

Investigation of the Relationship between Academic and Sport Motivation Orientations

Mutlu Turkmen

Bartın University,
Physical Education and Sports College, Turkey

Abstract: The purpose of this study was to investigate the relationship between academic and sport motivation orientations of the Physical Education and Sport (PES) college students and also to explore gender effects in this relationship. The sample group of the study was composed of 154 students (68 female, 86 male) attending to Bartın University Physical Education and Sport College. All the students were applied both Academic Motivation Scale (AMS) and Sport Motivation Scale (SMS) in order to find out academic and athletic motivational orientations. The data derived from these two scales were evaluated in Statistical Package for the Social Science (SPSS) 19.0 software through descriptive statistics (\bar{x} , SD), independent samples t-test ($p < 0.05$) and Pearson Product Moment Correlation ($p < 0.01$). Cronbach's alpha was calculated as 0.82 and 0.76 respectively for AMS and SMS. Therefore Cronbach's alpha indicator of both scales suggested that the items have relatively high internal consistency. The independent t-tests proved that there are significant differences between genders in intrinsic motivation to know, extrinsic motivation external regulation and amotivation sub-scales of AMS; and in extrinsic motivation external regulation and amotivation sub-scales of SMS. This study also proved that there are strong correlations between academic and sport motivation orientations of PES college students according to gender and suggested to adopt Sports and Academics Questionnaire (SAMSQA) in order to better understand this relationship.

Key words: Motivation • Intrinsic Motivation • Extrinsic Motivation • Amotivation • Academic Motivation
• Sport Motivation • Physical Education And Sport

INTRODUCTION

During the last few decades motivation has come forward as one of the most common topics in different domains of life, including education and sport. Many researches have been separately carried out in order to find motivational effects on academic and athletic success. However, to date, the number of researches which have brought education and sport together into discussion from the motivation point of view are very limited; and such researches have mainly focused on student-athletes' academic success.

Motivation can be defined as an activated state within a person consisting of drives, urges, wishes and desires that lead to goal-directed behavior [1]. Therefore academic motivation refers to desire, willingness, wish to engage in learning process and sport motivation similarly refers to the same process in athletic field. There are

certainly many reasons which lead to such psychological states in a person. The past literature produced different kinds of motivation theories such as self-determination theory [2], expectancy-value theory [3], self-efficacy theory [4], goal theory [5], etc. in order to explain the relationship between motivation and success. Most of the following researchers adopted self-determination theory in order to develop measurement instruments of motivation.

Deci and Ryan [2], divided motivation into three major parts, as intrinsic motivation (IM), extrinsic motivation (EM) and amotivation in order to better understand the psychological state of person. They also proposed to divide both IM and EM into three sub-divisions each; IM to know, IM to accomplish things, IM to experience stimulation, EM external regulation, EM introjected regulation and EM identified regulation. IM to know reflects the pleasure, satisfaction, or desire of

the person to learn something; IM to accomplish things reflects the sense of achievement and capability through accomplishing certain targets; and IM to experience stimulation reflects the pleasure and joy through participating in a function. EM external regulation reflects the type of motivation through the rewards or restrictions by others and also shows the lowest level of motivation [6]. EM introjected regulation is managed by rewards or restrictions carried out by the individuals themselves [7]; and last EM identified regulation defines the conditions in which individuals take a function for themselves, because they recognize that this function is universal for some reason [8]. On the other hand amotivation can simply be defined as lack of both intrinsic and extrinsic motivations.

Within this frame, many studies about motivation, so far, have uncovered that motivation in a specific domain resulted with success in that domain [9, 10]. Therefore, academic motivation would normally lead to academic success and sport motivation to athletic success. But when the population is composed of student-athletes, then these two types of motivations should be discussed in the same context. Student-athletes are often considered to be a nontraditional population of students, some of whom are highly motivated in athletics but are less motivated in school [11]. When compared to non-athlete student, their responsibilities, thus stress caused as a result of these responsibilities are higher and opportunities to concentrate on school studies are less. Of some particular concern is that research suggests that the greater commitment a college-athlete shows to the sport, the lower the university grade point average (GPA) will be [11]. Gaston-Gayles [12] found that athletic commitment is negatively related to college grades when motivation is used as a non-traditional measure of performance. Additionally, the Academic Motivation (AM) section of the Student Athletes' Motivation towards Sports and Academics Questionnaire (SAMSAQ) showed significant predictive validity of GPA [12]. After the development of SAMSAQ as a new motivational scale, it has been an important tool in order to understand the relationship between academic and sport motivation [13-15].

