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Autonomy Support and Motivation in Physical Education: A Comparison of Teacher and Student Perspectives

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Abstract

The aim of this study was to identify predictors of teachers' and students' motivation and autonomy support in physical education. Ninety-four physical education teachers (26 female, 68 male) and 2127 students (1093 boys, 1026 girls, and 8 no gender specified) from 56 (42 public, 14 private) high schools all voluntarily participated in the study. The students' perceived autonomy support, the intrinsic motivation for physical education, and the teachers' perceptions of their own autonomy support in lessons and their motivations to teach were assessed. Pearson correlation analysis showed no relationship between teachers' perceptions of autonomy support and the students' perceptions of autonomy support. Regression analysis showed that a) the students' perceptions of autonomy support were positive predictors of the students' intrinsic motivations, and b) the assessment support sub-dimension of autonomy support was a positive predictor of teachers' intrinsic motivations to teach physical education. Given these findings, it becomes critical that PE teachers learn about the value of autonomy support and how to provide it during pre-service and in-service teacher education.

Keywords: autonomy support, motivation, physical education, teacher and student perceptions

Introduction

The Self-Determination Theory (Deci and Ryan, 1985) presumes that everyone has an innate, natural tendency to enhance their sense of self, and that social environments can either support or interfere with these tendencies (Ryan and Deci, 2000). The definition of self-determination according to Deci and Ryan (2002) is when a person engages in an activity based on his or her own sense of choice rather than being directed to do so by external pressures, repression, or reward. The theory proposes that social contexts may either support or disrupt the growth and integration tendencies of the human soul and that all people have a natural, intrinsic, and constructive tendency to enhance their sense of self (Ryan and Deci, 2000).

The theory categorizes motivation into three forms: intrinsic motivation, extrinsic motivation, and amotivation (Deci and Ryan, 1985). The term intrinsic motivation refers to an individual's enjoyment of his or her actions, their desirability, and their pleasure in choosing to engage in such acts willingly (Ryan and Deci, 2000). Extrinsic motivation refers to outside factors that influence our behavior through rewards or incentives while simultaneously decreasing our biological demands (Plotnik, 2007). Last but not least, apathy is a person's refusal to perform a necessary task because they believe it to be worthless (Ryan and Deci, 2000).

Tessier, Sarrazin, and Ntoumains (2010) argued that the students for whom teachers provide autonomy support are more intrinsically motivated and have more positive emotions than the students for whom teachers are controlling. Teachers who enable students to recognize and develop their own personal goals and interests and allow them to choose provide high autonomy support to their students (Assor, Kaplan, and Roth, 2002). Moreover, such teachers also create classroom opportunities for students, making it easier for students to adapt to the learning environments, therefore, they help students participate in activities and become intrinsically motivated to learn (Reeve, Jang, Carrell, Jeon, and Barch, 2004). Studies have shown a link between the autonomy support that physical education (PE) teachers provide and their students' intrinsic motivation to participate in PE (Fin et al., 2019; Escriva-Boulley, Ntoumanis, and Tessier, 2018). The students' demand for autonomy is jeopardized, however, when teachers become controlling (Reeve et al., 2004). Controlling teachers tend to pressure students and use threats, rewards, and punishment to get them to perform (Reeve, 2002).

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According to teachers, students' intrinsic motivation increased in situations where they felt their teachers supported their autonomy (Kılınç, Bozkurt, and İlhan, 2018). Another study found that students' perceived support for autonomy rose with engagement in PE, which in turn enhanced their academic motivation. In other words, active involvement in PE acted as a mediator between the support of autonomy and academic motivation (Lozano-Jiménez et al., 2021). Additionally, students' intrinsic motivation, involvement in activities, academic success, and cognitive and skill development are all higher when PE teachers exhibit autonomy-supportive behaviors (Muftuler, 2016).

According to Oğuz (2013), there is a gap between teachers' awareness of the need for autonomy support and the actual autonomy support they give to their students. In a similar vein, Sert et al. (2012) found that students' perceptions of autonomy support in foreign language classrooms varied from teachers' perceived autonomy support. The students said that, in contrast to their teachers, they had not been given any encouragement to choose the contents of their portfolios and had not been permitted to do self-assessment. Smith et al. (2016) compared how the coaching environment supported autonomy as perceived by the coaches, as perceived by the athletes, and as observed by the independent observers. There was no relation between the reports of the observers and the perceptions of the athletes, coaches, or observers. The perceptions of the coaches and athletes' autonomy and support did, however, appear to be moderately positively correlated.

