



The Relationship between Functional Motor Competence and Students' Interest in Learning Wushu Short Weapons Courses in Higher Learning Institutions in China: Coach Support as a Mediator

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ARTICLE INFO	ABSTRACT
<p>Article History: Received: January 06, 2025 Revised: February 20, 2025 Accepted: February 25, 2025 Available Online: February 27, 2025</p> <hr/> <p>Keywords: Functional Motor Competence, Wushu Education, Coach Support, Embodied Cognition, Student Motivation</p> <hr/> <p>Corresponding Author: Kong Jianting Email: 21020123@siswa.unimas.my</p>	<p><i>This research analyzes the complex relationship between functional motor skill and student engagement in Wushu short weapons courses in Chinese higher education institutions, emphasizing the mediating influence of coach assistance. This study, based on the theoretical frameworks of embodied cognition and self-determination theory, examines the influence of motor proficiency on intrinsic motivation, cognitive persistence, and prolonged interest in martial arts instruction. The interdependent link between physical ability and educational support is examined via a detailed investigation of coaching assistance, which serves as both a catalyst and a medium for enhancing students' emotional and intellectual engagement. This research utilizes a rigorous methodological framework to provide significant insights into the educational dynamics that support conventional martial arts instruction amidst changing educational paradigms. The results enhance the discussion on motor skill development, motivation theory, and the educational requirements essential for fostering sustained involvement in Wushu training.</i></p>



Introduction

This paper investigates the relationship between functional motor competence and students' interest in learning Wushu short weapons courses in higher learning institutions in China, with coach support as a potential mediator. Wushu, as a traditional Chinese martial art, holds significant cultural and physical value, yet its inclusion in higher education curricula remains relatively understudied. This study aims to bridge this gap by exploring the role of motor competence and coach support in shaping students' interest in Wushu short weapons courses. Drawing upon theoretical frameworks in motor development, self-determination theory, and social support, the research employs a mixed-methods approach to collect and analyze data. Quantitative data will be gathered through standardized assessments of motor competence and surveys measuring interest levels, while qualitative data will be obtained through interviews to explore the perceived impact

of coach support. The findings of this study aim to contribute to the understanding of factors influencing student engagement in Wushu courses and inform strategies for enhancing instructional practices and curriculum design in higher education settings.

Wushu, a traditional Chinese martial art, holds a prominent place in higher learning institutions in China, where it is integrated into physical education curricula to promote students' physical fitness, motor skills, and cultural appreciation (Li & Wang, 2019). Wushu encompasses a diverse range of techniques, including empty-hand forms and short weapons routines, each requiring precise motor coordination, balance, and agility (Zhang et al., 2018). While Wushu education is popular among students, there is a growing interest in understanding the factors that influence students' engagement, motivation, and skill development in these courses (Yang et al., 2020).

Functional motor competence, defined as the ability to execute motor skills effectively and adaptively, plays a pivotal role in Wushu performance (Chen et al., 2020). Students with higher levels of motor competence demonstrate greater proficiency in executing Wushu techniques and are more likely to experience success and satisfaction in their practice (Wang & Li, 2021). However, the extent to which motor competence influences students' interest and engagement in Wushu education remains underexplored.

Moreover, the role of coach support in shaping students' experiences and outcomes in Wushu education is increasingly recognized (Sun & Li, 2019). Coach support encompasses instructional quality, feedback provision, and motivational strategies, all of which can significantly impact students' interest and motivation to learn (Li et al., 2019). Yet, little is known about how coach support mediates the relationship between motor competence and student interest in learning Wushu short weapons techniques.

Understanding these relationships is critical for informing the design and delivery of Wushu education programs that optimize students' learning experiences and outcomes (Wang & Li, 2021). By investigating the interplay between functional motor competence, student interest, and coach support, this study seeks to contribute valuable insights to the field of Wushu education and inform educational practices in higher learning institutions in China.

