

Leadership Style, Machiavellianism and Fair Play at the School: Interaction of Instructors and Students in Physical Education

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Abstract

In this study, correlations among physical education instructors' leadership style and students' fair play behaviors and Machiavellian tactics were examined. The sample consisted of 292 students (151 males, 141 females) of 10 - 15 years old from primary and secondary schools. Three types of questionnaires were completed during physical education courses. Statistically significant differences were observed in perceived instructors' leadership style (more "autocratic" style toward male students and "democratic" toward female), antisocial behaviors by male students and pro-social behaviors by the female ones and Machiavellianism by male students. It has been found that the students of the 5th class of primary school are especially susceptible to see autocratic leadership style on their instructors and to perceive more gamesmanship, cheating, and Machiavellianism on themselves. However, the students of the 3rd class of secondary school tend to see more democratic leadership style on their instructors and to believe that they present more convention and respectfulness to their teammates. Perceived instructors' autocratic leadership style was negatively related to students' prosocial fair play behaviors, while it was positively related to students' antisocial fair play behaviors and Machiavellian tactics. Moreover, leadership style could significantly predict the variables of students' fair play behaviors and Machiavellianism. Three particular profiles have been proposed: the "bad and controlled student", the "respectful and weak student" and the "typical autocratic instructor". Thus, both academic and practical added value is expected to have been produced by the particular research.

Keywords

Leadership Style, Fair Play, Machiavellianism, Physical Education

1. Introduction

1.1. Literature Review

The leadership style affects positively the efficiency of attendants [1]. The autocratic leadership style is useful in narrow time frame [2]. Autocratic leadership style is connected with low-level tasks. Accordingly, the leaders should have characteristics democratic leadership style to the growth of performances [3]. The leadership of coaches affected their athletes when these have experience in sports and autocratic leadership style for groups were otherwise at the end of games [4]. Moreover, autocratic leadership style, performance mood and Machiavellianism had positive relations with teachers' verbal aggressiveness [5]. The athletic performance affected from factors as leadership style behavior, the athletes that participated in teams, the content of people in sports by collective extension, in each person in the abstract, in fair play, in democratic attitude, in autocratic behavior, in positive feedback, in democratic leadership style behavior is dominant in the secondary education schools. The laissez-faire style attitude should not fit in these schools for principals and of instructors [6]. The students believed that through leadership style attitude, the coaches helped more in practice and learning than students of physical education. Moreover, the athletes had more positive feedback in connection with students of physical education [7]. Additionally, the relation of leadership style with communicational features has also been explored [8]-[14].

The fair play is a much-discussed issue. The moral values are of importance in sport and physical education, as this course often offers more opportunities for interactions and relations. It is proposed that physical education is an appropriate environment for initiation and education socio-moral issues [15]. Additionally, it is supported that exogenous (contextual - environmental) factors can be decisive determinants of moral behavior in sport [16]. It has been suggested that fair play is divided into three variables: fair play in competitions, fair play in total and in community [17]. Participants that distinguish from team spirit employ method equitable competitions [18]. Young basketball players with helping teachers can contribute in fair play [19]. The fair play contributed as a main and necessary role in the modern community, in physical education when teachers instructed in pupils and in the education of people [20]. Players of 12 - 14 years old believed that in team football on purpose foul involved the fair play for the moral field [21]. The fair play could help in decrease violence and in good relations among these that concern by sports [22]. People that participated in sport had higher results in relations goals, in knowledge-approximation and of performance-elusion goals [23]. Participants argued that fair play in physical education could play in techniques with regard to subjects' empathic content [24]. During mediations of students, the positive attitudes had increased, in contrast to negative attitudes that persist either low or reduced by way of interventions, the fair play concerned with sociable attitudes in lesson of physical education, in particular of football [25], while the role of communicational features in the

framework of fairness has also been examined [26].