Teacher motivation was defined as the effort of teaching (Han and Yin, 2016). Teacher motivation positively affects teacher well-being, distress, and teacher autonomy support (Vansteenkiste et al., 2020; Slemp et al., 2020). It has been observed that teachers who use autonomy-supporting strategies have an increase in their motivation to teach (Nie et al., 2015; Aelterman et al., 2016).

Sinclair (2008) suggests that the teachers' motivation to teach and the students' motivation to learn develop together, parallel to each other. Furthermore, research has shown that teacher motivation has a direct impact on student motivation (Adamou, 2018; Engin, 2020; Cheon, Reeve, and Vansteenkiste, 2020). More specifically, the teacher's intrinsic motivation is one of the most important factors that can affect student motivation for the music lesson (Maulana et al., 2016), math lesson (Flunger et al., 2022), and foreign language lesson (Muñoz-Restrepo et al., 2020). Additionally, highly motivated teachers have a beneficial impact on their students' performances (Öqvist and Malmström, 2016) and active engagement in class (Kızıltepe, 2008). On the other hand, by utilizing various teaching methods (Gil-Arias et al., 2020) and interactive technology (Nagovitsyn et al., 2020) in PE, teachers might indirectly influence student motivation.

Although research assessing teacher and student motivations independently has been published in the literature, no studies comparing teacher and student motivation in PE have been identified. Furthermore, despite the fact that several studies have assessed students' and teachers' perceptions of autonomy support (Shen et al., 2009; Baard, Deci, and Ryan, 2002; Muftuler and İnce, 2015), and several studies have examined teachers' perceptions of autonomy support (Haerens et al., 2018; Baard, Deci, and Ryan, 2004; Lim and Wang, 2009), no studies have yet compared the two perspectives on autonomy support in PE. Consequently, the purpose of this study was to determine if PE teachers' motivation and perceptions of autonomy support were predictors of students' motivation and perceptions of autonomy support.

Method

Research Design

This research adopted a quantitative, correlational and cross-sectional design.

Sample and Data Collection

The sample of teachers and students was recruited after receiving approval from the Ethics Committee of a university and the Ministry of National Education. Ninety-four PE teachers (M_{Age}= 39,92; $M_{Teaching\ Experience}$=11-15 years) from 56 schools (42 public and 14 private) in a western city in Turkey were included in the study with a random sampling method. A sample of PE teachers' 9^{th}, 10^{th}, 11^{th} and 12^{th} grade classes were the students' universe. An appropriate sampling method was used to determine the students' sample, and 2127 high school students (1093 girls, 1026 boys, 8 no gender specified; M_{Age}= 15,46) were included in the study.

Table 1. Distribution of the Sample by Grade Level

Grade	9^{th} grade	10^{th} grade	11^{th} grade	12^{th} grade	Total
Total	951	592	436	148	2127

Two separate questionnaire packs were prepared, one each for the teachers and students, with questions aimed at collecting demographic data. The teacher questionnaire pack included the Learner Autonomy Support Scale and

Motivation to Teach Scale. The student questionnaire pack included the Situational Motivation Scale and the Perceived Autonomy Support Scale.

Learner Autonomy Support Scale

The Learner Autonomy Support Scale was used to assess the autonomy support that teachers think they provide to their students in PE. It was developed by Oğuz (2013) and comprises 16 items that are scored on a five-point Likert scale with responses "always, often, occasionally, seldom, never". The scale has three sub-scales, which are emotion and thought support, learning process support, and assessment support. Oğuz (2013) demonstrated that the results of the confirmatory factor analysis conducted for this scale showed that the scale provided good fit indexes (X^2 /sd = 2.93, GFI =.90, AGFI =.86, RMSEA =.077, SRMR =.052, CFI =.97), and internal consistency ($\alpha = 0.92$) was found to be sufficient (Nunnally, 1978). A sample item for the emotion and thought support subscale was "encouraging students to ask questions in the lessons." A sample item for the learning process support subscale was "helping students set learning goals". A sample item for the assessment support subscale was "to allow students to evaluate their own work."

