

# The Mediating Role of Interest in Physical Education Class Between Satisfaction with Life and Attachment to School

## RESEARCH ARTICLE

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### Abstract

*In this study, the mediating role of interest in physical education class in the relationship between satisfaction with life and attachment to school was examined. The study included 395 students studying in secondary schools in Çanakkale province in the 2023-2024 academic year. The scales of attachment to school, satisfaction with life and interest in physical education and sports lessons were used in the study. In the research, the mediation analysis process was carried out through the JASP 0.16.4 statistical program. It was concluded that the model that was tried to be tested was confirmed. As a result of the model, it was found that satisfaction with life had a direct effect on attachment to school, attachment to friends and attachment to teachers. In addition to this result, it was determined that it had an indirect effect on attachment to school, friends and teacher through interest in physical education class. In line with the findings of this study, it is seen that interest in physical education and sports lessons is effective in increasing students' attachment to school, teacher and friends. For this reason, it is important to create pleasure and entertainment-oriented content especially in young age groups (primary and secondary school) in order to increase students' interest in the course.*

**Keywords:** *satisfaction with life, attachment to school, physical education class*

## Yaşam Doyumu ile Okula Bağlanma Arasında Beden Eğitimi Dersine İlginin Aracı Rolü

### ARAŞTIRMA MAKALESİ

#### Öz

*Bu çalışmada, yaşam doyumu ile okula bağlanma arasındaki ilişkide beden eğitimi dersine ilginin aracı rolü incelenmiştir. Araştırmaya Çanakkale ilinde ortaokullarda öğrenim gören 395 öğrenci dâhil olmuştur. Araştırmada okula bağlanma, yaşam doyumu ve beden eğitimi ve spor dersine ilgi ölçekleri kullanılmıştır. Araştırmada JASP 0.16.4 istatistik programı üzerinden aracı analiz işlemi gerçekleştirilmiştir. Test edilmeye çalışılmış olan modelin doğrulandığı sonucuna varılmıştır. Oluşturulan modelin sonucunda yaşam doyumunun okula bağlanma, arkadaşla bağlanma ve öğretmene bağlanma üzerinde doğrudan bir etkisi olduğu bulunmuştur. Bu sonuca ek olarak, beden eğitimi dersine ilgi yoluyla dolaylı olarak okula, arkadaşla ve öğretmene bağlanma üzerinde etki olduğu belirlenmiştir. Bu araştırmanın bulguları doğrultusunda, öğrencilerin okula, öğretmene ve arkadaşlarına olan bağlanmalarının arttırılmasında beden eğitimi ve spor dersine ilginin etkili olduğu görülmektedir. Bu nedenle özellikle küçük yaş gruplarında (ilkokul-ortaokul) haz ve eğlence odaklı içeriklerin oluşturulması öğrencilerin derse olan ilgilerini arttırılması adına önemlidir.*

*Anahtar Kelimeler:* yaşam doyumu, okula bağlanma, beden eğitimi dersi

#### Introduction

Schools have a large and important place in the education system. The school adventure, which starts with kindergarten class at the age of six on average, can extend until the age of thirties depending on the career planning of individuals. The education that individuals receive in schools during this process is very important in terms of shaping their future (Kara, 2020). Realizing the educational goals set in schools, raising healthy and educated students, and creating a healthy social structure are among the main tasks. One of the most effective factors in the process of fulfilling the determined goals and tasks is students' level of school belonging (Kalaycı & Özdemir, 2013). Belonging to the school is the ability of students to be successful in fulfilling the educational goals and to feel themselves as a part of the school (Erdoğan, 2013). According to another definition, school belonging is defined as the process in which students feel safe at school and actively participate in the learning process (Covell, 2010). Student's level of school belonging can be positively or negatively affected by many factors. School climate (Rizzotto & França, 2022), physical structure (Altuntaş & Sezer, 2017), student self-efficacy (Canbulat et al., 2017), teacher relations (Koşir et al., 2023), peer relations (Argon & Yılmaz, 2016) and attitudes towards extracurricular sportive activities (Ateş & Uğraş, 2023) are related to school belonging. As

students' level of belonging to school decreases, not only absenteeism problems (Wang & Fredricks, 2014) but also truancy and academic achievement problems (Niehaus et al., 2012) emerge. These negative problems are becoming increasingly problematic across the world. According to the Organisation for Economic Co-Operation and Development's (OECD) 2023 report, student absenteeism rates remain a serious problem. While in OECD countries, around 20% of students are absent from classes at least once, the rates in Turkey are much higher. In Turkey, around 30% of students are absent from school for one or two days, while 10% are absent for three or four days. In addition, 12% reported being absent from school for more than a week OECD. (OECD; 2023).

In the light of these data, it can be said that a large proportion of students in Turkey miss learning opportunities. If we consider the opposite of this situation, as students' level of school belonging increases, risky behaviors (Çakar & Uzun, 2021), self-harm (Chen & Cheung, 2020), burnout (Şahan & Duy, 2017) and criminal involvement (Abeling-Judge, 2021) decrease, while academic achievement (Covell, 2010), motivation to succeed (Sonsteng-Person et al., 2023) and school satisfaction with life (Abubakar & Dimitrova, 2016) increase. It can be said that it is important to increase students' school belonging in order to increase their positive life experiences and decrease their negative life experiences. Not only peer relationships (Li et al., 2020), but also socioeconomic status (King et al., 2022), teacher-student relationships (Li et al., 2022), and approach to students (Datu et al., 2023) are among the factors that affect students' level of school belonging. Students' attachment to friends and teacher is as important as attachment to school (Guay et al., 2017). If students' level of attachment to their friends increases, their sense of trust (He et al., 2018) academic performance (Kiuru et al., 2020), attachment to school (Fredricks et al., 2019) and satisfaction with life (Oberle et al., 2011) improve positively. Conversely, academic achievement (Liu et al., 2014), suicidal ideation (Forster et al., 2020), attachment to school (Guay et al., 2017), trust, communication and alienation (Gorrese, 2016) change negatively. Likewise, if students' attachment levels to teachers increase, satisfaction with life (Özdemir & Koruklu, 2013) and positive social behaviors increase, while hyperactivity and behavioral problems decrease (Karaşar & Kapçı, 2016).

