

DIFFERENCES BETWEEN MALE AND FEMALE SECONDARY SCHOOL STUDENTS IN ASSESSING THEIR PHYSICAL AND HEALTH EDUCATION TEACHERS' COMPETENCES

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Abstract

The purpose of the study was to examine if there are significant differences between male and female secondary school students in assessing the personal and professional competences of their physical education teachers, and to determine if these group differences are in any kind of interaction with the teachers' gender. The sample in this study were N=831 students from fourteen secondary schools in the urban parts of Sarajevo. The students attended third (N=422 or 50.8%) and fourth class (N=409 or 49.2%) at the time of the research. There were N=452 (54.4%) females and N=379 (45.6%) males in this sample, both aged from sixteen to eighteen. A 28-item Teachers' Competences Perception Questionnaire was constructed (TCPQ) and applied on the given sample. The instrument measured the competences related to teaching skills, communication and empathy, health care instructions, pedagogical competences and physical appearance. According to the results, the male students gave higher ratings to the teachers of both genders on pedagogical competences. No significant group differences and interactions were identified on all the other competence scales. Also, the students of both genders generally gave higher ratings on physical appearance to female teachers and a significant positive interaction was found between student and teacher gender in assessing the teachers on this variable. Finally, a negative interaction was found in assessing teachers on communication and empathy where male students rated female teachers higher and female students rated male teachers higher on this variable. Theoretical and practical implications of the study have been also stated.

Key words: sex, gender, physical, health and sports education, teachers' competences, students' assessment.

Introduction

Through the human history, there has always been an implicate rule of dividing the social roles and professions into typically feminine or typically masculine. This trend exists even in nowadays professions and many people, including some professionals, have formed social perceptions of different professions as masculine or feminine. There is a general view that, for instance, professions such as mathematics, science, sport and physical activities are typically masculine, and the professions such as art, literature and languages are typically feminine. This process of stereotyping is very complex; it exists in the minds of individuals, manifests itself through their behaviours and makes effects on social norms. On the other hand, social pressures facilitate this process at individual level. In this way, gender roles forming early in the childhood push boys to engage in sports and physical activities more frequently than girls. This gender role diversification continues through primary school education which starts to seriously have some further implications on the education of males and females, recognition of their sports talents, formation of their social perceptions and even further in forming their expertise as sportsmen or physical education experts in adulthood. During the primary and secondary school education, stereotyping process is related more to students' gifts and abilities and their recognition in sports activities.

Thus, Neihart (2006) presents a list of factors that through motivational processes hinder talent development and one of them is gender. The author asserts that weakened achievement motivation in females' results from the conflicts of roles as it is the case with the members of national minorities. In this way a female student could have less interest and motivation to participate or excel in activities that are more masculine. This goes also for sports and not only other academic activities. But, what happens in the adulthood when talents are more or less realized and when the focuses of interest are professional competences or even expertise? Competences are defined as personal capacities of an individual to perform, manage and act at a required level of knowledge, skills and abilities in his/her work (Mijatović, 1999), or they can be considered as the ability of an individual to successfully perform an activity or complete a given task (Rychen, 2004). In sports and physical education, women are more likely to be more rigorously assessed with respect to their competences or expertise than men. According to Horn and Harris (1996), gender differences in criteria for judging physical competence do not emerge until the high school years. It has been reported that at that period of time boys prefer physical strength and give more importance to speed and ease of learning new skills whereas girls indicate greater use of internal sources such as

physical attraction and achievement of goals or social sources such as feedback and evaluation by adults and peers (Weiss, 2000). McKiddie and Maynard (1997) found out in their study that male students were more accurate in estimating their physical competences, but these sex differences were moderated by age, as these differences were significant in students attending 10 years class. The results of that study also revealed that male and female students rely on different sources of their assessments. But, physical education teachers are also assessed among themselves, and by their students. Speaking of self-assessments, Kovač and Starc (2008) conducted a research whose results showed that female teachers assessed themselves higher on PE didactics, physical and motor development, analysis and planning, work with talented pupils, didactics of curricular sports, classroom management, organizing sport activities and assessment, evaluation and grading.