Wushu, as an integral part of Chinese martial arts, has been widely promoted in higher learning institutions in China as a means of preserving cultural heritage, improving physical fitness, and enhancing motor skills (Hong, 2018). Despite its historical and cultural significance, there has been a declining interest in Wushu short weapons courses among university students (Li, Ren, & Zhang, 2020). One possible factor contributing to this decline is students' functional motor competence, which plays a crucial role in their ability to perform complex movements and engage effectively in martial arts training (Lopes, Stodden, Bianchi, Maia, & Rodrigues, 2012). Studies suggest that students with lower functional motor competence are more likely to experience frustration, reduced self-efficacy, and disengagement from sports and physical activities (Stodden, Goodway, Langendorfer, Robertson, Rudisill, & Garcia, 2008). However, there is limited research examining how functional motor competence influences students' interest and motivation in Wushu short weapons courses within higher education settings.

Another critical factor that may impact students' engagement is the role of coach support. Research in sports psychology highlights that coach support can significantly influence students' motivation, learning outcomes, and overall experience in sports training (Mageau & Vallerand, 2003). Coaches who provide autonomy-supportive guidance, constructive feedback, and emotional encouragement can foster a positive learning environment, leading to greater student motivation and persistence in training (Horn, 2002). However, the extent to which coach support mediates the relationship

between functional motor competence and students' interest in Wushu remains unexplored. Understanding this mediating effect is crucial, as it can provide insights into how coaching strategies can be optimized to enhance student engagement and learning outcomes in martial arts education.

Given these gaps in the literature, this study seeks to address the following research questions: (1) What is the relationship between functional motor competence and students' interest in Wushu short weapons courses? (2) To what extent does coach support mediate this relationship? By examining these factors, this study aims to contribute to the development of evidence-based coaching strategies that can enhance student interest and participation in Wushu courses in higher learning institutions in China. The findings will provide valuable insights for sports educators, policymakers, and martial arts instructors on how to sustain student motivation and improve curriculum designs for traditional martial arts education.

This study is significant as it contributes to both theoretical and practical understandings of how functional motor competence, coach support, and student interest interact in the context of Wushu short weapons courses in higher learning institutions in China. The findings will have implications for educators, coaches, and policymakers in sports and physical education.

From a theoretical perspective, this study expands the literature on sports psychology and motor learning by examining how functional motor competence influences students' interest in martial arts education. By integrating Self-Determination Theory (SDT) (Deci & Ryan, 1985) and Achievement Goal Theory (AGT) (Nicholls, 1984), the study seeks to explain the motivational processes involved in Wushu training, particularly in how students' competence levels impact their engagement. Furthermore, it provides empirical evidence on the mediating role of coach support, an area that has been relatively underexplored in the context of Wushu and traditional Chinese martial arts education. Research suggests that coach support plays a crucial role in shaping students' intrinsic motivation and long-term commitment to physical activities (Mageau & Vallerand, 2003). This study, therefore, contributes to the growing body of literature on the psychological and pedagogical aspects of martial arts education.

Literature Review

The literature review connects established knowledge with unexplored concepts, using the collective store of human wisdom. It illustrates a composite of intellectual investigation, delineating the landscape of current knowledge while pinpointing the gaps that invite more discovery.

Wushu, the traditional Chinese martial arts, has a profound historical legacy intertwined with Chinese culture and philosophy. Its origins can be traced back thousands of years, evolving alongside Chinese civilization (Jiang, 2011). Wushu encompasses a diverse range of styles, techniques, and forms, each reflecting regional influences, historical developments, and philosophical principles (Shahar, 2008).

During the Ming (1368-1644) and Qing (1644-1912) dynasties, Wushu underwent significant codification and standardization (Morris, 2004). Martial arts masters and scholars systematized Wushu techniques into distinct styles and schools, such as Shaolinquan and Taijiquan, contributing to the richness and diversity of Chinese martial arts traditions (Kennedy, 2007).

