining the multidimensional impact of the PE environment on university students' self-efficacy. By integrating insights from educational psychology, physical education, and social cognitive theory, the research aims to provide a comprehensive framework for understanding and enhancing students' confidence and engagement in physical activities. The findings are expected to inform the design of more effective PE programs that promote not only physical health but also psychological well-being and social integration among university students.

2.0 Literature Review

2.1 Theoretical Framework: Bandura's Social Cognitive Theory

Bandura's social cognitive theory provides a foundational framework for understanding self-efficacy, particularly in physical education (PE). According to Bandura (1997), self-efficacy is a central component of human agency, defined as an individual's belief in their ability to execute specific tasks or achieve desired outcomes. This belief is shaped by a dynamic interplay of personal, environmental, and behavioral factors. In PE, self-efficacy refers to students' confidence in their ability to perform physical tasks, overcome challenges, and achieve specific performance goals. A supportive PE environment, characterized by positive reinforcement, accessible resources, and collaborative interactions, can significantly enhance students' self-efficacy, leading to increased participation in physical activities and improved psychological well-being (Yu, 2024). Bandura's theory emphasizes that self-efficacy is not a fixed trait but rather a malleable construct that can be influenced by external factors, such as teacher support, peer interactions, and the quality of facilities. This theoretical framework underpins the current study, guiding the exploration of how various environmental factors within the PE setting contribute to the development of self-efficacy among university students.

2.2 Teacher Support

Teacher support is widely recognized as a critical factor in fostering student self-efficacy, particularly in educational settings. In PE, teachers play a pivotal role in shaping students' confidence and motivation through instructional practices, feedback, and interpersonal interactions. Teachers who provide encouragement, constructive feedback, and create an inclusive learning environment can positively influence students' confidence in their physical abilities (Affuso et al., 2023). Trigueros et al. (2022) found that perceived teacher support was a significant predictor of students' self-efficacy in PE settings, highlighting the importance of teacher-student interactions in promoting positive educational outcomes. Specifically, teachers who demonstrate empathy, offer personalized guidance and foster a sense of belonging can help students overcome self-doubt and develop a stronger belief in their capabilities. This study utilizes teacher support as an analytical lens to understand how student-teacher dynamics shape self-efficacy development in PE settings. By examining the role of teacher support to identify strategies for enhancing instructional practices that promote student confidence and engagement in PE.

2.3 Facility Quality

The quality of physical education facilities is another critical factor affecting students' self-efficacy. Well-maintained and adequately equipped facilities provide a conducive environment for learning and practicing physical skills, enhancing students' confidence in their abilities (Gordon et al., 2023). Access to modern, safe, and well-equipped facilities can significantly influence students' willingness to engage in physical activities and their perception of their competence. Deng et al. (2023) demonstrated that students with access to high-quality facilities are more likely to engage in physical activities and develop higher self-efficacy. Facility quality serves as a structural dimension in the analytical framework, emphasizing how physical environments influence psychological outcomes. For instance, the availability of state-of-the-art equipment,and well-maintained sports fields can create a positive learning atmosphere that encourages students to push their limits and develop their physical skills. Conversely, inadequate or poorly maintained facilities may hinder students' participation and diminish their confidence. This study examines the role of facility quality in shaping self-efficacy, with a focus on how resource availability and infrastructure impact students' engagement and performance in PE.

2.4 Peer Influence

Peer relationships within PE classes can significantly impact students' self-efficacy. Positive peer interactions, such as encouragement, collaborative learning, and mutual support, can enhance students' confidence and motivation to participate in physical activities (Zhang et al., 2024). When students feel supported by their peers, they are more likely to take risks, try new activities, and persist in the face of challenges. Conversely, negative peer behaviors, such as bullying, exclusion, or excessive competition, can diminish self-efficacy and deter participation. Cairney et al. (2023) found that peer support positively correlates with self-efficacy, underscoring the importance of fostering supportive

peer environments. This factor is incorporated into the analysis to examine the social dimension of the PE environment. By exploring the role of peer influence, the study aims to identify strategies for promoting positive peer interactions that enhance students' confidence and engagement in physical activities. For example, team-based activities, cooperative games, and group projects can create opportunities for students to build supportive relationships and develop a sense of camaraderie, which can further strengthen their self-efficacy.