Applying SAMSAQ, Althouse [13] proposed the "academic-athletic motivation balance score" in order to clarify the relationship between student-athletes' two major roles in college, as student and athlete. The balance score was calculated as the difference between student-athletes' scores on the SAMSAQ scale measuring academic motivation and the SAMSAQ scale measuring athletic motivation; and the lower difference in

scores between two scales demonstrated the higher balance in student-athletes' roles as a student and an athlete.

Bondarenko (2013) found out that education level is the most important factor in sport motivation [16]. Therefore it is important to research the interaction between academic success and sport motivation. The aim of this research was to explore the relationship between academic motivation and sport motivation which would give an insight to better understanding of the academic performance of students engaged in sport activities.

MATERIALS AND METHODS

Sample Group: The sample group of the this study was composed of 154 first and second grade students studying at Bartın University, Physical Education and Sport College. As all the students entered to this college through a special fitness test and they are highly engaged in athletic activities within school curriculum, they are all accepted as student athletes. The gender and age distribution of the sample group were presented in Table 1.

Data Gathering Tools: In order to gather data, AMS and SMS were adopted to the whole sample group voluntarily. AMS, which is valid and reliable to measure the academic motivations of students, was developed by Vallerand *et al.* [17]; and SMS, which is valid and reliable to measure sport motivation orientations was developed by Pelletier *et al.* [18]. As in other motivation scales, both tests include 7 sub-scales (IM to know, IM to accomplish things, IM to experience stimulation, EM external regulation, EM introjected regulation, EM identified regulation and amotivation), each is composed of 4 questions, in total 28 questions. Each item in both tests is ranked with a 7 point likert scale, ranging from 1 (does not correspond at all) to 7 (corresponds exactly).

As this study made use of self-report measures, the participants may be prone to furnish socially desirable responses to the questions, resulting in less accurate representations of their true motivational orientations as warned by Selltiz *et al.* [19]. Therefore internal consistency and reliability of the tests were calculated.

Table 1: Gender and age distribution of the sample group

	n	\bar{x} (age)	SD (years)
Male	86	21.24	2.87
Female	68	20.12	1.34

Reliability and Data Analyses: The data derived from these two tests were evaluated using the Statistical Package for the Social Sciences (SPSS) version 19.0 through arithmetic means (\bar{x}), standard deviation (SD), independent samples t-test and Pearson Product Moment Correlation. For the statistical significance, p value was taken as 0.05 ($p < 0.05$) for the t-test and as 0.05 ($p < 0.05$) for correlation analyses.

The arithmetic averages and standard deviations of the motivation orientations sub-scales for both tests were calculated separately for both female and male students and independent samples t-test was applied to explore gender differences in motivation orientations. In order to find out the relationship and useful associations between academic and sport motivation orientation sub-scales, correlation analyses were conducted. Although Tabachnick and Fidell [20] underlined that correlation studies cannot be used to explain causality, this type of study at least can indicate whether a change in the value of the independent variables has a significant effect on changes to the dependent variables [13].

A reliability analysis with calculation of Cronbach's alpha was also conducted to determine if the measurement tools were acceptable and reliable or not. Cronbach's alpha was calculated as 0.82 for AMS and 0.76 for SMS, which indicated that the items of both tests have relatively high internal consistency. The p value for 2-tailed significance is .000, rounded to three decimal places. The strength of the found relationships should be interpreted accordingly to the values proposed by Choudry [21].