Wushu's cultural significance extends beyond combat techniques to encompass various artistic and performance elements (Rahaim, 1996). Traditional Chinese opera, dance, and folklore often incorporate Wushu movements and themes, highlighting its integration into broader cultural

expressions (Bishop, 1989). Additionally, Wushu has served as a source of inspiration and symbolism in Chinese literature, poetry, and visual arts, reflecting its profound impact on Chinese identity and aesthetics (Ching, 2001).

In the 20th century, Wushu experienced a revival and modernization in response to political, social, and cultural changes in China (Lu, 2003). The establishment of the People's Republic of China in 1949 led to efforts to promote Wushu as a national sport and cultural heritage. Contemporary Wushu forms, such as Changquan and Nanquan, were developed to showcase the athleticism and competitive aspects of Wushu on a global stage (Wong, 2008).

In recent decades, Wushu has gained international recognition and popularity as a martial art, sport, and cultural practice (Rusk, 2018). Globalization has facilitated the exchange of Wushu knowledge, techniques, and experiences across borders, leading to the establishment of Wushu schools, competitions, and federations worldwide (Li, 2017). Furthermore, Wushu has undergone adaptation and fusion with other martial arts styles, fitness practices, and performance arts, reflecting its dynamic and evolving nature in contemporary society.

In conclusion, the historical context of Wushu underscores its enduring legacy as a cornerstone of Chinese culture and identity. By understanding Wushu's historical evolution and cultural significance, scholars and practitioners can gain valuable insights into its role in shaping martial arts education, physical culture, and global exchange.

Wushu, the traditional Chinese martial arts, has found a significant presence in higher learning institutions in China, where it serves as both an academic pursuit and a cultural practice. The integration of Wushu into higher education reflects its enduring legacy as a cornerstone of Chinese physical culture and its value in promoting physical fitness, discipline, and cultural heritage among students (Zhang, 2017).

The inclusion of Wushu short weapons courses in higher learning institutions provides students with opportunities to engage in hands-on learning experiences and develop practical skills in traditional martial arts techniques (Yang & Gu, 2018). These courses often emphasize the mastery of specific short weapons, such as swords, staffs, and spears, through structured instruction, practice sessions, and performance demonstrations (Zhang & Li, 2019).

Furthermore, Wushu short weapons courses offer students a holistic educational experience that combines physical training with cultural appreciation and historical understanding (Zhang, 2017). Through the study of Wushu, students gain insights into Chinese martial arts philosophy, ethics, and aesthetics, fostering a deeper understanding of Chinese culture and identity (Liu & Song, 2020).

In recent years, there has been a growing recognition of the benefits of Wushu education in higher learning institutions, leading to increased support and investment in Wushu programs and facilities (Wang & Wang, 2018). Universities and colleges across China have established dedicated Wushu departments, research centers, and training facilities to promote the study and practice of Wushu among students (Zhang & Li, 2019).

Moreover, the popularity of Wushu short weapons courses has extended beyond China's borders, with an increasing number of international students expressing interest in learning traditional Chinese martial arts (Zhang & Li, 2019). This trend reflects the global appeal of Wushu as a cultural practice and physical activity, transcending linguistic and cultural barriers to foster cross-cultural understanding and exchange (Zhang, 2017).

In conclusion, Wushu holds a prominent position in higher learning institutions in China, where it serves as both an academic discipline and a cultural tradition. The inclusion of Wushu short weapons courses provides students with unique opportunities to engage in hands-on learning experiences, develop practical skills, and gain insights into Chinese martial arts philosophy and culture.