2.5 Curriculum Structure

A well-organized and inclusive curriculum tailored to students' needs is essential for enhancing self-efficacy in PE. The structure and content of the curriculum play a crucial role in shaping students' experiences and perceptions of their abilities. Zhao et al. (2023) found that curricula aligned with students' interests and skill levels promote engagement and confidence. When students perceive the curriculum as relevant, achievable, and aligned with their personal goals, they are more likely to develop a strong sense of self-efficacy. Wang et al. (2022) further demonstrated that a needs-based curriculum positively influences self-efficacy in PE. Curriculum structure is thus included in the theoretical framework as a key variable to analyze how content and organization impact student outcomes. For instance, a curriculum that incorporates a variety of activities, caters to different skill levels, and provides clear learning objectives can help students build confidence in their abilities. Additionally, a curriculum that emphasizes mastery rather than competition can create a supportive learning environment that encourages students to focus on personal growth rather than external validation. This study examines the role of curriculum structure in shaping self-efficacy, with a focus on how the design and implementation of PE programs influence students' confidence and engagement.

2.6 Integrated Impact of Environmental Factors

While teacher support, facility quality, peer influence, and curriculum structure independently contribute to self-efficacy, their combined impact offers a holistic perspective. Ryan (2017) argues that these factors are interdependent and collectively shape the PE experience, influencing self-efficacy. For example, a supportive teacher can offset the negative effects of limited resources, and positive peer dynamics can enhance engagement even when curriculum design is sub-optimal. The interplay of these factors highlights the importance of adopting a comprehensive approach to understanding and improving self-efficacy in PE. By examining the integrated impact of these environmental factors, the study aims to provide a more nuanced understanding of how different elements of the PE environment interact to shape students' confidence and engagement. This holistic perspective can inform the development of interventions and policies that address multiple dimensions of the PE environment, thereby maximizing their impact on student outcomes.

3.0 Methodology

3.1 Research Design

This study employed a quantitative design with a cross-sectional survey methodology. This design was selected to facilitate the measurement of relationships between the PE environment and self-efficacy across multiple variables at a single point in time. The survey approach enabled the efficient collection of data from a large sample, ensuring the reliability and generalizability of the results. The research framework was driven by two primary research questions: (1) What is the relationship between the overall PE environment and university students' self-efficacy? (2) How do specific dimensions of the PE environment---teacher support, facility quality, peer influence, and curriculum structure---impact self-efficacy?

3.2 Participants

The study involved 312 university students enrolled in various undergraduate programs across two universities in Beihai city, Guangxi province. Participants ranged in age from 19 to 21, with a mean age of 20.2 years (SD = 0.7). Both male (53.3%) and female (46.7%) students participated in the study, ensuring gender representation. Inclusion criteria required participants to have attended at least one semester of physical education classes. Students with physical disabilities or conditions preventing PE participation were excluded to ensure homogeneity in the sample.

3.3 Sampling Procedures

A stratified random sample technique was utilized to guarantee representation of students across different academic disciplines and year levels. The strata were based on university, program, and year of study, with proportional representation from each group. This sampling method minimized selection bias and ensured diversity within the sample .

3.4 Instruments

To address the research questions effectively, the study employed a Self-Efficacy Scale for Physical Education (SEPE) adapted from Bandura (2006). This instrument was selected to assess university students' confidence in their ability to perform and succeed in tasks related to their physical education (PE) environment. A five-point Likert scale was employed to collect responses, ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree"), where greater self-efficacy was indicated by higher scores.

The self-efficacy scale consisted of 20 items designed to capture students' perceptions of their self-efficacy about the PE environment. The items were structured to evaluate the following aspects: (1)Teacher Support: Students' confidence in their ability to excel when supported by PE instructors. (2)Facility Quality: Perceived influence of PE facilities on their capability to perform physical activities effectively. (3)Peer Influence: The impact of peer collaboration and interactions on their self-efficacy. (4)Curriculum Structure: Students' belief in their ability to meet curriculum expectations and achieve learning outcomes.

3.5 Reliability and Validity

The SEPE conducted a pilot study involving 30 students from a different university in Beihai to evaluate its clarity, cultural relevance, and reliability. Minor modifications to the phrasing of items were implemented to guarantee appropriateness within the given context. The final scale's reliability, gauged through Cronbach's alpha, reached 0.89, signifying outstanding internal consistency. The content validity was established via expert reviews conducted by PE educators and psychologists knowledgeable about self-efficacy theory. Construct validity was further substantiated through exploratory factor analysis, which confirmed that the scale items aligned with the dimensions under scrutiny.

