

The Mediating Role of Peer Relationships in the Relationship Between Physical Education Course Satisfaction and Motivation

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ABSTRACT

Purpose: This research focuses on examining the mediating role of the cohesion and conflict dimensions of peer relationships in the connection between physical education and sports course satisfaction and students' motivation towards the course.

Method: The research was conducted using a quantitative research design. The study group consisted of 628 students attending secondary schools during the 2025–2026 academic year. The Physical Education and Sports Course Satisfaction Scale, the Physical Education Course Peer Relations Scale, and the Physical Education Motivation Scale were used as data collection tools. Pearson correlation analysis and a parallel multiple mediation model were applied in the analysis of the data, and indirect effects were tested using the bootstrapping method.

Results: The findings indicate that satisfaction with physical education course positively and significantly predicts motivation. It has been determined that class satisfaction increases peer cohesion and reduces peer conflict. Furthermore, peer cohesion has been found to increase motivation, while peer conflict has been found to decrease it. Mediation analyses revealed that the dimensions of peer relationships, namely cohesion and conflict, partially mediated the relationship between satisfaction and motivation.

Conclusion: The findings indicate that students' motivation in physical education course is shaped not only by individual assessments but also by social interaction processes. Supportive peer relationships strengthen motivation, while conflictual relationships can weaken it. Therefore, fostering a positive classroom climate and healthy peer interactions in physical education course is important.

Keywords: Physical education, course satisfaction, motivation, peer relationships, mediation model

ÖZET

Beden Eğitimi Ders Memnuniyeti ile Motivasyon Arasındaki İlişkide Akran İlişkilerinin Aracılık Rolü

Amaç: Bu çalışmada, beden eğitimi ve spor dersi memnuniyeti ile öğrencilerin derse yönelik motivasyonları arasındaki ilişkide akran ilişkilerinin uyum ve çatışma boyutlarının aracılık rolünün incelenmesi amaçlanmıştır.

Yöntem: Araştırma nicel araştırma deseninde yürütülmüştür. Araştırmanın çalışma grubu, 2025–2026 eğitim öğretim yılında ortaokullarda öğrenim gören 628 öğrenci oluşturmaktadır. Veri toplama aracı olarak Beden Eğitimi ve Spor Dersi Memnuniyet Ölçeği, Beden Eğitimi Dersi Akran İlişkileri Ölçeği ve Beden Eğitimi Motivasyon Ölçeği kullanılmıştır. Verilerin analizinde Pearson korelasyon analizi ve paralel çoklu aracılık modeli uygulanmış, dolaylı etkiler bootstrapping yöntemi ile test edilmiştir.

Bulgular: Bulgular, beden eğitimi dersi memnuniyetinin motivasyonu pozitif yönde ve anlamlı biçimde yordadığını göstermiştir. Ders memnuniyetinin akran uyumunu artırdığı, akran

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çatışmasını ise azalttığı belirlenmiştir. Ayrıca akran uyumunun motivasyonu artırıcı, akran çatışmasının ise azaltıcı yönde etkili olduğu saptanmıştır. Aracılık analizleri sonucunda, akran ilişkilerinin uyum ve çatışma boyutlarının memnuniyet ile motivasyon arasındaki ilişkide kısmi aracılık rolü üstlendiği görülmüştür.

Sonuç: Elde edilen bulgular, beden eğitimi derslerinde öğrencilerin motivasyonlarının yalnızca bireysel değerlendirmelerle değil, sosyal etkileşim süreçleriyle de şekillendiğini göstermektedir. Destekleyici akran ilişkileri motivasyonu güçlendirirken, çatışma içeren ilişkiler motivasyonu zayıflatabilmektedir. Bu nedenle beden eğitimi derslerinde olumlu sınıf iklimi ve sağlıklı akran etkileşimlerinin desteklenmesi önem taşımaktadır.