Machiavellianism is a term referring to a particular behavior pattern, involving manipulation of others into perfidy, wickedness, opportunism, and deceit [27]. Machiavellianists are expected to be ideologically neutral, to present restricted emotional involvement and to avoid commitments when it is favorable for them [28] [29]. It is identified four dimensions in Machiavellianism, distrust towards others, desire for power, desire for control and unethical manipulation [28]. Many analyses have supported that Machiavellian persons often follow dishonest and offensive ways to achieve their goals without being convinced by others themselves [30] [31]. Additionally, these persons tend to violate the rights of others for the sake of their personal interest [31]. Certain relations between Machiavellianism and subjects celebrities need to elucidate [32]. The Machiavellian teacher is expected to be characterized by self-efficacy, attitude of mind for appreciation, ingenuity, good behavior and high positions [33]. Machiavellianism is associated negatively with emotional intelligence [34]. Subsidiary psychopathy and the emotional intelligence and the Machiavellianism are of determinant relevance, when stimuli are controversial [35]. No differences were found between persons within the same group [36]. Casualties proved to have similar landmarks with self-expedience [37], while communicational dimensions have also been examined on the basis Machiavellianism [5] [38].

1.2. Innovation of Study

The interpretation of the relation of instructors' leadership style with phenomena of Machiavellianism and fairness perception in the school still remains a remarkable research challenge. The contribution of this research to a better understanding of this relationship is the expected academic added value. The chances of designing appropriate leadership patterns on the side of the teachers in order to control Machiavellianism and assure "fair play" among the students constitutes the practical added value, which is sought in the paper.

2. Method

2.1. Participants and Procedures

Participants in this study were 292 students (151 boys and 141 girls) aged 10 - 15 years old. They originated from Volos, Trikala and Larissa regions, Greece. The participants were from the 5th class of primary schools (65 students), 6th class of primary schools (159 students), 1st class of secondary schools (26 students), 2nd class (32 students) and the 3rd class of secondary schools (10 students), as presented in **Table 1**. The students answered anonymously in questionnaires related

Table 1. Sample data.

School	Primary		Secondary			Total
Class	5 th	6 th	1 st	2 nd	3 rd	5 classes
Students number	65	159	26	32	10	292 students

with instructors' leadership style (autocratic and democratic) and their self-perceived fair play-related behaviors (convention, respect to teammates, gamesmanship and cheating) and Machiavellianism. They answered in 10 - 15 minutes.

2.2. Instruments

The following instruments have been applied on the afore-mentioned sample of 292 students: a) A shorter version of the Leadership Scale for Sports (L.S.S.), [39], was used in order to measure perceived instructors' leadership style. This short version consisted of 6 items describing autocratic leadership style and 5 items describing democratic leadership style only two of the five dimensions were used. b) The version was used to assess students' fair play behaviors, based on the conceptualization of fair play [40], which included four subscales measuring two pro-social fair play behaviors: convention, respect to teammates and two anti-social fair play behaviors: gamesmanship and cheating. c) A version of the Machiavellianism Scale [29]) was used in order to measure students' Machiavellianism and the scale consisted of ten items. Participants were asked to respond to the items based on a 5-point Likert-type scale ranging from 1 = never to 5 = always.

2.3. Data Analysis

Data analysis was conducted with S.P.S.S. Cronbach's alpha test was used for checking the reliability and for detecting internal cohesion of variables. T-test was applied on Independent Samples Test in order to find significant differences between the participants' sexes. The one way ANOVA was used to examine the dependent variables. Pearson test was used for measuring the correlation of factors on questionnaires. Regression analysis was also used. Finally, Principal Component Analysis was implemented for suggesting a typology.

3. Results

Statistically significant differences were observed in students gender for convention ($t_{(1,290)} = -3.70$, $p < 0.05$), respect to teammates ($t_{(1,290)} = -3.69$, $p < 0.05$), gamesmanship ($t_{(1,290)} = 3.12$, $p < 0.05$), cheating ($t_{(1,290)} = 3.45$, $p < 0.05$), autocratic leadership style ($t_{(1,290)} = 3.13$, $p < 0.05$), democratic leadership style ($t_{(1,290)} = -2.40$, $p < 0.05$) and Machiavellianism ($t_{(1,290)} = 3.23$, $p < 0.05$), as indicated in **Table 2**.