Satisfaction with life emerges as an important concept when students' attachment to school, attachment to friends and attachment to teachers are

examined (Özdemir & Koruklu, 2013). There is a mutual relationship between students' school belonging levels and satisfaction with life. These variables, which are in a mutual relationship, are critical factors affecting students' learning situations (Lucktong et al., 2018). In the studies conducted in the domestic literature (Özdemir & Koruklu, 2013; Çıkrıkçı & Erzen, 2020), it was stated that students whose school belonging levels were at the desired level achieved more satisfaction with life, while students whose school belonging levels were not at the desired level achieved less satisfaction with life. In studies conducted abroad (Haslam et al., 2009; Lewis et al., 2011), it is seen that there is a significant relationship between students' school belonging levels and their satisfaction with life. Likewise, there is a reciprocal relationship between students' level of attachment to friends and satisfaction with life (You et al., 2018). For example, the satisfaction with life levels of students who reported their friendship ties as very good were found to be higher than students who reported their friendship ties as good (Özgür et al., 2008). Similarly, it has been revealed that satisfaction with life is in a reciprocal relationship with positive peer ties (Oberle et al., 2011). It is also possible to talk about the reciprocal relationship between students' level of attachment to teachers and satisfaction with life (Özdemir & Koruklu, 2013). In a study, there is a significant positive relationship between students' attachment to teachers and their satisfaction with life (Çakar & Karataş, 2017). In another study, it was determined that students who had better attachment with their teachers were more satisfied with their school life (Kim & Kim, 2013). There are studies in which the variables of attachment to school, attachment to friends, and attachment to teachers, which are related to students' satisfaction with life, were examined together (Çakar & Karatas, 2017; Kim and Kim, 2013; Liu et al., 2016; Özdemir & Koruklu, 2013). As students' satisfaction with life increases, their positive attitude towards school, friends and teachers (Çakar & Karataş, 2017; Uğraş & Güllü, 2020), academic achievement (Erdoğan, 2020), positive future expectation (Eryılmaz, 2011), optimism and happiness (Sapmaz & Doğan, 2012) levels increase. On the other hand, it is seen that those with high satisfaction with life experience less depression and stress and exhibit higher levels of motivation (Proctor et al., 2009).

Motivation is a very important factor for students' learning (Palmer, 2009). Another important factor that supports students' learning is interest, which is a characteristic of motivation (Hidi, 2006). The concept of interest

is defined by Renninger and Hidi (2016) as a means of adding motivation to people's activities. There is a relationship between interest and learning as well as between interest and satisfaction with life (Ainley, 2012). It is widely supported in the literature that students who regularly play sports or participate in physical activities with interest have positive effects on their life satisfaction. Physical activity not only improves physical health, but also increases psychological and social well-being (Sağın et al., 2022). Research shows that regular participation in physical activity reduces stress, depression and anxiety and increases overall happiness and life satisfaction (Penedo & Dahn, 2005; Eime et al., 2013; Sağın, 2022). These positive gains are also achieved through physical education classes in the school curriculum. Physical education classes strengthen students' social interactions and increase their life satisfaction by strengthening friendship bonds (Telford et al., 2023; Bailey et al., 2013). In addition, students' interest in physical education classes is an important factor that increases participation and supports both physical and emotional development. Interest in physical education classes is defined as "the attractive effect of the characteristics of an activity on an individual" and students' enjoyable experiences in these classes reinforce their interest in the course (Chen & Darst, 2001; Subramaniam, 2009).

Several factors contribute to increased student engagement in physical education classes: providing enjoyable experiences during class activities (Huang & Gao, 2013), presenting captivating lesson content that exposes students to new and exciting activities (Chen & Ennis, 2004), creating engaging and diverse learning tasks or learning environments (Subramaniam, 2009), adopting a curriculum that encourages participation in physical activity (Linda Rikard & Banville, 2006), fostering a sense of enjoyment, challenge, and active mental focus during activities (Roure & Pasco, 2018), emphasizing health and well-being awareness (Doolittle, 2014), and incorporating thematic lesson content such as nature sports (McNamee & Timken, 2017). While there are a limited number of studies on interest in physical education courses in Turkey (Sağın, 2022; Uğraş & Temel, 2020), there are many studies abroad (Chen & Wang, 2017; Doolittle, 2014; Lentillon-Kaestner and Roure, 2019; McNamee and Timken, 2017; Roure & Pasco, 2018). There are positive effects of students' participation in physical education classes. In addition to the emergence of positive health-related behaviors (Martins et al., 2022), physical education helps to maintain physical activity by adopting an active lifestyle (Uddin et al., 2020).

Maintaining regular physical activity offers many positive health effects. The benefits include prevention of obesity, protection of cardiorespiratory and muscle health, reduction of injury risks, protection of mental health, prevention of stress, depression and anxiety (Humphreys et al., 2014; Luan et al., 2019; Warburton et al., 2006). However, physical education classes are not only limited to the development of health skills, but also contribute to the development of social skills. The study by Santos et al. (2020) shows that the number of friends of students participating in physical education classes increases and this contributes positively to their socialization. Beyond this, it has been proven to have positive effects on students' memory, concentration, classroom behavior and academic performance (Trudeau & Shephard, 2008). Oya and Ishihara (2022) stated that having fun and enjoyable physical education lessons can ensure a lifelong interest in the lesson and sporting activities. Spending physical education lessons in different learning environments and tasks makes the lesson more fun and enjoyable for students. While this situation increases the interest in physical education, it is thought to affect satisfaction with life and attachment to school positively. In this study, the mediating role of interest in physical education class in the relationship between life satisfaction and school engagement was examined. In this context, the main gap in the literature is that the effect of interest in physical education on students' overall life satisfaction and school engagement has not been sufficiently examined. Existing research generally focuses on the physical benefits of physical education, but provides limited findings on its effects on students' social and emotional development. This study aims to fill this gap and to demonstrate that interest in physical education can increase students' satisfaction with school life not only in physical but also in psychosocial domains.