RESULTS

The results of AMS and SMS tests were presented separately according to gender in Table 2. Examining the descriptive statistics, it was observed that female students demonstrated higher averages in all three

sub-scales of IM and lower amotivation averages than male students in both tests. A second common result in two tests was observed in the averages of EM external regulation where male students achieved significantly higher scores. According to results of the independent t-tests, significant differences were found between genders in IM to know, EM external regulation and amotivation sub-scales of AMS; and in EM external regulation and amotivation sub-scales of SMS.

In order to explore the relationships of IM, EM and amotivation levels between two scales, Pearson Product Moment Correlation test was conducted. These analyses were presented in separate tables for 3 types of motivations.

According to the correlation analyses; significant positive relations were found in IM levels of students (Table 3) between AM and SM of female students ($r=.698$), SM of female students and AM of male students ($r=.567$), AM and SM of male students ($r=.416$) and AM of female and male students ($r=.324$). On the other hand there were non-significant relations in IM levels of students between SM of female and male students ($r=.002$) and AM of female students and SM of male students ($r=-.007$).

When it comes to EM levels of students (Table 4), significant positive relations were found between AM and SM of male students ($r=.743$), SM of female students and AM of male students ($r=.521$), AM of female and male students ($r=.221$) and AM and SM of female students ($r=.116$). For EM, non-significant relations were found between AM of female students and SM of male students ($r=.042$) and also between SM of female and male students ($r=-.009$).

And last, positive relations were found in amotivation levels of students (Table 5) between AM and SM of male students ($r=.685$), AM and SM of female students ($r=.478$), AM of female and male students ($r=.374$) and SM of

Table 2: Descriptive statistics for academic and sport motivation orientation sub-scales and t-test results

Motivation Sub-Scales	Academic Motivation					Sport Motivation				
	Female		Male		p	Female		Male		p
\bar{x}	SD	\bar{x}	SD	\bar{x}		SD	\bar{x}	SD		
IM-to know	4.91	1.14	4.38	1.02	0.03*	4.65	1.33	4.54	1.22	0.11
IM-to accomplish	4.64	1.54	4.48	1.14	0.12	4.62	1.17	4.39	1.16	0.09
IM-to experience stimulation	4.62	1.35	4.44	1.24	0.13	5.07	1.32	4.59	1.41	0.07
EM-External regulation	3.21	1.32	4.52	1.36	0.00*	3.62	0.97	4.54	1.04	0.00*
EM-Identified regulation	4.06	1.45	3.86	1.37	0.18	4.43	0.94	4.62	1.22	0.12
EM-Introjected regulation	4.17	1.24	4.34	1.05	0.15	4.86	1.21	4.71	1.13	0.29
Amotivation	2.75	1.34	3.16	1.24	0.03*	2.96	1.37	3.43	1.56	0.02*

*p < 0.05

Table 3: Correlation between IM orientations of AM and SM according to gender

			AM		SM	
Pearson Correlation			F	M	F	M
AM	F	r	1	.324**	.698**	-.007
		Sig. (2 tailed)		.000	.000	.000
	M	r	.324**	1	.567**	.416**
		Sig. (2 tailed)	.000		.000	.000
SM	F	r	.698**	.567**	1	.002
		Sig. (2 tailed)	.000	.000		.000
	M	r	-.007	.416**	.002	1
		Sig. (2 tailed)	.000	.000	.000	

Table 4: Correlation between EM orientations of AM and SM according to gender

			AM		SM	
Pearson Correlation			F	M	F	M
AM	F	r	1	.221**	.116**	.042
		Sig. (2 tailed)		.000	.000	.000
	M	r	.221**	1	.521**	.743**
		Sig. (2 tailed)	.000		.000	.000
SM	F	r	.116**	.521**	1	-.009
		Sig. (2 tailed)	.000	.000		.000
	M	r	.042	.743**	-.009	1
		Sig. (2 tailed)	.000	.000	.000	

Table 5: Correlation between Amotivation orientations of AM and SM according to gender