ANOVA's results supported that there were significant differences between students 5th grade of primary schools, 6th grade of primary schools, 1st grade of secondary schools, 2th grade of secondary schools and 3th grade of secondary schools on the factors convention ($F_{(4,287)} = 4.55$, $p < 0.05$), respect to teammates ($F_{(4,287)} = 4.51$, $p < 0.05$), gamesmanship ($F_{(4,287)} = 5.86$, $p < 0.05$), cheating ($F_{(4,287)} = 3.66$, $p < 0.05$), autocratic leadership style ($F_{(4,287)} = 5.73$, $p < 0.05$), democratic leadership style ($F_{(4,287)} = 5.05$, $p < 0.05$) and Machiavellianism ($F_{(4,287)} = 4.87$, $p < 0.05$), as shown in **Table 3**.

Table 2. Students' gender comparison (data source: sampling in primary and secondary schools of Volos, Trikala and Larissa regions, Greece, 2017).

Variables	Gender	N	Mean	SD	t	df	p
Convention	males	151	2.30	1.13	-3.70	290	0.00
	females	141	2.81	1.25			
Respect	males	151	2.31	1.15	-3.69	290	0.00
	females	141	2.83	1.24			
Gamesmanship	males	151	3.29	1.18	3.12	290	0.00
	females	141	2.84	1.18			
Cheating	males	151	3.50	1.05	3.45	290	0.00
	females	141	3.03	1.24			
Autocratic	males	151	3.35	1.10	3.13	290	0.00
	females	141	2.93	1.16			
Democratic	males	151	2.57	1.30	-2.40	290	0.02
	females	141	2.95	1.40			
Machiavellianism	males	151	3.30	0.95	3.23	290	0.00
	females	141	2.92	1.05			

In addition, a correlation analysis was carried out, the effects that indicate in **Table 4**. From the results appear, that there was a negative significant relationship between autocratic and democratic leadership style ($r = -0.77$), convention ($r = -0.75$) and respect to teammates ($r = -0.74$), while there was a positive significant relationship between autocratic and gamesmanship ($r = 0.76$), cheating ($r = 0.73$) and Machiavellianism ($r = 0.68$). Further down, **Table 3** turns up the Cronbach's alpha, mean scores and standard deviations of the seven variables.

Additionally, run off regression analyze to autocratic leadership style and democratic leadership style with contribution of variables fair play (convention, respect to teammates, gamesmanship, cheating) and variable of Machiavellianism. The effects demonstrated that are statistic significant the autocratic leadership style with convention, respect to teammates, gamesmanship and cheating ($F_{(4,287)} = 116.89$, $p < 0.001$) with an R^2 of 62%. Perceived autocratic leadership style explained 62% of the variance in convention ($\beta = -0.25$, $t = -2.08$, $p < 0.05$), explained 62% of the variance in gamesmanship ($\beta = 0.34$, $t = 4.07$, $p < 0.001$), 62% of the variance cheating ($\beta = 0.16$, $t = 2.02$, $p < 0.05$), when there were no differences between autocratic leadership style with respect to teammates (62% prediction, $\beta = -0.07$, $t = -0.60$, $p = 0.55$). The results indicated that are statistic significant the autocratic leadership style with Machiavellianism ($F_{(1,290)} = 248.08$, $p < 0.001$) with an R^2 of 46.1%. Perceived autocratic leadership style explained 46.1% of the variance in Machiavellianism ($\beta = 0.68$, $t = 15.75$, $p < 0.001$). The effects demonstrated that are statistic significant the democratic leadership style with convention, respect to teammates, gamesmanship and cheating ($F_{(4,287)} = 204.51$, $p < 0.001$) with an R^2 of 74%. Perceived democratic leadership style explained 74% of the variance in convention ($\beta = 0.20$, $t = 2.06$, $p < 0.05$), explained 74% of the variance in respect to teammates ($\beta = 0.29$, $t = 2.91$, $p < 0.001$), 74% of the variance gamesmanship ($\beta = -0.49$, $t = -7.05$, $p < 0.001$), when