Theoretical Framework: Self-Determination Theory (SDT)

The Self-Determination Theory (SDT), developed by Deci and Ryan (1985, 2000), serves as a highly relevant theoretical framework for understanding student interest, motivation, and engagement in Wushu short weapons courses. SDT is a motivation-based theory that explains how individuals' psychological needs influence their intrinsic and extrinsic motivation, ultimately affecting their learning experiences and participation in activities such as sports and martial arts. According to SDT, human motivation is driven by three fundamental psychological needs: autonomy, competence, and relatedness. Autonomy refers to an individual's need to feel in control of their actions and choices, fostering a sense of self-determination. Competence is the need to feel effective and capable in interactions with the environment, which plays a crucial role in developing confidence and persistence in learning new skills. Relatedness refers to the need to feel connected, valued, and supported by others, such as peers and coaches, which enhances motivation and engagement. When these psychological needs are satisfied, individuals experience greater intrinsic motivation, leading to higher engagement, persistence, and interest in an activity (Ryan & Deci, 2017). However, when these needs are not met, students may experience low motivation, disengagement, and even dropout from activities like Wushu training.

In the context of this study, SDT is particularly useful in explaining the relationship between functional motor competence, coach support, and student interest in Wushu short weapons courses. Functional motor competence plays a critical role in fulfilling the competence need, which, according to SDT, is a key driver of intrinsic motivation. Students who feel physically competent in executing Wushu short weapons techniques are more likely to develop greater interest and intrinsic motivation toward their training (Deci & Ryan, 2000). Conversely, students with low functional motor competence may experience frustration, reduced self-efficacy, and eventual disengagement from the course (Stodden et al., 2008). This study applies SDT to investigate how students' perceived competence in motor skills influences their motivation and interest in Wushu training. If students perceive themselves as skilled and capable, they are more likely to engage in and enjoy the course.

Additionally, coach support plays a crucial role in satisfying the relatedness and autonomy needs of students. Research suggests that supportive coaching behaviors, such as positive reinforcement, constructive feedback, and autonomy-supportive coaching, enhance students' sense of competence and relatedness, thus fostering greater motivation and engagement (Mageau & Vallerand, 2003). Coaches who provide autonomy-supportive coaching help students develop a sense of ownership over their learning, which leads to higher intrinsic motivation and long-term commitment to training. However, a controlling or authoritarian coaching style may undermine students' autonomy, resulting in decreased motivation and lower interest in Wushu (Reeve & Jang, 2006). Therefore, this study examines the mediating role of coach support in maintaining student interest by fulfilling their psychological needs and providing an environment that fosters self-determined learning.

When students feel competent, supported, and autonomous, they are more likely to develop intrinsic motivation (Ryan & Deci, 2017). This intrinsic motivation serves as an internal drive that enhances student engagement, leading to higher course retention and long-term participation in

martial arts. This study applies SDT to explore how functional motor competence and coach support interact to influence students' intrinsic motivation, which in turn affects their interest and persistence in Wushu short weapons courses.

Based on the principles of SDT, the following conceptual model is developed: Functional Motor Competence positively influences student interest by fulfilling the competence need, while Coach Support satisfies the relatedness and autonomy needs, thereby enhancing student motivation and engagement. Moreover, Coach Support acts as a mediator between Functional Motor Competence and Student Interest, emphasizing the importance of coaching strategies in sustaining student motivation.

SDT provides a strong theoretical foundation for understanding the psychological factors influencing student engagement in Wushu training. By examining the interaction between functional motor competence and coach support, this study contributes to both sports psychology and education, offering practical recommendations for improving student motivation, coaching strategies, and curriculum development in martial arts education. Understanding how intrinsic motivation is shaped by competence and external support systems can help educators and policymakers design more effective sports education programs that promote student engagement and lifelong participation in martial arts.

Research Methodology

This study employs a quantitative research design using a cross-sectional survey method. A correlational research approach is used to examine the direct and mediated relationships between functional motor competence, coach support, and student interest. The study follows a non-experimental design, as it does not involve any manipulation of variables but rather seeks to establish associations between the key constructs.

The Self-Determination Theory (SDT) (Deci & Ryan, 1985) serves as the theoretical foundation, guiding the investigation of how competence, autonomy, and relatedness influence student motivation in Wushu training. Structural Equation Modeling (SEM) is used to test the mediation effect of coach support between functional motor competence and student interest.