3.6 Data Collection

The data collection process took place in the middle of the semester to ensure that students had adequate exposure to the physical education environment. To maximize participation and ensure accessibility, a blend of online and in-class surveys was employed. Participants were provided with a comprehensive overview of the study's objectives and were required to sign informed consent forms. Strict measures were taken to maintain anonymity and confidentiality, fostering honest and open responses. The surveys encompassed inquiries evaluating the PE environment (including teacher support, facility quality, peer influence, and curriculum structure) and the adapted self-efficacy scale. Each survey took roughly 15-20 minutes to complete. To ensure data integrity, stringent checks for incomplete or inconsistent responses were conducted, which led to the exclusion of 12 surveys. Consequently, 300 valid responses remained.

3.7 Data Analysis

Quantitative analysis was conducted utilizing IBM SPSS Statistics 27, following a systematic approach to examine the relationship between the physical education (PE) environment and students' self-efficacy. Descriptive statistics were calculated to summarize the demographic characteristics of the sample and the distribution of self-efficacy scores. Pearson's correlation coefficient was used to explore the associations between self-efficacy and components of the PE environment, such as teacher support, facility quality, peer influence, and curriculum structure. A hierarchical multiple regression was conducted to determine the predictive power of PE environmental factors on students' self-efficacy. Independent variables were entered in blocks to assess their incremental contributions. Additionally, multiple regression analysis was employed to ascertain the degree to which various aspects of the physical education environment predicted self-efficacy levels.

3.8 Ethical Considerations

The study's objectives and procedures were communicated to all participants to ensure informed consent. Before their involvement, participants were provided with a detailed explanation of the research goals, methodology, and potential implications, and their voluntary agreement was obtained. To uphold ethical standards, all collected data were

anonymous to protect participant identities and securely stored by institutional and ethical guidelines. These measures were implemented to maintain confidentiality, ensure data integrity, and foster trust between researchers and participants. Compliance with these protocols underscores the study's commitment to ethical research practices and the protection of participants' rights and privacy throughout the research process.

4.0 Results

4.1 Descriptive Statistics

Descriptive analysis of the data revealed varying levels of perceived self-efficacy across the four dimensions of the physical education (PE) environment. The results suggest that students perceive teacher support and curriculum structure as the most positively impact aspects of their PE environment, while peer influence scores were relatively lower. Table 1 provides a summary of the descriptive statistics.

Table 1: Descriptive Statistics for Self-Efficacy Dimensions

Dimension	Mean (M)	Standard Deviation (SD)	Interpretation
Teacher Support	4.15	0.72	High
Facility Quality	3.92	0.80	Moderate to High
Peer Influence	3.79	0.84	Moderate
Curriculum Structure	4.03	0.77	High

Teacher support had the highest mean score (M = 4.15, SD = 0.72), indicating that students feel confident when instructors provide guidance, encouragement, and constructive feedback. This finding aligns with previous research by Affuso et al. (2023), which emphasizes the critical role of teacher-student interactions in fostering self-efficacy.

Curriculum structure also scored high (M = 4.03, SD = 0.77), reflecting students' belief in their ability to meet learning outcomes and curriculum requirements. This suggests that well-organized and goal-aligned curricula contribute significantly to students' confidence in their physical abilities (Zhao et al., 2023).

Facility quality scored moderately high (M = 3.92, SD = 0.80), suggesting that resource availability is generally sufficient, though there is room for improvement. This finding underscores the importance of well-maintained and adequately equipped facilities in enhancing students' self-efficacy (Deng et al., 2023).

Peer influence had the lowest score (M = 3.79, SD = 0.84), indicating a less pronounced impact of social interactions on self-efficacy. While peer dynamics are important, their influence appears to be weaker compared to other dimensions, such as teacher support and curriculum structure (Cairney et al., 2023).

4.2 Correlation Analysis

To explore the relationships between the four dimensions of the PE environment and overall self-efficacy, Pearson correlation analysis was conducted. The results, shown in

Table 2, reveal significant positive correlations between all dimensions and self-efficacy, with teacher support demonstrating the strongest relationship.

Table 2: Correlation Analysis Between Dimensions and Self-Efficacy.