there were no differences between democratic leadership style with cheating (74% prediction, $\beta = 1.00$, $t = 1.52$, $p = 0.13$). The results indicated that are statistic significant the democratic leadership style with Machiavellianism ($F_{(1,290)} = 349.32$, $p < 0.001$) with an R^2 of 54.6%. Perceived democratic leadership style explained 54.6% of the variance in Machiavellianism ($\beta = -0.74$, $t = -18.69$, $p < 0.001$). The effects of the regression analyses are displayed in **Table 5**.

Table 3. Students classes comparison (data source: sampling in primary and secondary schools of Volos, Trikala and Larissa regions, Greece, 2017).

Variables	Schools classes	N	Mean	SD	F	p
Convention	5 th grade	65	2.11	0.13	4.55	0.001
	6 th grade	159	2.58	1.24		
	1 st grade	26	3.03	1.21		
	2 st grade	32	2.59	1.13		
	3 st grade	10	3.40	1.28		
Respect	5 th grade	65	2.09	1.03	4.51	0.001
	6 th grade	159	2.61	1.23		
	1 st grade	26	2.96	1.22		
	2 st grade	32	2.72	1.22		
	3 st grade	10	3.32	1.42		
Gamesmanship	5 th grade	65	3.66	1.05	5.86	0.000
	6 th grade	159	3.00	1.27		
	1 st grade	26	2.54	1.19		
	2 nd grade	32	2.86	1.20		
	3 rd grade	10	2.57	1.31		
Cheating	5 th grade	65	3.70	0.96	3.66	0.006
	6 th grade	159	3.20	1.21		
	1 st grade	26	3.01	1.22		
	2 nd grade	32	3.24	1.06		
	3 rd grade	10	2.57	1.31		
Autocratic	5 th grade	65	3.62	0.99	5.73	0.000
	6 th grade	159	3.12	1.13		
	1 st grade	26	2.55	1.21		
	2 nd grade	32	2.99	1.18		
	3 rd grade	10	2.57	1.11		
Democratic	5 th grade	65	2.17	1.18	5.05	0.001
	6 th grade	159	2.83	1.36		
	1 st grade	26	3.25	1.45		
	2 nd grade	32	2.89	1.28		
	3 rd grade	10	3.50	1.34		
Machiavellianism	5 th grade	65	3.47	0.81	4.87	0.001
	6 th grade	159	3.13	1.02		
	1 st grade	26	2.66	1.02		
	2 nd grade	32	2.96	1.14		
	3 rd grade	10	2.43	1.00		

Table 4. Reliabilities, Means, Standard Deviations and Pearson Correlations among seven variables (data source: sampling in primary and secondary schools of Volos, Trikala and Larissa regions, Greece, 2017).

	α	M	SD	1	2	3	4	5	6	7
1) Autocratic	0.94	3.15	1.14	1.00						
2) Democratic	0.96	2.75	1.36	-0.77**	1.00					
3) Convention	0.88	2.55	1.22	-0.75**	0.82**	1.00				
4) Respect	0.88	2.56	1.22	-0.74**	0.82**	0.95**	1.00			
5) Gamesmanship	0.91	3.07	1.25	0.76**	-0.83**	-0.87**	-0.87**	1.00		
6) Cheating	0.87	3.27	1.17	0.73**	-0.74**	-0.86**	-0.85**	0.85**	1.00	
7) Machiavellianism	0.95	3.12	1.01	0.68**	-0.74**	-0.81**	-0.80**	0.81**	0.85**	1.00

**p < 0.001, *p < 0.05, α = Cronbach's alpha, M = Means, SD = Standard Deviations.

Table 5. Regression analysis results according to autocratic and democratic leadership style (data source: sampling in primary and secondary schools of Volos, Trikala and Larissa regions, Greece, 2017).