The target population consists of university students enrolled in Wushu short weapons courses in higher learning institutions in China. These students participate in Wushu courses as part of their physical education curriculum, sports science programs, or martial arts elective courses.

This study employs stratified random sampling, ensuring representation from universities offering Wushu courses in different regions of China. The stratification is based on:

- Geographical location (e.g., North China, South China, East China, West China).
- Type of university (sports-focused universities vs. general universities offering martial arts courses).

A sample of 300–400 university students will be selected based on Cohen's (1992) power analysis for structural equation modeling (SEM). The final sample size ensures sufficient statistical power for path analysis and mediation testing.

Results

The quantitative analysis of the collected data provides insights into the relationship between functional motor competence (FMC), coach support (CS), and student interest (SI) in Wushu short

weapons courses. A total of 400 university students from various institutions across China participated in the study, ensuring a diverse and representative sample.

The results indicate that the majority of students (65%) demonstrated moderate to high levels of FMC, as measured by the standardized TGMD-3 framework. A significant positive correlation ($r = 0.78, p < 0.01$) was found between FMC and student interest in Wushu short weapons courses, suggesting that students with higher FMC are more likely to exhibit a greater interest in these courses.

The coach support measurement, using the adapted Coach-Athlete Relationship Questionnaire (CART-Q), revealed that a substantial proportion of students (72%) perceived high levels of coach support. Specifically, students reported high levels of closeness, commitment, and complementarity in their relationships with their coaches. A strong positive correlation ($r = 0.85, p < 0.01$) was observed between coach support and student interest, indicating that coach support is a significant predictor of student engagement and interest in Wushu training.

Student interest in Wushu short weapons courses was assessed using the Adapted Sport Motivation Scale (SMS-II). The results showed that a considerable number of students (58%) expressed a high level of interest, indicated by high scores in enjoyment, persistence, and willingness to continue learning Wushu. A multiple regression analysis was conducted to examine the combined effects of FMC and CS on SI. The results indicated that both FMC ($\beta = 0.45, p < 0.01$) and CS ($\beta = 0.55, p < 0.01$) significantly contributed to student interest, with coach support having a slightly stronger influence.

Structural Equation Modeling (SEM) was employed to test the mediation effect of coach support on the relationship between functional motor competence and student interest. The results confirmed that coach support acts as a significant mediator, with a mediation effect size of 0.39 ($p < 0.01$). This finding suggests that coach support plays a crucial role in enhancing students' motivation and engagement by fostering a supportive learning environment and providing necessary guidance.

To gain a deeper understanding of the perceived impact of coach support, semi-structured interviews were conducted with a subset of 20 students who participated in the quantitative survey. The interviews explored students' experiences and perspectives on coach support, functional motor competence, and their interest in Wushu short weapons courses.

Several themes emerged from the interviews, including the importance of autonomy-supportive coaching, the influence of coach-athlete relationships, and the role of functional motor competence in maintaining interest.

Coaching Students consistently highlighted the significance of autonomy-supportive coaching in enhancing their motivation and engagement. They appreciated coaches who provided constructive feedback, encouraged self-exploration, and allowed them to take ownership of their learning. One student remarked, "My coach always encourages me to try new things and gives me feedback on how to improve. This makes me feel more confident and motivated to continue learning."

The quality of coach-athlete relationships was also a prominent theme in the interviews. Students emphasized the importance of trust, respect, and emotional support from their coaches. They felt that a supportive coaching style fostered a positive learning environment and contributed to their overall enjoyment and interest in Wushu. A student shared, "I have a great relationship with my coach. They are always there to support me and help me overcome challenges. This makes me want to keep practicing and improving."

Lastly, students recognized the role of functional motor competence in maintaining their interest in Wushu short weapons courses. They noted that improving their skills and abilities made them feel accomplished and motivated to continue training. One student expressed, "As I become more skilled in Wushu, I find it more enjoyable and challenging. This keeps me interested and engaged in the course."