Motivation to Teach Scale

The Motivation to Teach Scale was used to determine PE teachers' motivation to teach levels. This scale was developed by Hinkin (1995) and validated in Turkish by Kauffman, Yılmaz, and Duke (2011). The scale is scored on a 5-point Likert scale, with responses anchored by "strongly agree" and "strongly disagree. The scale has two sub-scales of intrinsic and extrinsic motivation and a total of 12 items. Yılmaz et al. (2011) demonstrated that the results of the confirmatory factor analysis conducted for this scale showed that the scale provided good fit indexes (X^2 = 136.086, *sd* = 44, RMSEA =.08, NFI =.92, CFI =.94, GFI =.94, AGFI =.89). A sample item for the intrinsic motivation subscale was that "*I can't imagine a more enjoyable professional life than teaching."* A sample item for the extrinsic motivation subscale was that "*I chose teaching because I would be respected in society."*

Situational Motivation Scale

The Situational Motivation Scale was used to determine students' motivation levels for PE. It was developed by Guay, Vallerand, and Blanchard (2000) and adapted to Turkish by Daşdan Ada, Aşçı, Kazak Çetinalp, and Altıparmak (2012). The scale comprises 16 items and four sub-scales: intrinsic motivation, identification regulation, external regulation, and amotivation. The scale items are scored on a 7-point Likert scale, from 1 ("strongly disagree") to 7 ("strongly agree"). Daştan Ada et al. (2012) demonstrated that the results of the confirmatory factor analysis conducted for this scale showed that the scale provided good fit indexes (RMSEA =.06, GFI =.92, AGFI =.89, NFI =.94; NNFI =.96, CFI =.97). A sample item for the intrinsic motivation subscale was that "*I attend the class because I think this class is interesting."* A sample item for the identification regulation subscale was that "*I attend the class for my own good."* A sample item for the external regulation subscale was that "*I attend the class because I have to do it."* A sample item for the motivation subscale was that "*I attend the class, but I'm not sure it's a good thing to continue with this lesson.*"

Perceived Autonomy Support Scale for Exercise Settings

The Perceived Autonomy Support Scale for Exercise Settings was used in the PE lesson to determine the students' perceptions of the autonomy support provided by the teacher in PE. It was developed by Hagger, Chatzisarantis, Hein, Pihu, Soos, and Karsai (2007), and the validity and reliability of the Turkish version were tested by Muftuler (2016). The scale comprises 12 items and is scored on a 7-point Likert scale, with responses ranging from "completely agree" to "completely disagree". The Cronbach's alpha value of the questionnaire was found to be .96. Muftuler (2016) revealed that the confirmatory factor analysis provided the good fit indices (χ^2/sd = 2.33, p≤ .05, RMSEA =.076, CFI =.978; NFI =.963, SRMR =.035; GFI =.932). A sample item for this scale was that '*I feel that my PE teacher provides me with choices, options, and opportunities about whether to do active sports and/or vigorous exercise in my free time.'*

Prior to the start of the study, consent forms were given to the students and their parents and collected after approval from the university's ethical committee and the ministry of national education. While keeping the teachers out of the data collection setting, the questionnaire packets were given to students during regular PE classes. Over the course of four months, the questionnaire packets were collected. During a school day, data was collected from PE teachers during their break. Applying both packs to both students and teachers took around 30 minutes. It was made clear that participation was voluntary, that participants could withdraw from the study at any time, that the data would only be used for research purposes, and that the researchers would never share their responses with anyone else.

Analyzing Data

The univariate and multivariate outliers were first detected in the data sets obtained from both the teachers (n = 94) and students (n = 2127). The two teachers with univariate outlier data and the two teachers with multivariate

outlier data were excluded from the study. Accordingly, there are 90 teachers' data left in the data set. For each variable, the assumption of normality was tested based on skewness and kurtosis values, and a normal distribution of data was observed. Then, Cronbach alpha values for each scale or subscale were calculated for internal consistency (Table 2).

The students of the teachers who comprised the study's teacher sample group received their responses to questionnaires. A single mean score for that class was calculated for each variable using the data collected from these student questionnaires. As a result, a single mean score was calculated for each variable in the class that each PE teacher taught. The relationships between the research variables were then determined using Pearson correlation analysis. In order to find predictors of both students' perceptions of autonomy support and motivational regulation and PE teachers' motivational regulation and perceptions of autonomy support, a series of regression analyses were used.