	Autocratic	B	95% CI B	SE	β	t
Convention		-0.24	-0.46, -0.01	0.11	-0.25	-2.08*
Respect		-0.07	-0.29, 0.15	0.11	-0.07	-0.60
Gamesmanship		0.31	0.16, 0.46	0.08	0.34	4.07**
Cheating		0.16	0.00, 0.31	0.08	0.16	2.02*
Machiavellianism		0.77	0.67, 0.86	0.05	0.68	15.75**
	Democratic	B	95% CI B	SE	β	t
Convention		0.23	0.01, 0.45	0.11	0.20	2.06*
Respect		0.32	0.10, 0.53	0.11	0.29	2.91**
Gamesmanship		-0.53	-0.68, -0.38	0.07	-0.49	-7.05**
Cheating		0.11	-0.03, 0.26	0.08	1.00	1.52
Machiavellianism		-0.99	-1.09, -0.88	0.05	-0.74	-18.69**

**p < 0.001, *p < 0.05.

In **Table 6**, three types of students' perceptions appear referring to their own behavior as well as the behavior of their instructors: the "bad and controlled student", the "respectful and weak student" and the "typical autocratic instructor".

Concisely, gender-specific differences were observed regarding the convention, respect to teammates, gamesmanship, cheating, autocratic leadership style, democratic leadership style and Machiavellianism. Age-specific differences were observed concerning convention, respect to teammates, gamesmanship, cheating, autocratic leadership style, democratic leadership style and Machiavellianism as well. A negative significant relationship appeared between autocratic and democratic leadership style, convention and respect to teammates, while a positive one appeared between autocratic and gamesmanship, cheating and Machiavellianism. Autocratic leadership style is predictable by convention, respect to

Table 6. Mixed typology of students' perceptions (data source: sampling in primary and secondary schools of Volos, Trikala and Larissa regions, Greece, 2017).

				“The bad and controlled student”	“The respectful weak student”	“The typical autocratic instructor”	
Students' self-perceived behavior	Fair play-relevant behaviors	Convent	Congratulating opponents	-0.802	0.414	0.168	
		Respect	Supporting teammates	-0.802	0.419	0.143	
				Congratulating teammates' effort	-0.806	0.367	0.186
		Gamesmanship	Upsetting opponents	0.805	-0.356	0.032	
			Disturbing opponents	0.791	0.305	-0.173	
			Speaking badly to opponents	0.867	-0.278	-0.026	
			Irritating opponents	0.829	-0.302	0.002	
		Cheating	Cheating	0.760	0.472	-0.157	
			Willing to cheat	0.755	0.357	-0.109	
			Cheating to win	0.860	-0.293	0.020	
			Cheating safely	0.756	0.379	-0.118	
		Machiavellian behavior		Deceiving for own benefit	0.755	0.149	0.063
				Deceiving to get whatever desired	0.832	0.174	0.104
				Behaving with cunning	0.837	0.182	0.188
				Stepping on others	0.784	0.215	0.135
				Enjoying intrigue	0.775	0.237	0.229
				Acting for own benefit	0.737	0.225	0.116
				Winning important	0.816	0.202	0.180
				Being merciless	0.784	0.219	0.202
	Instructors' behavior as perceived by students	Leadership style	Autocratic style	Deciding by himself	0.737	0.020	0.286
Choosing activities by himself				0.712	-0.057	0.185	
Not considering students				0.741	-0.163	0.127	
Planning by himself				0.759	-0.059	0.320	
Not clarifying				0.723	-0.216	0.175	
Keeping distance				0.797	-0.287	0.068	
Democratic style				Treating mistakes graciously	-0.841	0.309	0.120
				Letting students set their goals	-0.819	0.262	0.163
		Letting students try things	-0.851	0.156	0.100		
		Letting students at their own pace	-0.843	0.236	0.043		
			Allowing students suggest ways of practicing	-0.842	0.227	0.066	

Extraction Method: Principal Component Analysis, 4 components extracted.

teammates, gamesmanship and cheating, Machiavellianism, while democratic leadership style by convention, respect to teammates, gamesmanship and cheating. Three types of students' perceptions appeared regarding their own as well as their instructors' behavior: "bad and controlled student", "respectful and weak student" and "typical autocratic instructor".