Anahtar Kelimeler: Beden eğitimi, ders memnuniyeti, motivasyon, akran ilişkileri, aracılık modeli

INTRODUCTION

Physical education course and school-based sports activities are considered fundamental educational environments that support lifelong physical activity by developing students' participation skills and motivation in physical activity (Bocarro et al., 2008; Lee, 2004). Motivation, one of the fundamental forces that drives individuals to action, plays a decisive role in their orientation regarding physical education and sports course. Motivational processes support students' active participation in course, their desire to learn, and the development of positive attitudes towards the course (Yetim et al., 2014). It is stated that students with high motivation levels participate more willingly in course activities, show more effort, and perceive obstacles related to the course at a lower level (Namlı et al., 2024). Furthermore, it is stated that increased motivation strengthens students' interaction with their peers and paves the way for more effective participation in group work (Tekkurşun-Demir & Cicioğlu, 2023).

Satisfaction with physical education course is an important variable that reflects students' overall assessments of the course process. Studies conducted within the framework of self-determination theory have revealed that the fulfilment of basic psychological needs significantly predicts course satisfaction (Ferriz et al., 2013). It is stated that meeting these needs contributes to students developing more autonomous motivation, and that autonomous motivation is positively related to satisfaction with physical education course (Leyton Román et al., 2019). Furthermore, it is stated that a task-oriented classroom climate strengthens students' intrinsic motivation and this increase in motivation is reflected in satisfaction levels (Baena-Extremera et al., 2015).

Physical education courses are social learning environments where students interact more intensively than in other subjects (Flick et al., 2024; Yücekaya et al., 2025). In these courses, teachers and peers significantly influence students' perceptions of social connectedness and their emotional experiences related to the course (Cox et al., 2009). Indeed, positive peer

relationships, such as peer acceptance and friendship quality, have been reported to increase students' sense of belonging to the course and their self-determined motivation; raising their enjoyment levels while reducing their anxiety levels (Cox et al., 2009; Cox & Ullrich-French, 2010). Conversely, weak peer relationships and negative social experiences can increase students' levels of social anxiety and negatively affect their lesson experiences (Flick et al., 2024). Indeed, conflict-based elements such as perceived peer bullying and exclusion in physical education course directly undermine students' satisfaction with the course and can trigger psychological risks such as school burnout (Uğraş, et al., 2025). This situation highlights the need to address peer relationships not only in terms of cohesion but also in terms of conflict.

Self-Determination Theory provides an important theoretical framework for explaining the role of these social interactions in student motivation. According to Self-Determination Theory, individuals' motivation is influenced not only by personal characteristics but also by the social environment in which they find themselves. The theory asserts that the fulfilment of fundamental psychological needs—such as autonomy, competence and relatedness—is decisive in the development of an individual's motivation (Ryan & Deci, 2020). In the school environment, peer relationships significantly contribute to the development of students' sense of belonging. Indeed, studies have shown that positive peer relationships strengthen students' sense of belonging to the school, which in turn supports their academic motivation (Norder et al., 2025). However, peer interactions do not always yield positive outcomes. Whether students perceive their peers as positive or negative sources of motivation can either support or undermine their motivational processes (Schimmelpfennig, 2025). Therefore, the quality of peer relationships may serve as an important social mechanism explaining the impact of students' course satisfaction on motivation.

Explaining the relationship between physical education and sports course satisfaction and motivation solely through individual characteristics may be limited. The literature indicates that course satisfaction is related to motivation (Akbulut, 2025) and emphasises that motivational processes are influenced by structural elements in the course context (Chen & Stotlar, 2012). However, the fact that physical education courses are a social learning environment requires peer relationships to be taken into account in this process. Indeed, a study conducted in the context of physical education showed that peer acceptance and friendship quality are related to students' sense of social connectedness in the course; social connectedness perception, in turn, is linked to more self-determined motivation and more positive emotional experiences (Cox et al., 2009). Furthermore, it has been revealed that peer relationships significantly predict the

level of participation in physical education courses (Li, 2024). On the other hand, it is stated that peer relationships specific to physical education course can be examined under the dimensions of cohesion and conflict, and that these two dimensions present independent but inversely related structures (Yücekaya et al., 2025). Current findings in the literature prove that interest in and satisfaction with physical education courses are critical mediating variables in the relationship between students' school attachment and life satisfaction (Ateş et al., 2025; Sağın et al., 2025).