The reason for choosing middle school students as the participant group is that this age group is in a critical period in terms of both physical and psychosocial development. The middle school years are a period in which students strengthen their ties with their social environment and school, and at the same time their life satisfaction is shaped. In this age group, it is meaningful to examine the effect of interest in physical education class on students' commitment to school and their general life satisfaction. Especially in this period, students' attachment to their social environment, their relationships with their teachers and friends significantly affect their school experiences. In this context, studies on middle school students provide an important opportunity to understand the potential impact of interest

in physical education class on these social relationships. Previous studies have shown that students' school engagement and overall life satisfaction are related to a variety of factors (Canbulat et al., 2017; Li et al., 2022; Rizzotto & França, 2022). This study suggests that physical education class may play a critical role in this process.

## Methods

In this section of the study, the research model, research group, data collection tools and data analysis are explained in detail under separate headings.

### Research Model

In this study, which examines the mediating role of interest in physical education class between high school students' satisfaction with life and attachment to school, the relational research model, one of the quantitative research methods, was used. In the relational research model, it is aimed to determine and reveal the relationship between two or more quantitative variables (Fraenkel et al., 1993).

### Participants

A total of 395 participants, 185 females (47%) and 210 males (53%), studying in secondary schools affiliated to Çanakkale National Education Directorate, were included in the study. The population of the study consists of approximately 22.000 secondary school students. The participant students taken as the study group were from the 5th grade to the 8th grade and their distribution was as follows: 72 students from 5th grade (18%), 110 students from 6th grade (28%), 100 students from 7th grade (25%) and 113 students from 8th grade (29%). Regarding extracurricular sports participation, 123 students (31%) reported participating in such activities, while 272 students (69%) did not.

### Data Collection and Ethical Principles

In this study, data were collected from 395 secondary school students studying in Çanakkale city center in the 2023-2024 academic year. Convenience sampling method was used to select participants, which allows researchers to select individuals who are easy to reach and willing to participate voluntarily (Etikan et al., 2016). During the process of informing the participants, it was stated that their voluntary participation in the study was essential and they were assured that their responses would be kept confidential. In accordance with ethical principles, both written and verbal consent was obtained from the

participants. The data collection process was conducted in a quiet and distraction-free classroom environment, and it took approximately 15-20 minutes for the students to complete the questionnaire. In order to ensure data security and integrity, the collected data were transferred to the Excel program and made ready for analysis. During the research process, the rights of the participants were respected and ethical rules were followed during the data collection process. Confidentiality and security of the data were of great importance, and the purpose of the research, the process and the rights of the participants were clearly stated to prevent misunderstandings.

### **Data Collection Tools**

**Attachment to School Scale for Children and Adolescents:** This scale was developed by Hill (2006) to assess attachment to school in children and adolescents and was adapted for Turkish culture by Savi (2011). The original version has 15 items, while the Turkish version has 13. It measures attachment in three dimensions: school (4 items), teachers (4 items), and friends (5 items). The scale used in the study has a 5-point Likert-type rating. These ratings are ‘Strongly Disagree (1)’, ‘Disagree (2)’, ‘Neutral (3)’, ‘Agree (4)’ and ‘Strongly Agree (5)’. The scale was subjected to confirmatory factor analysis for its use in this study. Confirmatory factor analysis (CFA) supported the scale’s construct validity ( $\chi^2=157.988$ ,  $df=62$ ,  $p=.001$ ,  $CFI=0.958$ ,  $TLI=0.947$ ,  $SRMR=0.048$ ,  $RMSEA=0.061$ ) according to Kline’s (2023) criteria. Cronbach’s alpha ( $\alpha$ ) and McDonald’s omega ( $\omega$ ) indicated good internal consistency for all dimensions: attachment to school ( $\alpha=0.865$ ,  $\omega=0.867$ ), attachment to friend ( $\alpha=0.803$ ,  $\omega=0.807$ ), and attachment to teacher ( $\alpha=0.745$ ,  $\omega=0.760$ ).

**Physical Education and Sports Course Interest Scale (PEESIS):** Developed by Uğraş and Temel (2020), this scale measures middle school students’ interest in physical education (PE) courses. It consists of a single dimension with 10 items and uses a 5-point Likert scale ranging from “Strongly Agree (5)” to “Strongly Disagree (1)”. The scale was subjected to confirmatory factor analysis for its use in this study. In this study, confirmatory factor analysis (CFA) revealed that some initial values fell outside acceptable limits for construct validity. Therefore, modifications were made to items M2-M3 and M7-M8. Following these changes, the scale demonstrated good fit indices (Kline, 2023) ( $\chi^2=158.322$ ,  $df=33$ ,  $p=.001$ ,  $CFI=0.965$ ,  $TLI=0.952$ ,  $SRMR=0.029$ ,  $RMSEA=0.095$ ). Additionally, the reliability coefficients indicated strong internal consistency ( $\alpha=0.951$ ,  $\omega=0.952$ ).

**Satisfaction with Life Scale for Children (LSSC):** Originally developed by Gaderman et al. (2009), the LSSC measures children's life satisfaction. Altay and Ekşi (2018) adapted this 5-item, single-dimension scale for use in Turkish. The scale was subjected to confirmatory factor analysis for its use in this study. The scale uses a 5-point Likert format, with answer choices ranging from "Strongly Disagree (1)" to "Strongly Agree (5)". Confirmatory factor analysis (CFA) supported the scale's construct validity in this study ( $\chi^2=8.451$ ,  $df=5$ ,  $p=.133$ ,  $CFI=0.996$ ,  $TLI=0.992$ ,  $SRMR=0.018$ ,  $RMSEA=0.040$ ) according to Kline's (2023) criteria. Internal consistency was also good ( $\alpha=0.854$ ,  $\omega=0.856$ ).