Results and Discussion

The descriptive statistics and Cronbach's alpha values of all the subscales used in the study are presented in Table 2.

Table 2. Descriptive Statistics of Study Variables

Variables		**M**	**Likert**	***SD***	**Skewness**	**Kurtosis**	***α***
Teacher	Intrinsic Motivation	3.52	5	.73	-.539	.495	.69
	Extrinsic Motivation	2.85	5	.85	.246	-.300	.72
	Autonomy – Emotion & Thought	4.36	5	.45	-.572	-.099	.81
	Autonomy - Learning Process	3.86	5	.68	-.116	-.654	.78
	Autonomy – Assessment Support	4.01	5	.66	-.299	-.633	.77
Student	Intrinsic Motivation	5.29	7	.47	-.282	-.504	.82
	Identified Regulation	5.08	7	.54	.002	-.167	.80
	Extrinsic Motivation	3.71	7	.55	-.183	-.677	.74
	Amotivation	2.81	7	.56	.010	-.258	.79
	Perceived Autonomy Support	5.22	7	.64	.131	.500	.93

N=90

The skewness and kurtosis values of all subscales normally distributed. Cronbach's alpha values showed internal consistency of each subscale.

Table 3. Pearson Correlation Analysis among Variables

	1	2	3	4	5	6	7	8	9
1.Teacher Intrinsic Motivation	1								
2.Teacher Extrinsic Motivation	.626**	1							
3.Teacher Autonomy – Emotion & Thought	.207*	.040	1						
4. Teacher Autonomy – Learning Process	.248*	.121	.724**	1					
5. Teacher Autonomy-Assessment Support	.253*	.153	.648**	.706**	1				
6. Student Intrinsic Motivation	-.006	0.19	.032	.050	.087	1			
7. Student Identified regulation	-.005	-.023	.001	.051	.133	.838**	1		
8. Student Extrinsic Motivation	.101	.169	-.088	-.143	-.104	-.433**	-.415**	1	
9. Student Amotivation	.006	.174	-.101	-.205	-.130	-.434**	-.386**	.720**	1
10. Student Perceived Autonomy Support	.97	.036	.150	.142	.128	.494**	.458**	-.247*	-480**

*p<.05, **p<.01

The sub-dimensions of the autonomy support provided by teachers to their students were not significantly correlated with the autonomy support experienced by the students, according to the findings of the Pearson correlation analysis. Students' motivation to learn and teachers' motivation to teach did not significantly correlate with one another. Table 4 shows the predictors of high school students' and PE teachers' intrinsic motivation as determined by regression analysis.

Table 4. Predictors of Students' Intrinsic Motivation and Teachers' Intrinsic Motivation

	β	***t***	***p***	**Durbin-Watson**
Student Perceived Autonomy Support $R=0.848$, $\Delta R^2=.71$, $F_{(2.87)} = 111.018$, $p = .00$	.140	2.184	.03*	1.957
Teacher Autonomy - Assessment Support $R=.253$, $\Delta R^2=.05$, $F_{(1.88)} = 6.019$, $p = .01$	.253	2.453	.01**	2.293

*p<.05 ** p<.01

According to regression analysis, teachers' perceptions of supporting students' autonomy were a significant positive predictor of their intrinsic motivation to teach, whereas students' perceptions of autonomy support were a significant positive predictor of students' intrinsic motivation.

Conclusion

In the present study, the teachers' and their students' perceptions of autonomy support in PE were compared. The students claimed that they did not feel that this climate supported their autonomy, despite the fact that the teachers believed it did. 36 of the 56 schools where data was gathered lack a gym, so PE classes were held on the playground. In Turkey, teachers frequently let their students pick an activity and freely participate in it in the schoolyard, particularly during the second half of the lesson (Taşmektepligil et al., 2006). Teachers may have tended to display more controlling behaviors in the first half of the lesson to maintain the discipline of the lesson because they may have believed that by allowing students to pick the activity they would do, they were supporting their autonomy. This might also be explained by the fact that PE teachers often act in a controlling way in order to keep authority over the class and the lesson in a setting as big and open as the schoolyard, where a lesson could easily devolve into chaos. Conversely, teachers who promote students' autonomy help them learn by ensuring that their in-class activities and outside motivational resources are complementary (Diseth et al., 2018; Haerens et al., 2015). Similar to our finding, Sert et al. (2012) found that students believed they were not encouraged to choose the content of their language portfolios and that teachers did not allow their students to conduct self-assessment. This finding contrasts with the views of the teachers related to the autonomy support they provide for their students.