In this context, peer relationships may also play a similar mediating role in the relationship between physical education and sports course satisfaction and motivation. In this context, the present study aims to examine the mediating role of the cohesion and conflict dimensions of peer relationships in the relationship between physical education and sports course satisfaction and students' motivation towards the course. Within this scope, the following hypotheses were tested:

H1: Satisfaction with physical education and sports course positively and significantly predicts students' motivation towards the lesson.

H2: Satisfaction with physical education and sports course positively and significantly predicts the cohesion dimension of peer relationships.

H3: Satisfaction with physical education and sports course predicts the conflict dimension of peer relationships negatively and at a significant level.

H4: The cohesion dimension of peer relationships predicts motivation towards the course positively and at a significant level.

H5: The conflict dimension of peer relationships predicts motivation towards the course negatively and at a significant level.

H6: The cohesion dimension of peer relationships plays a mediating role in the relationship between physical education and sports course satisfaction and motivation.

H7: The conflict dimension of peer relationships plays a mediating role in the relationship between physical education and sports course satisfaction and motivation.

METHODS

Study Group

The study group for the research consists of a total of 628 students enrolled in secondary schools during the 2025-2026 academic year. The research was conducted on a voluntary basis. 48.7% (n=306) of the participants were female students, while 51.3% (n=322) were male students. When examined by grade level, 30.9% of the students were in Year 5, 12.4% were in Year 6, 19.7% were in Year 7, and 36.9% were in Year 8. Furthermore, 31.4% of participants (n=197) stated that they were licensed athletes, while 68.6% (n=431) were not licensed athletes in any sport.

Data Collection Tools

The study utilized the following data collection instruments: “*Physical Education and Sports Course Satisfaction Scale*,” “*Physical Education Course Peer Relations Scale*,” and “*Physical Education Motivation Scale*.”

Physical Education and Sports Course Satisfaction Scale: The scale developed by Uğraş and Total (2021) was used to determine students' satisfaction levels with physical education courses. The scale consists of 3 sub-dimensions and a total of 22 items: “Teacher Satisfaction” (8 items), “Facility and Sports Equipment Satisfaction” (7 items), and “Course Satisfaction” (7 items). Items on the 5-point Likert scale are rated between “Strongly Agree (5)” and “Strongly Disagree (1)”. The Cronbach Alpha internal consistency coefficient in the original study of the scale was reported as .95. In this study, the Cronbach Alpha internal consistency coefficient for the total score of the scale was calculated as .93, and McDonald's Omega coefficient as .93.

Physical Education Peer Relationships Scale: The scale developed by Yücekaya et al. (2025) was used to assess social interaction (communication, cooperation, conflict, etc.) among students in physical education course. The scale consists of two subscales, “Cohesion” (5 items) and “Conflict” (4 items), and a total of 9 items. The scale has a 5-point Likert-type rating ranging from “Always (5)” to “Never (1)”. In the original study, Cronbach's Alpha coefficients were found to be .81 for the Cohesion dimension and .79 for the Conflict dimension. In this study, the Cronbach Alpha coefficients calculated were .84 for the Cohesion sub-dimension and .72 for the Conflict sub-dimension. McDonald's Omega coefficients were .84 for the Cohesion sub-dimension and .73 for the Conflict sub-dimension.

Physical Education Motivation Scale: The scale developed by Sulz and colleagues (2016) and adapted into Turkish by Akbulut and Öncü (2023) was used. The scale consists of 3 sub-

dimensions, namely “Intrinsic Motivation,” “Extrinsic Motivation,” and “Lack of Motivation,” and a total of 9 items. The Cronbach Alpha values for the adaptation study of the scale, which is scored on a 5-point Likert scale (1=Strongly Disagree, 5=Strongly Agree), were calculated as .77, .76, and .81, respectively. In this study, the Cronbach Alpha internal consistency coefficient calculated for the scale's total score was .74, and McDonald's Omega coefficient was .76.

Data Collection

Data were collected in line with the ethical standards of the Declaration of Helsinki, and ethical approval was granted by the Social and Human Sciences Ethics Committee of Dicle University (Decision No: 310, May 30, 2025). The necessary legal permissions were obtained from the relevant school administrations before proceeding to the data collection stage. Data were gathered through face-to-face by the researchers themselves by visiting the schools. Given before data collection, students received a detailed explanation about the purpose and scope of the research and the confidentiality of the answers; it was emphasized that participation was entirely voluntary. On average, students completed the data collection instruments within 10–15 minutes.