### Statistical Analysis

The data were first transferred to the JASP 0.16.4 statistical program for analysis. Normality was assessed using skewness ( $\pm 3$ ) and kurtosis ( $\pm 10$ ) criteria (Kline, 2023). To test the construct validity of the scales, confirmatory factor analysis (CFA) was conducted. In the CFA process,  $\chi^2$ ,  $df$ ,  $p$ ,  $CFI$ ,  $TLI$ ,  $SRMR$ , and  $RMSEA$  values were examined to assess the model fit. Pearson correlation analysis was conducted to examine the relationships between life satisfaction, attachment to school, and interest in physical education class. In interpreting the correlation coefficients, values between 0.00-0.30 were considered to indicate a low level relationship, 0.30-0.70 a medium level relationship, and 0.70-1.00 a high level relationship (Büyüköztürk, 2011). In order to examine the mediating role of interest in physical education class between satisfaction with life and attachment to school, mediation analysis was performed from the JASP SEM mediation section. To evaluate the fit of the test-measurement model,  $\chi^2$ ,  $df$ ,  $p$ ,  $CFI$ ,  $TLI$ ,  $SRMR$  and  $RMSEA$  values were taken as reference (Kline, 2023; Tabachnick & Fidell, 2013). Additionally, Kline (2023) states that if more than one model is tested, the model with lower AIC and ECVI values should be preferred. As criteria for fit indices,  $\leq 5$  for  $\chi^2/sd$ ,  $\geq .90$  for  $CFI$  and  $TLI$ , and  $\leq .08$  for  $RMSEA$  and  $SRMR$  were used (Kline, 2023; Tabachnick & Fidell, 2013). In addition, Bootstrap analysis was used to test the significance of the direct and indirect effects between the variables in the model tested within the scope of the research (Preacher and Hayes, 2008). A bootstrap sample size of 5000 was chosen. The criterion of non-zero between the lower and upper values in the 95% confidence interval was considered in order to express the direct and indirect effects between the variables in the tested model as significant (Preacher & Hayes, 2008).

## Results

The mean, standard deviation, skewness and kurtosis values of satisfaction with life, attachment to school and interest in physical education class are given in Table 1.

**Table 1**

*Mean, Standard Deviation, Skewness and Kurtosis Values for Variables*

Variables	Mean	Std. Deviation	Skewness	Kurtosis
AS	4.404	0.640	-1.420	2.243
AF	4.125	0.866	-1.229	1.216
AT	4.301	0.752	-1.353	1.678
IPEC	3.971	1.048	-1.043	0.336
SL	3.712	1.005	-0.687	0.243

**Note:** AS= Attachment to School, AF= Attachment to Friends, AT= Attachment to Teacher, IPEC= Interest in physical education class, SL= Satisfaction with life

When the numerical data in Table 1 are examined, the mean score of attachment to school is  $X = 4.404$ , mean score of attachment to friends is  $X = 4.125$ , mean score of attachment to teacher is  $X = 4.301$ , mean score of interest in physical education class is  $X = 3.971$ , mean score of satisfaction with life is  $X = 3.712$ . When the kurtosis and skewness values in Table 1 are examined, Kline (2023) states that the skewness value between  $\pm 3$  and kurtosis value between  $\pm 10$  are appropriate values for normal distribution. In the current study, the skewness values of the variables vary between -0.687 and -1.420 and the kurtosis values vary between 0.243 and 2.243. When the results are taken into consideration, it can be said that the data in Table 1 meet the conditions suitable for normal distribution parameters. The findings of the correlation analysis conducted to reveal the relationships between the variables are given in Table 2.

**Table 2***Correlation Values of Variables*

Variables	SL	AS	AF	AT	IPEC
SL	—				
AS	0.424***	—			
AF	0.407***	0.603***	—		
AT	0.438***	0.892***	0.462***	—	
IPEC	0.467***	0.436***	0.329***	0.480***	—

Notes: \*\*\*  $p < .001$

Note: AS= Attachment to School, AF= Attachment to Friends, AT= Attachment to Teacher, IPEC= Interest in physical education class, SL= Satisfaction with life

When Table 2 is examined, it is determined that there is a positive and significant relationship between the satisfaction with life scores of the students participating in the study and their attachment to school ( $r = .424, p < .001$ ), attachment to friends ( $r = .407, p < .001$ ), attachment to teacher ( $r = .438, p < .001$ ) and interest ( $r = .467, p < .001$ ) scores. It was concluded that there was a positive and significant relationship between attachment to school scores and attachment to friends ( $r = .603, p < .001$ ), attachment to teacher ( $r = .892, p < .001$ ) and interest ( $r = .436, p < .001$ ) dimensions. A positive and significant relationship was found between attachment to friend scores and attachment to teacher ( $r = .462, p < .001$ ) and interest ( $r = .329, p < .001$ ) scores. There was a positive and significant relationship between attachment to teacher scores and interest ( $r = .480, p < .001$ ) scores.

**Fit Indices for the Test Measurement Model**

In order to examine the mediating role of physical education course in the relationship between satisfaction with life and attachment to school, the suitability of the data collection tools used for the measurement model was tested. Structural Equation Modeling was utilized. The fit index values of the model ( $\chi^2=810.724$ ,  $df=340$ ,  $p=.001$ ,  $CFI=0.935$ ,  $TLI=0.928$ ,  $SRMR=0.046$ ,  $RMSEA=0.057$ ,  $CI=.063-.073$ ,  $AIC= 30104.757$ ,  $ECVI= 2.697$ ) are at an acceptable level (Kline, 2023). The reliability coefficients of the model ( $\alpha=95\%$   $CI= .777, .836$ ,  $\omega =95\%$   $CI= .746, .811$ ) were determined. The factor loadings of the items in the model

ranged between .510 and 1.104. Path Diagram and Factor Loadings of the Test Measurement Model are given in Table 3.