Male teachers had lower self-assessment values on these variables. Other sources of teachers' competences assessments are their coworkers and students, in case they are already employed and participate in education process, or by their employers or other professionals who are to assess them and hire. It is not completely certain if the criteria for gender based judgment on the physical and health education teachers' competences are an extension of what was learnt at younger ages and through social mediation processes, but these differences exist even in adulthood and among professionals. Aside from employers, in the light of these engendered criteria, students also judge their teachers. It has to be emphasized that physical education teachers ought to have professional competences which are more general category and they include not only physical abilities of teachers but also their social and personal competences. So, there is a possibility that the students do not include these later ones in their assessments as much as physical competences.

Nevertheless, this process of judging both students and teachers is two-directed. Male and female teachers could give different feed-backs to their male and female students, and students also could differently judge their male and female teachers, especially when it comes to the subject of physical education. While examining the students' perception of their teachers, it must be taken into account that these perceptions do not necessarily represent students' gender bias but also the perceived way in which teachers differently treat male and female students in their physical activities. No doubt there are empirical evidences of these gender differences in assessing physical education teacher' competences. In the study conducted by Nicaise, Bois, Fairclough, Amorose and Cogérino (2006), the results showed a significant interaction between student and teacher gender in students' assessment of the feedback given to them by their teachers. Also, Demir (2015) conducted a study and the findings revealed that female students gave better assessments to their

teachers on the competences motivational interaction, professional enthusiasm and dedication, while male students had higher results on assessing teachers' reflective interaction. Given the results of these and similar researches as well as previous theoretical analyses, the aim of the study presented in this paper is to see if there is and to what extent present the effect of students' and physical education teachers' gender in assessing male and female physical educators' competences by their students. Further, the goal is to provide some theoretical explanations of the analyzed results of this study, especially related to gender stereotyping, and propose some practical and theoretical implications.

Methods

Participants

The research was conducted on a sample of N=831 students from fourteen secondary schools in the urban parts of Sarajevo. It was the majority of the secondary schools in the county, so the sample was representative for the Sarajevo secondary school students' population. The students attended third (N=422 or 50.8%) and fourth class (N=409 or 49.2%) at the time of the research. There were N=452 (54.4%) females and N=379 (45.6%) males in this sample, aged from sixteen to eighteen. Also, a sample of N=19 teachers from these fourteen schools were assessed by the students. There were N=7 female and N=12 male physical and health education teachers.

Instrumentation

Previously, in the first stage of the study, a form of Teachers' Competences Perception Questionnaire was constructed (TCPQ further in text). The questionnaire has 28 questions each of which is a statement describing a competence that may be present at the teacher assessed by a student. These statements are five-point Likert type scales with the offered answers as follows: 1- Not true at all, 2-Mostly not true, 3-Neither true nor untrue, 4-Mostly true and 5-Totally true; These questions cover five different groups of competences and they are (1) teaching skills (nine items), (2) communication and empathy (eight items), (3) health care instruction (three items), (4) pedagogical competences (five items) and (5) physical appearance of the teacher (three items); The purpose of the instrument designing was to determine its factor structure and to validate it. On the account of the results of exploratory factor analysis with oblimin rotation, it was found out that the instrument measured five distinct and correlated factors related to the competences described above. These five factors explained 57.726% of total variance, indicating a solid factor structure of TCPQ. The structure model of the instrument was checked out with confirmatory factor analysis. Indices, $\chi^2/df < 5$ (Schumacker & Lomax, 2004) or $\chi^2/df < 2$ (Ullman, 2001), GFI=0.90 and > 0.90 and CFI > 0.93 (Byrne, 1994), NFI > 0.90 (Byrne, 1994) or > 0.95 (Schumacker & Lomax, 2004) and RMSEA < 0.08 (Hu & Bentler,

1998) or <0.04 (Steiger, 1990), indicate a good model fit. The model tested in our research proved to fit well accordingly to the values of the almost every index of fit ($\chi^2/df=2.290$, $GFI=0.937$, $NFI=0.929$, $CFI=0.959$ and $RMSEA=0.039$). Reliability analysis showed that α -Cronbach type of reliability was high for the next scales: (1) teaching skills ($\alpha=0.87$), (2) communication and empathy ($\alpha=0.87$) and (3) pedagogical competences ($\alpha=0.85$); The health care instruction scale had medium reliability ($\alpha=0.67$) and the physical appearance scale had low reliability ($\alpha=0.45$) indicating there were some methodological limitations in interpreting results on this scale. The distributions of the data were also analyzed. Kolmogorov-Smirnov z-value was not taken into consideration due to its oversensitivity to large sample sizes, but skewness and kurtosis indices were calculated. According to the given values of skewness and kurtosis indices, it was found out that the distributions of the data deviated from the normal distribution on the next scales: (1) teaching skills (skewness=-1.074 and kurtosis=1.134), (2) communication and empathy (skewness=-1.277 and kurtosis=1.427) and (3) physical appearance (skewness=-1.494 and kurtosis=1.640).