Data Analysis

During the data analysis process, the data set was first examined for errors and missing codes. Skewness and kurtosis coefficients were examined to determine whether the data met the assumption of normal distribution. The relevant coefficients were found to have values between -1.5 and +1.5, and the data was considered to be normally distributed (Tabachnick and Fidell, 2013).

Frequency and percentage analyses were performed to determine the demographic characteristics of the participants, and the arithmetic mean and standard deviation values of the scores obtained from the scales were calculated. Pearson's correlation coefficient was used to determine the direction and level of relationships between variables.

To test the research hypotheses, a Parallel Multiple Mediation Model was established to examine the mediating role of peer relationships (cohesion and conflict) in the relationship between physical education and sports course satisfaction and motivation. The statistical significance of the mediating effects was tested using the Bootstrapping method on a sample of 5000, and 95% Confidence Interval values were considered. If the lower and upper limits of the

confidence interval did not include “0,” the mediating effect was considered significant (Hayes, 2018). In all analyses, the statistical significance level was set at $p < .05$.

RESULTS

Pearson Correlation analysis was performed to determine the relationships between the research variables; in addition, descriptive statistics for the variables are summarized in a single table. The relationship coefficients between physical education course satisfaction, peer relationships (adaptation and conflict), and motivation levels, along with their mean and standard deviation values, are presented in Table 1.

According to the analysis results, there are positive and statistically significant relationships between physical education course satisfaction and peer adjustment ($r = .524$) and motivation ($r = .341$) ($p < .01$). When examining the dimension of peer conflict, low levels of statistically significant relationships were found between course satisfaction and peer conflict ($r = -.112$) and between course satisfaction and motivation ($r = .133$). The strongest relationship among the variables is between course satisfaction and peer cohesion.

Table 1. Correlations, Mean, and Standard Deviation Values Among Variables

Variables	1	2	3	4	Mean	Sd	Skewness	Kurtosis
1. Course Satisfaction	-				3.45	0.93	-0.419	-0.492
2. Peer Relationships: Cohesion	.524**	-			3.66	1.08	-0.584	-0.604
3. Peer Relationships: Conflict	-.112**	.281**	-		2.62	1.08	0.427	-0.599
4. Motivation	.341**	.320**	.133**	-	3.26	0.66	-0.142	0.782

Note: $N = 628$, * $p < .05$, ** $p < .01$. Mean: Arithmetic Mean, SD: Standard Deviation,

To test the research hypotheses, the results of the Parallel Multiple Mediation Model analysis examining the mediating role of peer relationships (cohesion and conflict) in the relationship between physical education course satisfaction and motivation are presented in Table 2.

Table 2. Results Regarding the Mediating Role of Peer Relationships in the Relationship Between Physical Education Course Satisfaction and Motivation

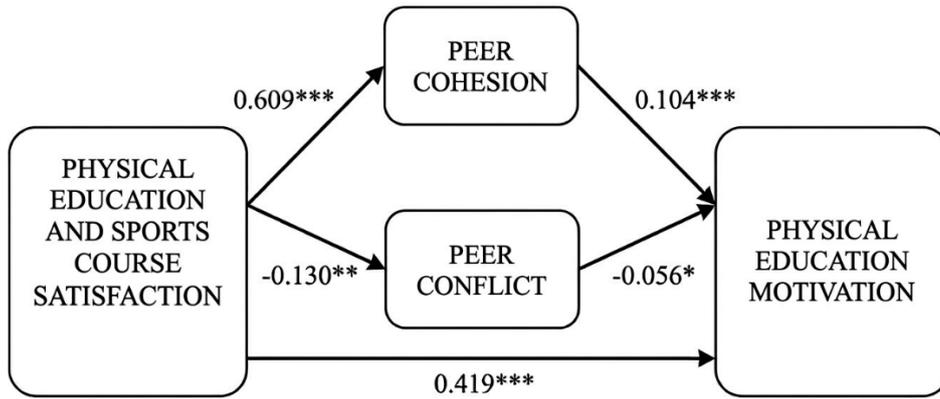
Effects and Paths	β	S.H.	t	p	%95 Confidence Interval (CI) Lower-Upper
Model Components (Path Analysis)					
Satisfaction → Peer Compatibility	.609	.039	15.43	<.001	.532 - .687
Satisfaction → Peer Conflict	-.130	.046	-2.83	.005	-.220 - -.039
Peer Compatibility → Motivation	.104	.031	3.41	<.001	.032 - .166
Peer Conflict → Motivation	-.056	.026	-2.13	.033	-.107 - -.005
Impact Analyses					
Total Impact	.489	.030	16.50	<.001	.425 - .558
Direct Impact	.419	.034	12.22	<.001	.349 - .502
Indirect Effects (Mediation Role)	Impact	S.H.			Lower-Upper
<i>Total Indirect Impact</i>	.071	.019	-	-	.036 - .110
<i>1. Path: Through Peer Cohesion</i>	.063	.019	-	-	.023 - .104
<i>2. Path: Through Peer Conflict</i>	.007	.004	-	-	.001 - .018