**Table 3**  
*Measurement Model*

Factor	Indicator	Estimate	Std. Error	z-value	p	95% Confidence Interval	
						Lower	Upper
AS	AS1	0.885	0.042	21.180	< .001	0.803	0.967
	AS2	0.846	0.040	21.380	< .001	0.769	0.924
	AS3	0.852	0.044	19.549	< .001	0.767	0.937
	AS4	0.713	0.054	13.211	< .001	0.607	0.819
	AS5	0.457	0.060	7.659	< .001	0.340	0.575
AF	AF1	0.520	0.049	10.517	< .001	0.423	0.617
	AF2	0.431	0.048	8.963	< .001	0.337	0.526
	AF3	0.598	0.045	13.207	< .001	0.509	0.687
	AF4	0.420	0.050	8.355	< .001	0.322	0.519
AT	AT1	0.754	0.051	14.921	< .001	0.655	0.853
	AT2	0.622	0.063	9.927	< .001	0.499	0.745
	AT3	0.802	0.045	18.028	< .001	0.715	0.890
	AT4	0.898	0.056	16.058	< .001	0.788	1.008
SL	SL1	0.940	0.056	16.917	< .001	0.831	1.048
	SL2	1.073	0.053	20.255	< .001	0.969	1.176
	SL3	0.939	0.050	18.902	< .001	0.841	1.036
	SL4	0.756	0.059	12.883	< .001	0.641	0.871
	SL5	0.932	0.067	13.878	< .001	0.801	1.064
IPEC	IPEC1	0.989	0.052	19.030	< .001	0.887	1.090
	IPEC2	1.061	0.055	19.449	< .001	0.954	1.168
	IPEC3	1.078	0.055	19.675	< .001	0.971	1.185
	IPEC4	0.826	0.048	17.084	< .001	0.731	0.921
	IPEC5	0.953	0.051	18.558	< .001	0.853	1.054
	IPEC6	0.997	0.052	19.145	< .001	0.895	1.099
	IPEC7	1.068	0.049	21.853	< .001	0.972	1.163
	IPEC8	1.068	0.052	20.483	< .001	0.966	1.170
	IPEC9	1.065	0.051	20.862	< .001	0.965	1.165
	IPEC10	1.108	0.058	19.265	< .001	0.995	1.221

**Note:** AS= Attachment to School, AF= Attachment to Friends, AT= Attachment to Teacher, IPEC= Interest in physical education class

## The Mediating Role of Interest in Physical Education Class in the Relationship Between Satisfaction with life and Attachment to school

**Table 4**

*Analysis Results Related to Testing the Mediating Role of Interest in Physical Education Class between Satisfaction with Life and Attachment to school*

						95% Confidence Range		
Direct Effects		( $\beta$ )	S.E.	z-value	Sig.	Lower	Upper	
SL	→	AS	.280	.049	5.722	<.001	.184	.376
SL	→	AF	.323	.051	6.331	<.001	.223	.422
SL	→	AT	.272	.048	5.699	<.001	.178	.366
Indirect Effects								
SL	→IPEC→	AS	.142	.027	5.334	<.001	.099	.200
SL	→IPEC→	AF	.082	.025	3.286	<.001	.042	.137
SL	→IPEC→	AT	.164	.027	6.018	<.001	.118	.222
Total Effects								
SL	→	AS	.423	.044	9.300	<.001	.337	.510
SL	→	AF	.403	.044	8.853	<.001	.316	.490
SL	→	AT	.440	.044	9.683	<.001	.354	.525

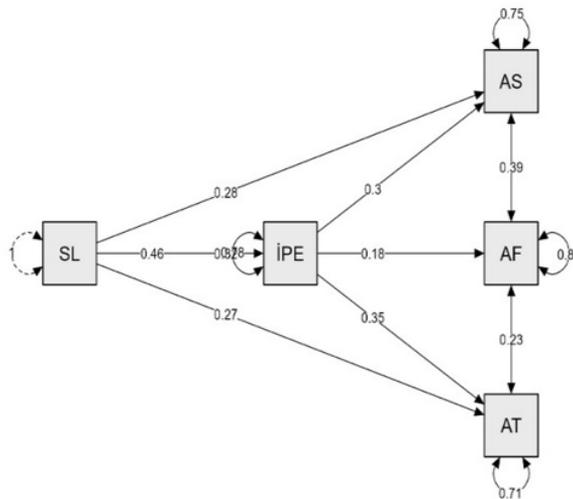
**Note:** AS= Attachment to School, AF= Attachment to Friends, AT= Attachment to Teacher, IPEC= Interest in physical education class, ( $\beta$ ): Coefficient, S.E.: Standard Error,

When Table 4 was analyzed, it was found that satisfaction with life positively and significantly predicted attachment to school ( $\beta = .28, p < .001, 95\% \text{ CI} = .184, .376$ ), attachment to friend ( $\beta = .32, p < .001, 95\% \text{ CI} = .223, .422$ ) and attachment to teacher ( $\beta = .27, p < .001, 95\% \text{ CI} = .178, .366$ ). When the indirect effects were analyzed, it was found that satisfaction with life positively and significantly predicted attachment to school ( $\beta = .14, p < .001, 95\% \text{ CI} = .099, .200$ ), attachment to friend ( $\beta = .082, p < .001, 95\% \text{ CI} = .042, .137$ ) and attachment to teacher ( $\beta = .170, p < .001, 95\% \text{ CI} = .118, .222$ ) through interest in physical education class. Satisfaction with life directly and indirectly predicted total attachment to school ( $\beta = .42, p < .001, 95\% \text{ CI} = .337, .510$ ), attachment to friend ( $\beta = .40, p < .001, 95\% \text{ CI} = .316, .490$ ) and attachment to teacher ( $\beta = .44, p < .001, 95\% \text{ CI} = .354, .525$ ) in a positive and significant way. R-squared values were used to assess the extent to which the independent variables of Attachment to school,

Attachment to friend, Attachment to teacher, and Interest predict the dependent variable of Satisfaction with life. According to the model, it was determined that the independent variable satisfaction with life and the mediating variable interest in physical education explained the dependent variables attachment to school by 25%, attachment to friend by 19% and attachment to teacher by 29%. The structural equation model and the standardized path coefficients between the variables are shown in Figure 1.

**Figure 1**

*Standardized path coefficients of the mediating model*



Note: SL: Satisfaction with Life, IPE: Interest Physical Education, AS: Attachment to school, AF: Attachment to Friends, AT: Attachment to teacher.