Therefore, data transformations were performed on these three scales in order to gain the normality of the data distributions. Data transformation with the mathematical expression $Xt = \frac{x^2}{5}$ was performed for the variables of teaching skills and communication and empathy and with the mathematical expression $Xt = \frac{x^3}{5}$ for the variable of physical appearance.

After the transformations, the values of skewness and kurtosis were acceptable indicating that the values on the three scales were normally distributed (skewness=-0.490, kurtosis=-0.389 for teaching skills, skewness=-0.772, kurtosis=-0.183 for communication and empathy and skewness=-0.914, kurtosis=-0.496 for physical appearance).

On the other hand, the values of these indices were within acceptable range from -1 to 1 for the health care instruction scale and pedagogical competences scale (skewness=0.06, kurtosis=-0.546 for health care instruction and skewness=-0.878, kurtosis=0.395 for pedagogical competences), indicating that the results on the two scales were normally distributed. Only the variable with normally distributed results entered further statistical analyses.

Data collection

After the final form of the instrument was made, it was applied to the aimed sample of the secondary school students in order to assess the competences of their teachers. During the assessment of the sports teachers, $N=542$ students (65.2%) assessed the competences of their $N=12$ male teachers and $N=289$ (34.8%) students assessed the competences of their $N=7$ female teachers. In total, $N=269$ (32.4%) male students made assessments of their male teachers and $N=108$ (13.0%) male

students made assessments of their female teacher. On the other hand, $N=271$ (32.6%) female students made assessments of their male teachers and $N=181$ (21.8%) female students made assessments of their female teachers. The data collection was completed within three months.

Data analysis

In order to examine the differences in the scale values between the groups formed by the independent variables of teachers' and students' sexes, factorial model (2x2) of analysis of variance (ANOVA) was employed. Descriptive statistics related to the mean values on the scales are also presented.

Results

Mean values and standard deviations of the results on TCPQ scales are shown in the following tables. These mean values of the results are organized in the cells by the sex of the students and the sex of the teachers assessed in order to see if there are notable differences among the groups in these mean values.

Table 1. Mean values and standard deviations of the results on the TCPQ scales, by students' gender

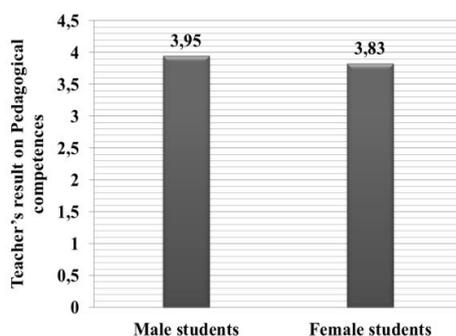
TCPQ scale	Students' gender	Teacher's gender assessed	N	M	SD
Teaching skills	Male	Male	269	3.20	1.168
		Female	108	3.28	1.032
		Total	377	3.22	1.139
	Female	Male	271	3.27	1.053
		Female	181	3.09	1.138
		Total	452	3.20	1.090
Communication and empathy	Male	Male	269	3.51	1.212
		Female	108	3.63	1.164
		Total	377	3.54	1.198
	Female	Male	271	3.77	0.990
		Female	181	3.35	1.219
		Total	452	3.60	1.107
Health care instruction	Male	Male	269	2.38	0.800
		Female	108	2.37	0.807
		Total	377	2.38	0.801
	Female	Male	271	2.33	0.777
		Female	181	2.49	0.926
		Total	452	2.39	0.843
Pedagogical competences	Male	Male	269	3.93	0.911
		Female	108	4.00	0.877
		Total	377	3.95	0.901
	Female	Male	271	3.86	0.925
		Female	181	3.79	0.871
		Total	452	3.83	0.903
Physical appearance	Male	Male	269	3.61	1.534
		Female	108	4.22	1.230
		Total	377	3.78	1.478
	Female	Male	271	3.88	1.423
		Female	181	3.94	1.369
		Total	452	3.90	1.400

There are some differences between male and female students in the values of their assessments on the competences of their male and female physical and health education teachers. But these differences are identified at the level of the data description and may reflect only random variations of the mean values on the scales.

Table 2. Mean values and standard deviations of the results on the TCPQ scales, by the sex of the teachers assessed.