Dimension	Correlation Coefficient (r)	Significance (p-value)
Teacher Support	0.67	<0.01
Facility Quality	0.58	<0.01
Peer Influence	0.42	<0.05
Curriculum Structure	0.63	<0.01

Teacher support exhibited the strongest positive correlation ($r = 0.67$, $p < 0.01$), indicating that supportive teaching significantly boosts students' confidence. This finding is consistent with the literature, which highlights the pivotal role of teacher-student interactions in fostering self-efficacy (Trigueros et al., 2022).

Curriculum structure also showed a strong correlation ($r = 0.63$, $p < 0.01$), emphasizing the role of well-designed curricula in enhancing self-efficacy. This aligns with Wang et al. (2022), who found that curricula aligned with students' interests and skill levels promote engagement and confidence.

Facility quality had a moderate but significant correlation ($r = 0.58$, $p < 0.01$), suggesting the importance of high-quality resources in fostering students' confidence. This finding supports the notion that well-equipped facilities provide a conducive environment for skill development and practice (Gordon et al., 2023).

Peer influence showed the weakest correlation ($r = 0.42$, $p < 0.05$), indicating that while peer dynamics are important, they are less influential compared to other dimensions. This suggests that peer interactions may be mediated by other factors, such as teacher support and curriculum structure (Li et al., 2019).

4.3 Regression Analysis

The study employed multiple regression analysis to determine the predictors of self-efficacy in the PE environment. The predictors included teacher support, facility quality, peer influence, and curriculum structure.

Table 3: Regression Analysis Results

Dimension	Standardized Coefficient (β)	Significance (p-value)
Teacher Support	0.49	<0.01
Facility Quality	0.23	<0.01
Peer Influence	0.19	<0.05
Curriculum Structure	0.37	<0.01

Teacher support was the most significant predictor ($\beta = 0.49$, $p < 0.01$), highlighting its pivotal role in shaping students' self-efficacy. This finding underscores the importance of supportive teaching practices in fostering students' confidence and engagement in physical activities (Zhu et al., 2020).

Curriculum structure contributed significantly ($\beta = 0.37$, $p < 0.01$), underscoring the importance of course organization and learning objectives in enhancing self-efficacy. This aligns with Zhao et al. (2023), who found that well-structured curricula promote engagement and confidence.

Facility quality and peer influence were less impact but still significant predictors ($\beta = 0.23$, $p < 0.05$ and $\beta = 0.19$, $p < 0.05$, respectively). These findings suggest that while these factors are important, their influence on self-efficacy is relatively weaker compared to teacher support and curriculum structure.

4.4 Gender Differences

Gender differences in self-efficacy were investigated using an independent samples t-test. The results showed that male students reported substantially higher levels of self-efficacy than female students. The t-test results ($t = 3.05$, $p < 0.01$) showed a statistically significant difference, with male students perceiving themselves as more confident in their physical abilities than female students. These findings align with prior research indicating that male students often report higher levels of self-efficacy in physical education (Hwang & Kim, 2018). The observed gender differences may stem from cultural and societal factors that shape gendered attitudes toward physical activity and sports. These results highlight the need for gender-sensitive interventions in PE to address disparities and promote equitable outcomes.

Table 4: Gender Differences in Self-Efficacy

Dimension	Mean (M)	Standard Deviation (SD)
Male	4.12	0.74
Female	3.86	0.81

5.0 Discussion

5.1 Teacher Support and Self-Efficacy

Teacher support emerged as the most influential factor, highlighting the critical role of instructors in fostering students' confidence. This result corroborates studies by Zhu et al. (2020), which demonstrated that supportive teaching practices significantly enhance students' self-efficacy. Teachers who provide personalized feedback, encouragement, and create an inclusive learning environment enable students to overcome challenges and develop a strong belief in their abilities. The findings suggest that professional development programs for PE teachers should prioritize strategies that cultivate supportive learning environments, particularly for students who exhibit lower levels of self-efficacy.

5.2 Facility Quality and Self-Efficacy

Facility quality was moderately correlated with self-efficacy, underscoring the importance of physical infrastructure in PE. Well-equipped and accessible facilities provide students with the resources needed to practice and develop their physical skills, thereby enhancing

their confidence. This finding is particularly relevant in the context of university campuses, where the availability of modern facilities can directly influence students' participation in physical education. Universities should allocate budgets to upgrade infrastructure, ensuring safe, accessible, and appealing spaces that inspire physical activity among students.