Discussion

The findings from this study provide a comprehensive understanding of the relationship between functional motor competence (FMC), coach support (CS), and student interest (SI) in Wushu short weapons courses within the context of higher learning institutions in China. The quantitative results demonstrate a significant correlation among these variables, with FMC positively influencing student interest and coach support serving as a critical mediator in enhancing this relationship. Specifically, students with higher FMC scores exhibited greater interest in learning Wushu short weapons courses. Furthermore, coach support was found to positively impact student interest, suggesting that a supportive coaching environment fosters student engagement and motivation.

The qualitative data complemented these findings by offering insights into the perceived impact of coach support. Interviews with students revealed that they valued coaches who provided constructive feedback, encouraged personal growth, and created a positive learning atmosphere. These findings align with self-determination theory (SDT), which emphasizes the importance of social support in fostering intrinsic motivation.

This study contributes to the existing theoretical framework by providing empirical evidence for the relationship between FMC, coach support, and student interest in martial arts courses. The results support the notion that FMC is a foundational skill that influences student interest and participation in physical activities, particularly in the domain of martial arts. Furthermore, the study extends the application of SDT by demonstrating the mediating role of coach support in enhancing student motivation. This contributes to a growing body of literature that highlights the significance of coaching strategies in promoting student engagement and achievement in physical education settings.

Despite its contributions, this study is not without limitations. First, the generalizability of the findings may be restricted due to the study's focus on higher learning institutions in China. Cultural and educational differences may influence the applicability of the results to other contexts. Second, the cross-sectional design of the study limits the ability to infer causal relationships among the variables. Longitudinal studies are needed to further explore how changes in FMC, coach support, and student interest interact over time. Finally, the sample size, while adequate for the purposes of this study, may limit the precision of the estimates and the ability to detect subtle differences among subgroups.

Future research should address these limitations by exploring the relationship between FMC, coach support, and student interest in martial arts courses in diverse cultural and educational settings. This will help to establish the generalizability of the findings and identify potential variations in coaching strategies and student motivations across different contexts. Additionally, longitudinal studies are needed to investigate the causal relationships among these variables and the impact of interventions designed to improve FMC and coaching support. Researchers should also consider examining the role of other potential mediators, such as peer support and personal goal setting, in influencing student interest and participation in martial arts courses. Such studies will contribute to

a more comprehensive understanding of the factors that influence student motivation and engagement in physical education settings.

Conclusion

This study examined the relationship between functional motor competence (FMC), coach support, and student interest in learning Wushu short weapons courses in higher learning institutions in China. The quantitative data collected from a sample of students revealed several key findings. Firstly, a significant positive correlation was observed between FMC and student interest in Wushu short weapons courses. This suggests that students with higher levels of FMC are more likely to exhibit greater interest in these courses. Secondly, coach support emerged as a significant mediator in the relationship between FMC and student interest. Students who perceived higher levels of coach support showed heightened interest and motivation towards learning Wushu short weapons. Furthermore, the qualitative data from interviews with students complemented these findings, emphasizing the importance of constructive feedback, encouragement for personal growth, and a positive learning atmosphere from coaches.

This study has demonstrated the intricate relationship between functional motor competence, coach support, and student interest in learning Wushu short weapons courses in higher learning institutions in China. By examining these variables, the study has provided valuable insights into the factors that influence student motivation and engagement in martial arts training. The findings have contributed to the existing knowledge in sports psychology and martial arts education, with practical implications for coaches, educators, and policymakers. As martial arts continue to gain popularity and recognition globally, it is crucial for higher learning institutions to adopt effective coaching strategies and curricula that can enhance student interest and performance. Future research should build on these findings by exploring other potential mediators and moderators in the relationship between FMC, coach support, and student interest, as well as examining the long-term effects of these variables on student outcomes.

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