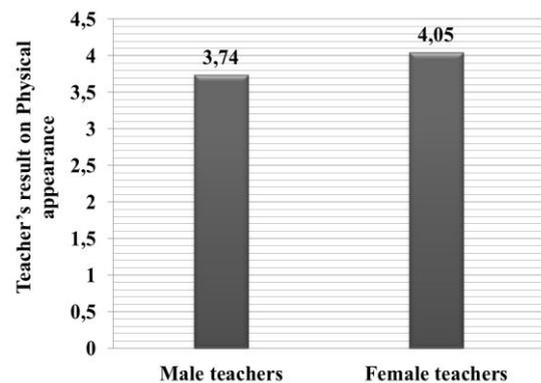
TCPQ scale	Teacher's gender	N	M	SD
Teaching skills	Male	540	3.24	1.111
	Female	289	3.16	1.101
	Total	829	3.21	1.108
Communication and empathy	Male	540	3.64	1.113
	Female	289	3.45	1.204
	Total	829	3.58	1.149
Health care instruction	Male	540	2.35	0.788
	Female	289	2.45	0.884
	Total	829	2.39	0.824
Pedagogical competences	Male	540	3.89	0.918
	Female	289	3.87	0.878
	Total	829	3.88	0.904
Physical appearance	Male	540	3.74	1.484
	Female	289	4.05	1.324
	Total	829	3.85	1.437

As it can be seen from the table 2, there are some differences in the mean values of the assessments on the male and female teachers' competences, regardless of the students' gender. Taken in whole, the both male and female students assessed male teachers higher than female teachers on teaching skills, communication and empathy and pedagogical competences. On the other hand, female teachers were given higher scores on the health care instruction and physical appearance scales. In order to examine the significance of these group mean differences, factorial ANOVA was performed. Differences between groups in the mean values on the scales were examined with respect to both students' and teachers' genders and their interactions. According to the results of ANOVA, the factor of students' gender has no significant effect on mean differences on most of the scales ($F=0.450$ and $p=0.503$ for teaching skills, $F=0.011$ and $p=0.916$ for communication and empathy, $F=0.03$ and $p=0.592$ for health care instruction, and $F=0.02$ and $p=0.967$ for physical appearance). Male and female students do not differ in the assessments of their teachers on these scales, regardless of teachers' gender. Only exception is the scale related to teachers' pedagogical competences ($F=4.493$ and $p=0.034$) were male students gave significantly higher scores to their teachers of both genders, compared to female students (see picture 1).



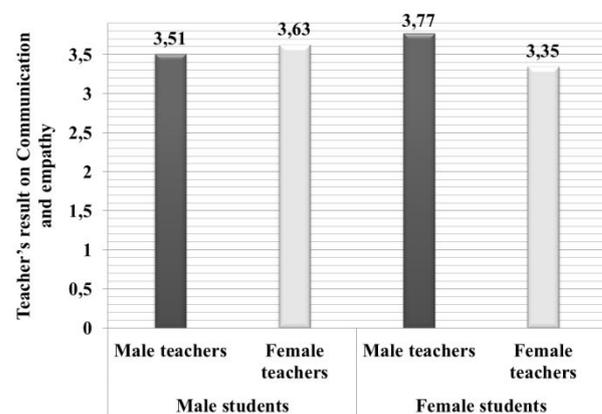
Picture 1. Teachers' result on pedagogical competencies.

The factor of teachers' gender has significant effect on mean differences on the scale related to physical appearance ($F=10.279$ and $p=0.001$), but not on all the other scales ($F=0.365$ and $p=0.546$ for teaching skills, $F=3.340$ and $p=0.068$ for communication and empathy, $F=1.683$ and $p=0.198$ for health care instruction, and $F=0.002$ and $p=0.963$ for pedagogical competences). On average, female teachers received higher scores on their physical appearance than male teachers, no matter if they were assessed by male or female students (see picture 2).



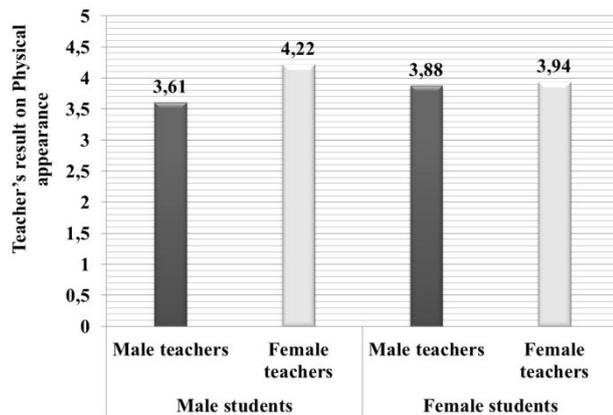
Picture 2. Teachers' result on physical appearance.