Table 2 shows that the total effect of physical education course satisfaction on motivation is positive and statistically significant ($\beta = .489$, $p < .001$). When the mediating variables (adaptation and conflict) were included in the model, the direct effect of satisfaction on motivation decreased but remained significant ($\beta = .419$, $p < .001$). This finding indicates that peer relationships play a partial mediating role.

When examining the indirect effects related to the model:

Peer Cohesion Path: Physical education course satisfaction strongly increases peer cohesion ($\beta = .609$). Increased peer cohesion, in turn, positively predicts motivation ($\beta = .104$). Since the 95% confidence interval values of this indirect effect through peer cohesion do not include “0” [0.023, 0.104], the effect is statistically significant.

Peer Conflict Path: Course satisfaction significantly reduces peer conflict ($\beta = -.130$). The reduced conflict level negatively affects motivation ($\beta = -.056$), providing an indirect increase in motivation (the reduction in conflict preserves motivation). When examining the confidence interval [0.001, 0.018] of the indirect effect through the conflict dimension, this effect was also found to be statistically significant.



* $p < .05$, ** $p < .01$, *** $p < .001$

Figure 1. Parallel Multi-Agency Model Road Coefficients

DISCUSSION

The findings of this study indicate that satisfaction with physical education and sports course significantly predicts students' motivation towards the subject in a positive manner. It was determined that satisfaction with the course positively and significantly affects the cohesion dimension of peer relationships and negatively and significantly affects the conflict dimension. Furthermore, it was found that peer cohesion has a motivating effect, while peer conflict has a demotivating effect. However, it was observed that the cohesion and conflict dimensions of peer relationships play a partial mediating role in the relationship between satisfaction with physical education and sports course and motivation.

This study found that satisfaction with physical education and sports course positively predicts students' motivation towards the lesson. This finding indicates that students' positive evaluations of the lesson process are related to their motivation levels. The strong relationship between satisfaction and motivation is frequently emphasised in the literature. Ferriz and colleagues (2013) revealed that self-determined motivation types significantly predict satisfaction with physical education course. Although the aforementioned study was constructed from directional motivation to satisfaction, a consistent positive relationship between the two variables has been reported. Similarly, Baena-Extremera and colleagues (2015) noted that a task-oriented classroom climate increases students' intrinsic motivation and that this increase is related to course satisfaction. These results suggest that the relationship between motivation and satisfaction involves a structure of mutual interaction.

This study also found that course satisfaction is significantly related to peer relationships. Students who are satisfied with their course have higher levels of peer cohesion and lower levels of conflict, indicating that experiences in physical education courses are reflected in social relationships. As physical education courses inherently provide an interaction-based environment, students' overall assessments of the course may influence the nature of the relationships they establish with their peers. Indeed, in a study conducted by Rodrigues and colleagues (2020) in the context of physical education, it was noted that a learning-oriented classroom climate was associated with students forming more positive social bonds with their peers. Similarly, a positive relationship between physical activity levels and peer support in adolescents has been demonstrated (Pierannunzio et al., 2022). Furthermore, Jung and colleagues (2025), in their research on school sports club participants, found that peer relationships significantly predicted satisfaction with exercise participation and exercise adherence, and that these variables were decisive in the intention to continue exercising.