## Discussion

In this study, the mediating role of interest in physical education class in the relationship between satisfaction with life and attachment to school of secondary school students was examined by structural equation modeling.

In the study, firstly, it was examined whether satisfaction with life predicted attachment to school, attachment to friends and attachment to teachers, and it was found that it predicted them positively and significantly. It is seen that this finding of the study coincides with the results in the literature. In studies investigating the relationship between satisfaction with life and attachment to

school, it is seen that there is a positive relationship (Heffner & Antaramian, 2016; Lewis et al., 2011; Özdemir & Koruklu, 2013). Huebner & McCullough (2000) further emphasized the role of satisfaction with life in shaping school satisfaction and stated that positive and negative life experiences can affect students' overall satisfaction with school. These findings generally indicate that satisfaction with life plays an important role in shaping students' attachment to school. On the other hand, some studies show that students' attachment to school increases their satisfaction with life. For example, increasing students' interest in music and participation in sports activities at school positively affected their attachment to school and contributed to their satisfaction with life (Ko & Cho, 2023; Yun & Baek, 2023). Looking at the studies investigating the effect of satisfaction with life on students' attachment to friends, it is seen that there is a bidirectional relationship between satisfaction with life and attachment to friend (Çakar & Karataş, 2017; Kim & Paik, 2018; Temiz & Comert, 2018; Wright & Perrone, 2010). When students are generally satisfied with their lives, they may have a more open attitude towards building and maintaining positive social relationships. This positive outlook makes students more approachable and makes time spent together enjoyable, which can lead to deeper connections and stronger bonds in friendships. In addition, low levels of stress and anxiety can make students more emotionally available, which can create stronger bonds in friendships. Also, happy students are more likely to participate in social events and activities, which may create more opportunities to connect with friends and strengthen their relationships. Another finding of the study was that satisfaction with life positively and significantly predicted students' attachment to teachers. When the literature is examined, it is seen that the relationship between students' satisfaction with life and their attachment to teachers is complex and multifaceted, as in other attachment types. There are many studies investigating the effect of various factors on students' satisfaction with life and attachment to teacher. While it is seen that students with high satisfaction with life tend to have higher levels of attachment to their teachers (Guess & McCane-Bowling, 2016; Gul, 2022), there are also studies suggesting that teacher support contributes to increased satisfaction with life in students (Danielsen et al., 2009; Lee & Lee, 2023; Wahlström et al., 2021). In other words, an increase in satisfaction with life may bring the student closer to the teacher, and the support and positive interactions received from the teacher may also increase the student's satisfaction with life.

This study aimed to create a holistic model in which the concepts of satisfaction with life, attachment to school, attachment to friends, attachment to teacher, and interest in physical education class are considered together. It was concluded that the mediation model considered within the scope of the research was confirmed in middle school students. In the study, it was found that interest in physical education class played a mediating role in the relationship between satisfaction with life and attachment to school, attachment to friends and attachment to teacher. While satisfaction with life has a direct effect on attachment to school, attachment to friends and attachment to teacher, it has an indirect effect through interest in physical education class. In other words, students with high interest in physical education classes are more attached to their schools, friends and teachers. These findings suggest that physical education classes can make significant contributions to students' social and emotional development. Physical education classes enable students to express themselves, socialize and establish positive relationships. This, in turn, helps students become attached to school, friends and teachers. The findings of the research are also supported by studies in the literature (Cothran & Ennis, 1999; Çelik et al., 2023; Uğraş & Özen, 2020). First of all, when the studies on school engagement are examined, it is seen that interest in physical education classes increases students' commitment to their schools. Jusri & Dimyati (2023) found that high school students' interest in physical education classes had a significant effect on their school engagement. Similarly, Kang & Lee (2022) stated in their study that interest in physical education contributed positively to classroom engagement. When we look at the finding of attachment to friends, it shows that interest in physical education class has a positive effect on students' friendship relationships (Cothran & Ennis, 1999; El-Sherif, 2016; Gencay, 2017; Seymour et al., 2009). Interest in physical education class can be effective in strengthening the bonds between students. This interest creates a common ground and allows students to establish closer relationships with each other. At the same time, physical education classes help students improve their communication skills by increasing social interaction. Coming together during physical activities can lead to deepening bonds of friendship between students. These classes also help students gain confidence in themselves by teaching them physical skills. Increased self-confidence encourages support among friends and celebrating achievements together. As a result of the research in the literature, it can be said that physical

education classes create a positive atmosphere and allow students to spend time with each other comfortably, which strengthens friendships. Another finding of the study is that students with high interest in physical education classes are more loyal to their teachers. It is possible that students with a high interest in physical education establish stronger bonds with their physical education teachers thanks to factors such as common interest, positive interactions, exemplary influence and open communication. While some studies in the literature indicate that students' interest in physical education classes may be low due to reasons such as past experiences, curriculum, sociodemographic factors, etc. (Aniszewski & Cely, 2021; Osokina et al., 2020), studies in general indicate that students' interest and love for physical education classes are high (Başar & Coşkun, 2017; Henjilito et al., 2023; Lal, 2016; Madejski et al., 2019).

### **Conclusion and Recommendations**

The main purpose of this study was to examine the mediating role of interest in physical education class in the relationship between life satisfaction and school attachment in middle school students. As a result of the analyses, it was found that interest in physical education class played a mediating role in this relationship. In addition, it was found that life satisfaction positively influenced attachment to school, teachers and friends both directly and indirectly through interest in physical education class. These findings reveal the importance of physical education classes for students' social and emotional development.

This study shows that physical education classes are not only limited to physical health but also have significant effects on psychosocial development. These results provide important findings that should attract the attention of educators and researchers. However, the cross-sectional nature of the study poses some limitations regarding the generalizability of the results. Longitudinal studies in different age groups and schools are important to test the robustness of the findings.