5.3 Peer Influence and Self-Efficacy

Peer influence, though significant, showed the weakest relationship with self-efficacy. This finding suggests that while social interactions play a role in shaping confidence, their impact may be mediated by other factors, such as teacher interventions and curriculum structure (Li et al., 2019). Encouraging collaborative activities and fostering positive peer dynamics could further enhance this dimension. Initiatives such as team-based sports, cooperative fitness challenges, and group projects can create supportive social networks, which not only enhance students' sense of belonging but also provide opportunities for social modeling, further strengthening self-efficacy through mutual encouragement.

5.4 Curriculum Structure and Goal Alignment

The significance of curriculum structure indicates that students' confidence is bolstered when PE programs are well-organized and aligned with achievable goals. Structured curricula provide clarity and set realistic expectations, contributing to students' belief in their ability to meet academic and physical challenges (Wang et al., 2022). A needs-based curriculum that caters to students' interests and skill levels can promote engagement and confidence, particularly when combined with supportive teaching practices and high-quality facilities.

5.5 Gender Differences in Self-Efficacy

The observed gender differences in self-efficacy align with prior research indicating that male students often report higher levels of self-efficacy in physical education (Hwang & Kim, 2018). These differences may stem from cultural and societal factors that shape gendered attitudes toward physical activity and sports. Future research could explore how gender stereotypes and expectations influence self-efficacy in physical education. Targeted interventions, such as female-focused fitness workshops, mentorship initiatives, and confidence-building activities, can provide tailored support to female students and help reduce gender disparities in self-efficacy.

6.0 Conclusion

6.1 Conclusion

This study explored the influence of PE environments on university students' self-efficacy. The findings successfully align with the research objectives, demonstrating that these environmental elements significantly impact students' confidence and engagement in physical activities. The study extends Bandura's self-efficacy theory by emphasizing the

importance of institutional and social dynamics in university PE settings. Notably, the interplay of peer collaboration and inclusive curricula highlights the need to integrate structural and social factors into self-efficacy frameworks. The study provides actionable insights, such as enhancing teacher training, improving resources, and fostering collaborative environments, to boost students' self-efficacy. These contributions bridge theory and practice, offering a comprehensive understanding of how PE environments shape student outcomes and laying the groundwork for further longitudinal and cross-cultural research.

6.2 Recommendations

Based on the results of the investigation, the following suggestions are proposed to enhance the physical education environment and its impact on students' self-efficacy.

6.2.1 Strengthen Teacher Training

Professional development for physical education (PE) teachers should prioritize strategies that cultivate supportive and inclusive learning environments. Training programs should emphasize the delivery of constructive feedback, consistent encouragement, and individualized attention, particularly for students who exhibit lower levels of self-efficacy. By equipping teachers with the skills to recognize and address the diverse needs of students, these programs can foster a more nurturing and motivating atmosphere. Additionally, incorporating evidence-based practices and reflective teaching methods into professional development can enhance teachers' ability to adapt their instructional approaches, ultimately boosting students' confidence and engagement in physical activities (Trigueros et al., 2022).

6.2.2 Enhance Facility Resources

High-quality, modernized facilities with appropriate resources are essential for improving student engagement and participation in PE. Universities should allocate sufficient budgets to upgrade infrastructure, ensuring that facilities are safe, accessible, and appealing to students. Investments in state-of-the-art equipment, well-maintained sports fields, and versatile gymnasiums can create an environment that inspires physical activity and skill development. Furthermore, ensuring equitable access to these resources for all students, regardless of gender or ability, can help bridge gaps in participation and self-efficacy (Deng et al., 2023).

6.2.3 Foster Peer Collaboration

Universities should promote collaborative activities that encourage positive peer interactions within PE settings. Initiatives such as team-based sports, cooperative fitness challenges, and group projects can create supportive social networks, enhancing students' sense of belonging and motivation. These activities not only foster camaraderie but also provide opportunities for social modeling, where students can learn from and encourage one another. By integrating peer collaboration into the curriculum, educators can create a

more inclusive and engaging environment that strengthens students' self-efficacy through mutual support and shared achievements (Zhang et al., 2024).