The significant interaction of the teachers' and students' gender factors was found on the communication and empathy and physical appearance scales ($F=10.377$ and $p=0.001$ for communication and empathy and $F=6.669$ and $p=0.010$ for physical appearance). But this interaction effect was not found for the other three scales ($F=2.438$ and $p=0.119$ for teaching skills, $F=2.066$ and $p=0.151$ for health care instruction and $F=1.115$ and $p=0.291$ for pedagogical competences). The interaction effect on the dependent variable of communication and empathy, is negative. On average, male students gave higher scores to female teachers than to male teachers. But, within the group of female students, the situation is inverted. They gave higher scores to male teachers compared to female teachers (see picture 3).



Picture 3. Teachers' result on communication and empathy.

The interaction effect on the dependent variable of physical appearance is positive. On average, both male and female students gave higher scores to female teachers compared to male teachers. But, within the group of female students, these differences are more pronounced (see picture 4).



Picture 4. Teachers' result on physical appearance.

Discussion

As it was pointed out earlier in the paper, the purpose of the study was to examine if there are significant differences between male and female students in assessing the professional and personal competences of physical and health education teachers in secondary schools, and to see if these differences can be attributed to students' and teachers' gender and their mutual interaction. Several dependent variables related to these competences were analyzed and they are teaching skills, communication and empathy, health care instruction, pedagogical competences and physical appearance. For that purpose, a 28-item Teachers' Competences Perception Questionnaire (TCPQ) covering these five general competences was applied on a sample of N=831 secondary school students in Sarajevo county. On the account of the results of data analysis, significant differences between male and female students has been found in assessing the teachers on their pedagogical competences.

On average, male students give higher assessment values to their teachers on this variable than female students, regardless of teachers' gender. No teacher and student gender interaction effect on the values of this variable has been found. Significant differences between male and female students has not been found on the other competence scales. Further, a significant difference between male and female teachers has been found on physical appearance. The students of both genders rated female teachers higher than male teachers on physical appearance. A significant and positive student-teacher gender interaction has been identified on this dependent variable. Although the both male and female students rated female teachers higher than male teachers on this variable, these differences were even more

pronounced within the group of female students. And, finally, a negative and significant gender interaction has been identified on the variable of empathy and communication. Generally, male and female students do not differ in the assessment values on communication and empathy. But, if these differences are analyzed separately within the group of male and within the group of female students, significant differences emerge. On average, female students rated male teachers higher than female teachers on communication and empathy. On the other hand, male students rated female teachers higher than male teachers on communication and empathy. The results of the study presented in this paper clearly indicate that there are differences in how students perceive male and female teachers. Also, there are differences between male and female students in their ratings and perceptions of male and female teachers.

Although these differences has not been identified on each of the dependent variables, these results strongly indicate that gender related bias is likely to be present among students of secondary schools, especially when it comes to assessing their teachers' pedagogical competences, communication and empathy and physical appearance. It is a bit hard to compare these results with the ones provided by other authors, due to methodological differences in sampling, instrumentation and general research design. Speaking of gender differences among students, Bratanić and Maršić (2005) present the results of their study where they discovered that male and female students did not differ in assessing their physical and health education teachers on a number of variables some of which are mood, affection towards students, trust, empathy, personality, equal treating of all the students, professional work competence and work effort (all related to the behaviours of the teachers assessed by their students). The only significant difference found in the study was related to the variable of humor.

The female students from the sample rated their teachers higher on this variable compared to the male students. To some extent the results of the study presented in this paper are similar to these ones. In our study we also failed to identify some of the significant gender differences among students, related to their perceptions of teachers' competences. Thus, significant differences were not found on the scales related to teaching skills and health care instructions (most closely related to the authors' professional work). But significant differences were found on the variable of pedagogical competences and significant interactions were found on the variables of communication and empathy and physical appearance. There is a general view, sometimes supported by empirical evidences, that males students perceive higher conflict from their male teachers and girls higher support by their male teachers, although some research showed that these gender differences among students were not significant (e.g. Hughes, Cavell, & Willson, 2001).