4. Discussion

The aim of this study was fourfold: a) to explore differences between the sexes and among classes regarding leadership style, fair play and Machiavellianism, b) to investigate the relationship between physical education instructors' leadership style as perceived by students and students' fair play and Machiavellianism, c) to examine the influence of instructor leadership style on student fair play and Machiavellianism and d) to suggest instructors' and students' typology. The results of the study indicated that statistically significant differences were observed in perceived instructors' leadership style (more "autocratic" style toward male students and "democratic" toward female), antisocial behaviors by male students and pro-social behaviors by the female ones and Machiavellianism by male students. It has been found that the students of the 5th class of primary school are especially susceptible to see autocratic leadership style on their instructors and to perceive more gamesmanship, cheating and Machiavellianism on themselves. However, the students of the 3rd class of secondary school tend to see more democratic leadership style on their instructors and to believe that they present more convention and respectfulness to their teammates. Also, perceived instructors' autocratic leadership style was negatively related to students' prosocial fair play behaviors, while was positively related to students' antisocial fair play behaviors and Machiavellian tactics. The results of regression analysis revealed that perceived instructors' autocratic leadership style could significantly predict the variables of students' fair play behaviors (convention, gamesmanship, cheating) and Machiavellianism, while democratic leadership style could significantly predict the variables of students' fair play behaviors (convention, respect to teammates, gamesmanship) and Machiavellianism. Three particular profiles have been proposed: the "bad and controlled student", the "respectful and weak student" and the "typical autocratic instructor".

In the present study, male students seem to regard their instructors as more autocratic than female ones. This is in accordance with previous research which supported that educators were more aggressive to boys than to girls [8] [41]. Consequently, male students regard their instructors as more autocratic, while they perceive themselves to present more anti-social fair play-related behaviors and more Machiavellian tactics than female ones. These results are also compatible with findings of other studies where instructors proved to be more aggressive to male students due to their disobedience and indiscipline [42]. Moreover, the present findings are in accordance with [9] which supported that autocratic leadership style mainly appeared in male rather than in female. It was presented

that male students had a predisposition that appraises more the Machiavellianism in connection with female students as and in our study [43]. Female students had higher scores than male students on deceiving and in impression management that have relation with Machiavellianism of median age 20 years old [44]. The self-deception of the male students was more intensive than of the female ones [44]. Thus, it is likely that autocratic behavior of instructors is a main reason for the facts that male students show more intensive Machiavellianism. However, autocratic as well as aggressive attitude is quite dissuasive for all trainees, independent of gender [45].

In the present study, the students of the 5th class of primary school perceive more autocratic leadership style on their instructors and more gamesmanship, cheating and Machiavellianism on themselves, while the students of the 3rd class of secondary school ascribed more democratic leadership style to their instructors and more convention and respectfulness to themselves. This can be attributed to a possible more egoism which is immanent in the students of an earlier age. Results appeared in democratic and autocratic style after having discovered significant disparities between the 5th and the 6th grade of elementary school [26]. Trainees between 14 and 17 years old and their instructors showed their preferences to low autocratic leadership style and high democratic leadership style [46]. Especially, the two last classes of primary schools presented a high score in Machiavellianism [47].