As a suggestion, regulations can be made in education programs to increase students' interest in physical education classes. In addition, it may be useful to make physical education course content more fun and interesting in order to support the social and emotional development of students, especially at the secondary school level. Educational administrators and teachers can increase students' interest in the course and their commitment to school by strengthening

the fun-based content of the lessons. Finally, it is suggested that future research should aim at long-term monitoring of the effects of physical education lessons on students' psychological well-being.

## Geniřletilmiř zet

### Giriř

Eđitim sistemi ierisinde yer alan okullar, byk ve nemli bir yere sahiptir. Ortalama altı yařında ana sınıfıyla birlikte bařlayan okul serveni, kiřilerin kariyer planlamalarına gre otuzlu yařlara kadar uzanabilmektedir. Bireylerin bu sre ierisinde okullarda almıř oldukları eđitim, geleceklerini řekillendirme aısından olduka nemlidir (Kara, 2020). Okullarda belirlenmiř eđitsel hedefleri gerekleřtirmek, sađlıklı đrenciler yetiřtirmek, sađlıklı bir toplum yapısı oluřturmak bařlıca grevler arasında bulunmaktadır. Belirlenmiř hedef ve grevleri yerine getirme srecinde en etkili faktrlerden birisi đrencilerin okula aidiyet dzeyleridir (Kalaycı ve zdemir, 2013). Okula aidiyet, đrencilerin belirlenmiř olan eđitsel hedefleri yerine getirirken bařarılı olma ve kendilerini okulun bir parası olarak hissetmesidir (Erdođdu, 2013). Bařka bir tanımlamaya gre okula aidiyet, đrencilerin kendilerini okulda gvende hissederek, đrenme srecine aktif olarak katılımını kapsayan sre olarak ifade edilmektedir (Covell, 2010). đrencilerin okul aidiyet dzeylerini olumlu ya da olumsuz olarak etkileyen birok faktr mevcuttur. Okulun iklimi (Rizzotto ve Frana, 2022), fiziki yapısı (Altuntař ve Sezer, 2017), đrencinin z yeterliliđi (Canbulat vd., 2017), đretmen iliřkileri (Kořir vd., 2023), akran iliřkileri (Argon ve Yılmaz, 2016) ve ders dıřı sportif etkinliklere ynelik tutum (Ateř ve Uđrař, 2023) faktrleri okula aidiyet ile iliřkilidir. đrencinin okula olan aidiyet dzeyleri azaldıka sadece devamsızlık sorunları (Wang ve Fredricks, 2014) deđil okuldan kama ve akademik bařarı (Niehaus vd., 2012) sorunları da ortaya ıkmaktadır. Okul aidiyetine katkı sađlayan derslerden biri de beden eđitimi ve spor dersidir.

Beden eđitimi dersi sayesinde, sađlıkla ilgili olumlu davranıřların ortaya ıkmasının yanında (Martins vd., 2022) aktif yařam tarzı benimsenerek fiziksel aktiviteyi srdrmeye yardımcı olmaktadır (Uddin vd., 2020). Dzenli olarak fiziksel aktiviteyi srdrmek, sađlık aısından pek ok olumlu etki sunmaktadır. Bařta obezitenin nlenmesi olmak zere kalp-solunum ve kas sađlıđının korunması, yaralanma risklerinin azaltılması, ruh sađlıđının korunması, stres,

depresyon ve anksiyetenin önüne geçilmesi faydaları bulunmaktadır (Humphreys vd., 2014; Luan vd., 2019; Warburt vd., 2006). Ancak beden eğitimi dersleri sadece sağlık becerilerinin gelişimiyle sınırlı kalmayıp aynı zamanda sosyal becerilerin gelişimlerine de katkı sağlamaktadır. Santos ve arkadaşlarının (2020) araştırması, beden eğitimi derslerine katılan öğrencilerin arkadaş sayılarının arttığı ve bu durumun sosyalleşmelerine olumlu katkı sağladığını göstermektedir. Bu durumun ötesinde, öğrencilerin hafızası, konsantrasyonu, sınıf davranışı ve akademik performansının üzerinde (Trudeau ve Shephard, 2008) olumlu etkileri kanıtlanmıştır. Oya ve Ishihara (2022) beden eğitimi derslerinin eğlenceli ve keyifli olarak geçmesi, derse ve sportif faaliyetlere ömür boyu ilgi duyulmasını sağlayabileceğini ifade etmiştir. Beden eğitimi dersinin farklı öğrenme ortamı ve görevleri içerisinde geçirilmesi, dersin öğrenciler açısından daha eğlenceli ve keyifli hale gelmesine neden olmaktadır. Bu durum, beden eğitimi dersine olan ilgiyi arttırırken, yaşam doyumu ve okula bağlanmayı da olumlu yönde etkileyeceği düşünülmektedir. Bu çalışmada yaşam doyumu ile okula bağlanma arasında beden eğitimi dersine ilginin aracı rolünün incelenmesi amaçlanmaktadır. Yaşam doyumu ve okula bağlanma ilişkisinde beden eğitimi dersine ilginin aracı rolünün olup olmadığı incelenmiştir.

## Yöntem

Ortaokul öğrencilerinin yaşam doyumu ile okula bağlanma durumu arasında beden eğitimi dersine ilginin aracı rolünün incelendiği bu çalışmada nicel araştırma yöntemlerinden ilişkisel araştırma modeli kullanılmıştır. Araştırmaya Çanakkale Millî Eğitim Müdürlüğüne bağlı il merkezindeki ortaokullarda öğrenim gören 201 (%48) kız, 220 (%52) erkek öğrenci olmak üzere toplamda 395 kişi katılmıştır. Veri toplama aracı olarak Çocuk ve Ergenler için Okula Bağlanma Ölçeği, Beden Eğitimi ve Spor Dersine İlgi Ölçeği, Çocuklar İçin Yaşam Doyumu Ölçeği kullanılmıştır. Veriler öncelikle JASP 0.16.4 istatistik programına aktarılmıştır. Verilerin normallik analizi için çarpıklık değerinin -3 ile basıklık değerinin +3 arasında olması referans alınmıştır (Kline, 2023). Ölçeklerin yapı geçerliliğinin sınanması için doğrulayıcı faktör analizi işlemine  $\chi^2$ , df, p, CFI, TLI, SRMR, RMSEA değerlerine bakılmıştır. yaşam doyumu, okula bağlanma ve beden eğitimi dersine ilginin incelenmesi için pearson korelasyon analizi yapılmıştır. Korelasyon katsayısının mutlak değer olarak, 0,00-0,30 arasında olması, düşük; 0,30-0,70 arasında olması, orta; 0,70-1,00 arasında olması ise, yüksek düzeyde bir ilişki olarak tanımlanabilir (Büyüköztürk, 2011).