But, in the case of our study, a negative interaction on the communication and empathy scale was found. This competence is defined as a series of behaviours that teachers manifest in order to help, understand, communicate with and give support to their students. To some extent, the results of the study presented in this paper confirm that girls are more prone to assess their male teachers as supportive and empathic. But, interesting is that boys perceive their female teachers as supportive more than the female students do. This finding leaves some space for further empirical research in order to examine if there are also more perceived conflicts between female students and female teachers and more perceived support provided by female teachers to their male students. But, there is also a positive interaction of student-teacher gender, which has significant effect on the values on physical appearance of teachers. The male students and even more the female students rated female teachers higher on physical appearance. Physical impression that a teacher may leave on students is very liable to stereotypic views and gender orientations of students. It is closely related even to physical attraction. In this case, there is plenty of room for hypothesizing that the judgments of the students were not biased in this way. The males did rate lower female teachers on this variable than female students did, but they rated them higher on communication and empathy. It is possible that the teachers of opposite sex really manifest more empathic and supportive behaviours to the students of opposite sex. On the other hand, it is obvious that there is inter-gender consensus among students that female teachers have better-looking physical appearance.

This maybe reflects some stereotypic views but further research is needed to confirm this. In previously mentioned research (Demir, 2015), male and female students differed in a series of variables related to the assessments of their teachers' behaviours, regardless of the interactions with teachers' gender. It is possible that those results of the study imply the presence of gender related criteria existing among students in assessing their teacher of both sexes and that they are not related only to teachers' gender and gender related behaviours. In the research conducted by Nicaise, Bois and Amorose (2006), it was found that female students perceived that they received more feedback and had more communication with their teachers than male students did. Further, the results of the study revealed that female students were more active in asking questions and asking for more information and explanation. These findings imply that the interaction between students and teachers is a „two-direction road“. Gender differences among students related to their expressive behavior also affect the behavior of the teachers, regardless of teachers' gender. But, in the case of our recent study, these differences among students interacted with teachers' gender. Summarizing these results, several explanations of these findings can be proposed. Firstly, there are obviously teachers' competences and behaviors

that are perceived and assessed by students regardless of teachers' sex and there are competences that are assessed in the same way by male and female students. Further, there are differences among students in assessing the teachers of both sexes. For instance, in our study male students gave higher scores to the teachers of both sexes on pedagogical competences. This could mean that the males in the sample had less rigorous criteria in assessing their teachers on this variable. In this case, differences could be attributed to the stereotyping in the educating of male and female students, but does not necessarily mean the presence of the gender related stereotypes in students' judgment. And finally, there are differences among students with obvious interactions between students' and teachers' sexes, and they could mean the presence of gender related stereotypes in the both teachers and students. Students could judge their teachers through these stereotypes and teachers could judge and treat the students in the similar way. These students' perceptions are dependent of how their teachers treat them, and they define and determine their motivation to engage in physical activities as it was shown in previous studies (e.g. Bratanić and Maršić, 2005). These possible effects of teacher gender on the teachers' judging their students should be taken into account even in practical education work as they are the factors that in reverse affects students' perceptions and motivations to engage in physical activities and sports. These students' behaviors also may negatively affect the possibility that their physical competences and potentials are recognized by their teachers.

Conclusion

On the account of the results of the research conducted and presented in this paper, it has been found out that there are significant differences between male and female students of secondary schools in the assessments of their teachers on the variable of pedagogical competences. Male students rated the teachers of both genders higher on the variable of pedagogical competences. Generally, female teachers were significantly higher rated on physical appearance by the both male and female students. No significant differences between students were found on all the other teachers' competences variables. Also, male and female teachers did not receive different ratings by their students on all the others variables. There has been a significant effect of the interaction between students-teachers gender on the values of communication and empathy and physical appearance of teachers. In the first case it was a negative interaction. Thus, male students rated higher female teachers on communicating and empathy and female students rated male teachers higher on this variable. The interaction related to the values of physical appearance was positive. Although the male students rated female teachers on this variable than male teachers, these differences had greater values within the group of

female students. The results indicate that there is a possibility that the students judgements on their teachers could be affected by gender related stereotypes as well as that the criteria for these judgements could be affected by feedbacks from their teachers, that are different for boys and for girls.

But, further research is necessary in order to test these assumptions. The research problem remains important even for further studies as possibility of the presence of gender related stereotypes among students affect their motivation to engage and even advance in physical activities conducted within school curricula.

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