The study determined that peer acceptance positively predicts motivation, while peer conflict negatively predicts it. This finding is consistent with the literature. Indeed, Cox and colleagues (2009) found that peer acceptance and friendship quality in physical education course positively predicted students' self-determined motivation. Similarly, Cox and Williams (2008) showed that students' levels of involvement in physical education course were significantly related to self-determined motivation. It is also stated that the negative aspects of peer relationships are related to students' anxiety levels. These results indicate that the quality of peer relationships may play an important role in motivational processes. Murillo-Moraño and colleagues' (2025) study conducted in physical education course also stated that students who experienced victimisation had lower levels of intrinsic and self-determined motivation, whereas students who defended their peers had higher motivation. This suggests that positive peer interactions may support motivation, while negative experiences may weaken it. Shin and colleagues (2019) noted that physical education activities can have changing effects on students' peer acceptance over time and that this relationship can vary depending on the classroom climate. These findings reveal that social experiences in the classroom environment can influence both students' peer status and their attitudes towards the subject. Furthermore, when examining findings regarding the effect of peer conflict on motivation, a statistically significant inhibitory effect was observed. A low level of positive correlation was found between conflict and motivation in the bivariate correlation analysis. Physical education courses, by their very nature, are environments that involve competitive elements and physical struggle. Students

experiencing conflict or tension with their peers based on competition may increase their tendency towards external motivation, particularly through efforts to prove themselves and establish superiority, and this situation may positively reflect on their overall motivation scores. However, when course satisfaction and peer cohesion are included in the mediation model and the variance shared by these variables is controlled for, it emerges that conflict reduces motivation (predicts it negatively). This finding confirms that peer conflict can establish a superficial positive relationship with motivation as an indicator of competitive interaction; however, when supportive factors such as course satisfaction and cohesion are excluded, pure conflict undermines motivational processes.

The study determined that the dimensions of peer relationships, namely cohesion and conflict, played a partial mediating role in the relationship between physical education and sports course satisfaction and motivation. This result indicates that the effect of course satisfaction on motivation cannot be explained solely by a direct process. Students' satisfaction with the course also affects the relationships they establish with their peers, and these social experiences are reflected in their motivation levels. Cohesive and supportive peer relationships strengthen motivation, while conflictual relationships can weaken this process. In this context, it can be said that the quality of the social environment in physical education course is an important determinant of students' motivational processes. Indeed, Shang and colleagues (2024) demonstrated that peer relationships play a mediating role in the effect of physical exercise on subjective well-being. The study indicated that physical activity positively affects students' peer relationships and that strengthened peer relationships are also associated with subjective well-being. Similarly, Bracho-Amador and colleagues (2023) revealed that teachers' disciplinary strategies play a mediating role in the relationship between the perceived motivational climate in physical education course and course satisfaction. Furthermore, Lemes and colleagues (2021) stated that the relationship between physical education course satisfaction and physical activity levels is not direct but indirect, emerging through variables such as participation in sports and health indicators. When these findings are evaluated together, it is understood that social and pedagogical processes in the context of physical education can have indirect effects on students' psychological outcomes.

Conclusion and Recommendations

This research demonstrates that satisfaction with physical education and sports course plays a significant role in students' motivation towards the subject. However, it is understood that this relationship is not limited to a direct effect alone, but is also shaped by the nature of

peer relationships. Supportive and cohesive peer relationships, in particular, enhance motivation, whereas conflictual relationships can negatively affect this process. This highlights that the social environment created in physical education course is at least as important as the instructional content. Therefore, teachers incorporating practices that foster a positive classroom climate and healthy peer interactions during the lesson may be effective in increasing students' motivation.

Future studies examining the relationship between satisfaction, peer relationships and motivation across different age groups and school environments may be beneficial. A more detailed examination of students' experiences of physical education course and peer interactions may contribute to a better understanding of the findings. Furthermore, the effects of practices aimed at strengthening the classroom environment and peer relationships on student motivation can be evaluated through applied studies.

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