Araştırmada beden eğitimi dersine ilginin yaşam doyumu ve okula bağlanma arasındaki aracı rolün incelenebilmesi için JASP SEM mediation bölümünden aracı analiz işlemi gerçekleştirilmiştir.

## **Bulgular**

Yaşam doyumu ve okula bağlanma ilişkisinde beden eğitimi dersinin aracı rolünü incelemek için kullanılan veri toplama araçlarının ölçüm modeline uygunluğu test edilmiştir. Yapısal Eşitlik Modeli'nden yararlanılmıştır. Ortaya çıkan modelin uyum indeks değerlerinin ( $\chi^2=810.724$ ,  $df=340$ ,  $p=.001$ ,  $CFI=0.935$ ,  $TLI=0.928$ ,  $SRMR=0.046$ ,  $RMSEA=0.057$ ,  $CI=.063-.073$ ,  $AIC=30104.757$ ,  $ECVI=2.697$ ) kabul edilebilir düzeyde (Kline, 2023) olduğu görülmektedir. Modelin güvenilirlik katsayılarının ( $\alpha=95\%$   $CI=.777, .836$ ,  $\omega=95\%$   $CI=.746, .811$ ) olduğu tespit edilmiştir. Modeldeki maddelerin faktör yükleri .510 ile 1.104 arasında değişmektedir.

Yapısal Eşitlik Modeli sonuçları incelendiğinde yaşam doyumunun okula bağlanmayı ( $\beta=.27$ ,  $p<.001$ ,  $95\%$   $CI=.182, .366$ ), arkadaşına bağlanmayı ( $\beta=.31$ ,  $p<.001$ ,  $95\%$   $CI=.217, .411$ ) ve öğretmene bağlanmayı ( $\beta=.27$ ,  $p<.001$ ,  $95\%$   $CI=.180, .360$ ) pozitif ve anlamlı bir şekilde yordadığı tespit edilmiştir. Dolaylı etkiler incelendiğinde yaşam doyumunun beden eğitimi dersine ilgi aracılığıyla okula bağlanmayı ( $\beta=.15$ ,  $p<.001$ ,  $95\%$   $CI=.099, .200$ ), arkadaşına bağlanmayı ( $\beta=.089$ ,  $p<.001$ ,  $95\%$   $CI=.042, .137$ ) ve öğretmene bağlanmayı ( $\beta=.170$ ,  $p<.001$ ,  $95\%$   $CI=.118, .222$ ) pozitif ve anlamlı bir şekilde yordadığı tespit edilmiştir. Yaşam doyumunun doğrudan ve dolaylı olarak toplam okula bağlanmayı ( $\beta=.42$ ,  $p<.001$ ,  $95\%$   $CI=.337, .510$ ), arkadaşına bağlanmayı ( $\beta=.40$ ,  $p<.001$ ,  $95\%$   $CI=.316, .490$ ) ve öğretmene bağlanmayı ( $\beta=.44$ ,  $p<.001$ ,  $95\%$   $CI=.354, .525$ ) pozitif ve anlamlı bir şekilde yordadığı görülmüştür.

## **Tartışma, Sonuç ve Öneriler**

Bu araştırmanın amacı, ortaokul öğrencilerinin okula bağlanma arkadaşına bağlanma ve öğretmene bağlanma üzerine kurulan bir modelin test edilmesidir. Test edilmeye çalışılmış olan modelin doğrulandığı sonucuna varılmıştır. Beden eğitimi dersine ilginin yaşam doyumu ile okula bağlanma, arkadaşına bağlanma ve öğretmene bağlanma arasındaki ilişkide aracı role sahip olduğu doğrulanmıştır. Oluşturulan modelin sonucunda yaşam doyumunun okula bağlanma, arkadaşına bağlanma ve öğretmene bağlanma üzerinde doğrudan bir etkisi olduğu

bulunmuştur. Bu sonuca ek olarak, beden eğitimi dersine ilgi yoluyla dolaylı olarak okula, arkadaşına ve öğretmene bağlanma üzerinde etkisinin olduğu belirlenmiştir.

Araştırmanın bulguları, alanyazına önemli katkılar sağlayabilecek niteliktedir. Ancak, bazı sınırlıklara da sahiptir. Araştırma kesitsel bir tasarıma sahiptir ve belirli bir zamanda ve belirli bir yerde öğrenim gören 395 ortaokul öğrencisinden alınan verilerle yapılmıştır. Bu nedenle, sonuçların farklı eğitim kademelerinde veya farklı okullarda öğrenim gören öğrencilere genelleştirilmesi için daha fazla araştırma yapılması gerekebilir. Bu araştırmanın bulguları doğrultusunda, öğrencilerin okula, öğretmene ve arkadaşlarına olan bağlanmalarının artırılmasında beden eğitimi ve spor dersine ilgi etkili olduğu görülmektedir. Bu nedenle özellikle küçük yaş gruplarında (ilkokul-ortaokul) haz ve eğlence odaklı içeriklerin oluşturulması öğrencilerin derse olan ilgilerini artırılması adına önemlidir.

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**Conflict of Interest:** There is no conflict of interest between the authors.

**Ethics Statement:** We declare that the rules specified in the “Directive on Scientific Research and Publication Ethics of Higher Education Institutions” have been followed in this study and that we have not taken any action based on “Actions Contrary to Scientific Research and Publication Ethics”. We also declare that all authors contributed to the study, that there is no conflict of interest between the authors, and that all responsibility for all ethical violations belongs to the authors of the article.

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