			AM		SM	
Pearson Correlation			F	M	F	M
AM	F	r	1	.374**	.478**	.003
		Sig. (2 tailed)		.000	.000	.000
	M	r	.374**	1	.004	.685**
		Sig. (2 tailed)	.000		.000	.000
SM	F	r	.478**	.004	1	.224**
		Sig. (2 tailed)	.000	.000		.000
	M	r	.003	.685**	.224**	1
		Sig. (2 tailed)	.000	.000	.000	

Table 6: The Strength of Relationship according to Correlation Value

Value of r	Strength of relationship
-1.0 to -0.5 or 1.0 to 0.5	Strong
-0.5 to -0.3 or 0.3 to 0.5	Moderate
-0.3 to -0.1 or 0.1 to 0.3	Weak
-0.1 to 0.1	None or very weak

female and male students ($r=.224$). On the other hand no significant relations were found in amotivation levels of students between SM of female students and AM of male students ($r=.004$) and SM of male and AM of female students ($r=.003$).

The strength of the found relationships were interpreted in table 6.

DISCUSSION

The purpose of this study was primarily to investigate the relationship between academic and sport motivation orientations of the PES college students and also to explore gender differences in this relationship. It is important to try to explore this relationship, as it would give an insight for better understanding of the relationship between sport participation and academic success. As stated by Turkmen [22], the academic success levels of student athletes, especially PES college students, have not been explored sufficiently in sport literature with special reference to academic motivation orientations.

Applying AMS and SMS this study found out that male students achieved significantly higher averages in EM external regulation and amotivation in both tests and female students achieved higher averages in IM to know in AMS. These findings are generally in line with previous studies which reported that females dominate in intrinsic motivation and males dominate in extrinsic motivation and amotivation in both academic [23, 24] and sport domains [18, 25-28].

The results of correlation analyses of this study conveyed that there was a strong positive relationship in intrinsic motivation levels of female students ($r=.698$), but moderate relationship for male students ($r=.416$). This finding can be interpreted as a natural result of females being more intrinsically motivated. The higher scores of correlation for females should refer to academic success of female student athletes compared to male student athletes. This approval is also in line with the previous literature which had found that female student athletes outperform males in their GPAs, or has higher academic motivation levels [13, 29-33]. In a similar study on the psychosocial development of athletes, Lantz *et al.* [34] found that upper-class female student athletes are more involved in their academic development than their male counterparts. Simons *et al.* [11] noted that female athletes are less-likely to attend college purely for athletic reasons, citing the lack of extrinsic motivation, which is caused by less support to women sport when compared to men sports. That's why the female athletes are more likely to place a greater emphasis on attending to their roles as students than male athletes, especially athletes in revenue sports. However, applying SAMSAQ to an international student population studying in UAE, Fortes *et al.* [16] reached to totally a different conclusion suggesting that male athletes has higher academic motivation scores, but they also admitted that the findings of their study show very little relationship between academic and athletic performance.

Another important correlation recorded in the present study was the extrinsic motivation levels of male students ($r=.743$). This is also to mean that male students at PES college were more affected by external values, rewards or restrictions than females. What's more male students reached to similar significant correlation value in amotivation ($r=.685$). Therefore the attitudes of male students appear to be somehow parallel towards academic and athletic interests.

Although important correlations were found in this study between academic and sport motivation orientations of PES college students, it is almost

impossible to reach definite conclusions through this type of an experimental design. This study applied two scales to the same sample for the first time, but as underlined by Tabachnick and Fidell [20], correlations cannot explain the causality of the variables. Therefore it has vital importance to use the term motivational balance between academics and athletics just as Simons *et al.* [11] and Althouse [13] did, in order to understand the real interactions between academic and sport motivations. As soon as SAMSAQ is validated in Turkish setting and academic-athletic motivation balance is introduced to researchers, further studies will have chance to research the relationship between motivation and many other different variables, such as academic success, sport experience level, multiple intelligence, personality, etc. for student athletes.

Before concluding it is also important to note that accepting all the PES college students as student athletes may result with misinterpretations. Therefore future studies should also include sport experience or sport participation level of the students as a variable while examining any relations between academic and sport motivation.

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