The results of this study seem to be consistent with previous research, indicating that leadership style contributed to the improvement of skills and of relations between trainees and instructors [48], as in present study was showed that instructors' democratic leadership style was positively correlated with convention and respect to teammates. It is indicated that perceived instructors' autocratic leadership style affects not only student fair play behaviors but also their Machiavellianism, which is in accordance with the content of previous research [30] [31]. Moreover, it is supported that perceived instructors' democratic leadership style affects negatively students' Machiavellianism, which is consistent with previous research [49] [50] [51]. Instructors' personality was found to play a major role in the relations with their students and to influence their emotions, behavior and attitudes [52] [53] [54]. Instructor's autocratic leadership style proved to be a quite important predictor of the students' fair play behaviors and Machiavellianism, which is consistent with previous findings indicating that instructors' aggressive behavior is in negative relation with convention and respectfulness, while it is positively related with cheating and gamesmanship [26] [38]. Simultaneously, it is pointed out that there is a relationship between moral judgments and Machiavellianism [55] [56] [57].

In the present study, the three types can be understood as follows: The first type is the "bad and controlled student". Students who accept that they are susceptible to gamesmanship, cheating and Machiavellianism tend to see their instructors as fully autocratic. This is understandable as such "bad" students are

often controlled by their instructor. As a result of this, they find him too strict and “autocratic” to them. Inversely, if an instructor is really too strict and demands from them high performance in physical education, then the students are thereby pressed to use gamesmanship, cheating and Machiavellian tactics. The second type is quite compatible with the everyday experience. This is the type of “respectful and weak” student. Students who are susceptible to consent and respectfulness to others, only occasionally may present gamesmanship and cheating behavior. Thus, the instructors have no particular reason to draw their attention to them or to control them strictly. Therefore, they regard their instructors as “democratic”. They seem to behave “democratically” to them as a reward for their conscientious behavior. Finally, the “autocratic instructor” seems to be a quiet “typical” instructor’s profile in the perception of the students, as it appears independently of any self-perceptions of students (“cheaters” or not etc). Thus, the “autocratic” style is apparently established in the behavioral perception patterns of the students as an immanent feature of being an instructor. Such typologies have been proposed in previous research [58]-[71].

It has been supported that the negative atmosphere at home and the loneliness seems to be in negative relation with Machiavellianism [72]. Machiavellianism appearing in childhood can also be interpreted as a reaction to authoritarianism [73]. On the other hand, in adults it seems to be correlated with hostile attitudes [74] and with aggressiveness [37] [75] [76]. It is argued that moral elements were in negative relation with Machiavellianism [77].

A normative comment derived from the empirical findings is that physical education instructors should avoid autocratic behavior, as Machiavellianism seems to be related with unfairness, aggressiveness, antisocial fair play behaviors and superficial obedience. On the contrary, instructors should present democratic behavior, which is conducive to a supportive classroom climate and to a greater self-confidence of students. Future research can focus on the influence of more and more detailed variables on Machiavellianism as well as on applying social network analysis in combination with socio-personal features.

5. Conclusion

Differences between the sexes and among classes regarding leadership style, fair play and Machiavellianism were discussed. The relationship between physical education instructors’ leadership style as perceived by students and students’ fair play and Machiavellianism was explored. The influence of instructor leadership style on student fair play and Machiavellianism was examined. Finally, an instructors’ and students’ typology was suggested. The instructors’ leadership style was more “autocratic” style toward male students and “democratic” toward female ones. Antisocial behaviors by male students and pro-social behaviors by the female ones and Machiavellianism by male students were observed. The 5th class students in primary school are susceptible to perceive autocratic leadership style on their instructors and more gamesmanship, cheating and Machiavellianism on

themselves. The 3rd class students in secondary school tend to perceive more democratic leadership style on their instructors and more convention and respectfulness on themselves. The perceived instructors' leadership style is negatively related to students' prosocial fair play behaviour and positively related to students' antisocial fair play behavior and Machiavellianism. Three particular profiles have been proposed: the "bad and controlled student", the "respectful and weak student" and the "typical autocratic instructor". Challenges for future research can consist in exploring further variables influencing the perception and behavior such as family situation. Network analysis can also be used for detecting perceptions of leadership styles, pro- or antisocial behaviors and Machiavellianism.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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