It was found that there was no significant relationship between the sub-dimensions of autonomy support provided by the teachers to their students and the autonomy support experienced by the students. This finding may also have an assessment tool-related explanation. A one-dimensional tool (the Perceived Autonomy Support Scale for Exercise Settings) was used to assess students' perceptions of autonomy support. Three sub-scales of a more comprehensive tool (the Learner Autonomy Support Scale) were used to assess teachers' perceptions of autonomy support. The lack of a significant relationship between teachers' and students' perceptions of autonomy support in the same PE context may be caused by the assessment tools' lack of sensitivity when assessing autonomy support.

It was found that students' perceived autonomy support was a highly significant positive predictor of their intrinsic motivation. In other words, students are more intrinsically motivated to participate in PE when their perceived autonomy support level is higher. Additionally, a relationship was found between students' intrinsic motivation and perceived autonomy support. According to Ushioda (2006), students who take full responsibility for their own actions find intrinsic motivation in autonomy-supportive learning environments, which helps them better manage the learning environment. To put it another way, students who are given the opportunity to manage their own learning may benefit more from the lesson by being given this responsibility. Additionally, students who get autonomy support in PE succeed in employing appropriate learning techniques and connecting their learning across contexts (Deci et al., 1991; Deci and Ryan, 2002). Further, students may enjoy class more and eventually experience an increase in intrinsic motivation if they are given meaningful options in PE and can independently vary their learning environment (Knowles et al., 2018; Yetim et al., 2014).

Our research revealed that providing assessment support, a component of the autonomy support teachers give, was a highly significant positive predictor of teachers' intrinsic motivation to teach. The assessment support sub-dimension focuses on how students perceive their ability to contribute to lesson-level assessment choices and evaluate their own work (Oğuz, 2013). The lesson is made more autonomy-supportive for the students by using

various methods to provide autonomy support during the assessment and evaluation process, including preparing student-centered assessment tools, using peer and self-assessment, and maintaining student portfolios as part of the assessment and evaluation process (Ergür, 2010; Stefenou et al., 2004). Since they add variety to their own teaching environments, teachers who provide students with more meaningful options by using alternative assessment tools and methods like these lessons more (Akdemir, 2020) may enhance their intrinsic motivation. Numerous studies have revealed that teaching new methods and techniques connected to autonomy support raises teachers' intrinsic motivation (Su & Reeve, 2011; Deci & Ryan, 2000; Su & Reeve, 2011; Deci & Ryan, 2000). This study adds evidence to the body of literature suggesting that teachers' intrinsic motivation to encourage student autonomy in the lesson is increasing.

Recommendations

Various school climates (Benson, 2010; Blömeke & Klein, 2013), varied cultures (Sheldon et al., 2001), and different geographic locations all have an impact on how autonomous students feel supported (Cross & Markus, 1999). The results of this study are therefore restricted to a public high school PE setting in Turkey. Due to the simultaneous assessment of exposure and outcome in this cross-sectional study, there is often no evidence of a temporal relationship between the two, which is the main limitation of this type of research (Carlson and Morrison, 2009). Therefore, more effective experimental designs that address these problems are required. Another limitation is the technique of assessment; future research might be designed to assess teachers' and students' perceptions of autonomy support through systematic observation tools rather than a self-report approach in order to get more objective results.

During PE teacher education programs, it is essential to raise pre-service PE teachers' awareness of the need to promote students' autonomy as well as their understanding of how to do so. Additionally, it is suggested that the Ministry of Education work with universities that provide PE teacher education programs to establish in-service education programs that include the best autonomy-supportive practices.

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Author (s) Contribution Rate

Arık: Conceptualization, design, analysis, writing, rate; %50. Erturan: Editing/reviewing, supervision, Rate; %50.

Conflicts of Interest

We have no conflicts of interest to disclose.

Ethical Approval

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