6.2.4 Address Gender-Specific Needs

Targeted interventions are necessary to reduce gender disparities in self-efficacy observed in physical education contexts. Female-focused programs, such as women-centered fitness workshops, mentor-ship initiatives, and confidence-building activities, can provide tailored support to female students. These programs should be designed to address specific barriers that female students may face, such as societal stereotypes or a lack of role models. Additionally, institutional policies aimed at challenging gender stereotypes and promoting exclusivity can create a more equitable environment for all students. By addressing gender-specific needs, universities can ensure that PE programs are accessible and empowering for students of all genders (Hwang & Kim, 2018).

Article Contribution to Related Field of Study

This study contributes to the fields of educational psychology and physical education by highlighting the multidimensional impact of the PE environment on self-efficacy. The findings provide actionable insights for educators and policymakers to enhance teaching practices, infrastructure, and curriculum design. By addressing gender disparities and fostering inclusive environments, this research lays the groundwork for future studies aimed at improving educational outcomes in physical education contexts.

Acknowledgement 1

The author would like to express their sincere gratitude to the participating universities and students for their valuable time and cooperation during this study. Special thanks are extended to the faculty members who facilitated the data collection process and provided insightful feedback.

Acknowledgement 2

This full paper was initially published in E-BPJ, Vol. 10, No. 31, January 2025, pages 127–133.

References

Affuso, G., Zannone, A., Esposito, C., Pannone, M., Miranda, M. C., ... & Bacchini, D. (2023). The effects of teacher support, parental monitoring, motivation and self-efficacy on academic performance over time. European Journal of Psychology of Education, 38(1), 1-23.

Bandura, A., & Wessels, S. (1997). Self-efficacy (pp. 4-6). Cambridge: Cambridge University Press.

Cairney, J., Kwan, M., & Faulkner, G. (2023). Physical literacy and self-efficacy in university students: Exploring the role of physical environments. International Journal of Behavioral Medicine, 30(2), 120-135.

Deng, J., Liu, Y., Chen, R., & Wang, Y. (2023). The relationship between physical activity and life satisfaction among university students in China: the mediating role of self-efficacy and resilience. Behavioral Sciences, 13(11), 889.

Gordon, D., Blundell, C., Mills, R., & Bourke, T. (2023). Teacher self-efficacy and reform: a systematic literature review. The Australian Educational Researcher, 50(3), 801-821.

Hwang, N., & Kim, S. (2018). Social modeling and gender differences in physical education. Journal of Health and Sports Science, 7(2), 123-135.

Li, X., Wang, Z., & Zhang, Y. (2019). Peer influence and self-efficacy in physical education: A social learning perspective. Psychology of Sport and Exercise, 45, 101581.

Oliveira, V. P. D., Nascimento, J. V. D., Salles, W. D. N., Santos, P. C. C. D., Benites, L. C., & Folle, A. (2021). Self-efficacy of university students in physical education: Association with personal, academic and professional characteristics. Journal of Physical Education, 32, e3215.

Ryan, R. M. (2017). Self-determination theory: Basic psychological needs in motivation, development, and wellness. Guilford Press.

Trigueros, R., Aguilar-Parra, J. M., & Cangas, A. J. (2022). Teacher support and self-efficacy in physical education: A path model. Frontiers in Psychology, 13, 894729.

Wang, K., Li, Y., Zhang, T., & Luo, J. (2022). The relationship among college students' physical exercise, self-efficacy, emotional intelligence, and subjective well-being. International journal of environmental research and public health, 19(18), 11596.

Yu, H., Zhu, T., Tian, J., Zhang, G., Wang, P., Chen, J., & Shen, L. (2024). Physical activity and self-efficacy in college students: the mediating role of grit and the moderating role of gender. PeerJ, 12, e17422.

Zhang, T., Zhao, J., & Shen, B. (2024). The influence of perceived teacher and peer support on student engagement in physical education of Chinese middle school students: mediating role of academic self-efficacy and positive emotions. Current Psychology, 43(12), 10776-10785.

Zhao, Y. S., Ma, Q. S., Li, X. Y., Guo, K. L., & Chao, L. (2023). The relationship between exercise motivation and exercise behavior in college students: The chain-mediated role of exercise climate and exercise self-efficacy. Frontiers in Psychology, 14, 1130654.

Zhu, Y., Sun, W., & Li, T. (2020). Teacher support and self-efficacy in physical education: Implications for student performance. Journal of Teaching in Physical Education, 39(1), 77-90.