Teaching Effectiveness and Physical Education: Data from systematic observation

Georgia Arampatzi¹, Pavlos Kyrgyridis², Kyriako Emmanouilidou³, Viselike Derri⁴

^{1,2,3,4} Democritus University of Thrace, Department of Physical Education and Sport Science, Komotini, Greece

Abstract.

The purpose of the present study, which was part of a research project entitled “Development, testing and implementation of systematic observation/assessment tools for the teaching effectiveness of physical education teachers”, was to evaluate the elementary physical educators’ teaching practices and to examine the possible influence of teacher’s gender and school grade on them. The teaching practices of 40 PE teachers (19 males and 21 females) were observed and evaluated via the general assessment framework of the Presidential Decree (P.D.) 152/2013; a rubric that the Greek Ministry of Education released for the assessment of all school teachers. The P.D 152/2013 was adapted, clarified and tested for the PE subject and consists of three categories, seven criteria and 26 indicators of teaching effectiveness, described on four performance levels (Incomplete, Sufficient, Very Good, Excellent). Multivariate analysis of variance revealed significant main effects a) of teacher gender on the criterion “Interpersonal relationships and expectations” in favour of males, and b) of teaching grade on the criteria “Interpersonal relationships and expectations”, “Classroom organization” and “Instructional activities and Educational materials” where participants appeared more effective in upper grades. It seems that the teacher gender and the school grade play an important role on different factors of effective teaching in PE and should be taken into account in the development and implementation of teacher training programs. This research was implemented through the Operational Program "Human Resources Development, Education and Lifelong Learning" and is co-financed by the European Union (European Social Fund) and Greek national funds.

Keywords: assessment, elementary school, teacher effectiveness, teacher gender

1. Introduction

Physical Education is an essential school subject with great contribution to the learners' whole development and lifetime wellbeing. Teachers are a significant predictor of effectiveness in the educational process, so the assessment of their teaching behaviours and the variables which influence them are of great importance for educational research [1- 3].

Since the effectiveness of education is very much dependent on the effectiveness of the teachers, many studies have focused on the various factors that can influence the teaching [4]. Among these factors, gender occupies an important position in teaching effectiveness. However, recent studies on the relationship between teachers' effectiveness and gender reported mixed results [4-5]. A number of studies revealed that the gender of teacher has no influence on teaching effectiveness [6-8] and many others that the gender affects it significantly. Specifically, females appeared to be more effective teachers than males [9-10]. In addition, females performed better than males in terms of discipline, student assessment [11] and teaching strategies [12]. Researchers also found that the female teachers were more supportive, encouraged more student participation [13] and peer collaboration [14], adopted flexible teaching methods [15] and organized and managed the classroom in a way that keeps their relationships with students intact [16]. On the other hand, male teachers were reported to exercise greater control [13, 16], focus more on group work [16] and use a task oriented teaching style [16-17]. In another research [19] male teachers outperformed females in feedback, in demonstration of quality elements of skills, and in most effective organization of lesson time.

In the educational process, the school grade is another factor that influences the teaching effectiveness due to the diversity of the teaching content. In early grades, for example, fundamental movement skills and movement creativity, cognitive concepts, fitness aspects and fundamental social skills and behaviours should be taught. In contrast, in the upper grades, the learning of sport skills, their execution in real playing conditions, the understanding and the implementation of sport regulations and complex social skills are among the teaching objectives [20-21].

Given that the recent studies about the relationship between teachers' effectiveness and gender reported conflicting results and taking into account the remarkable diversity of teaching content between early and upper grades, the purpose of the present study was to evaluate the elementary physical educators' teaching practices and to examine the possible influence of teacher's gender and school grade on them.

2. Methods

Participants and procedure

Forty elementary Physical Education Teachers (PETs) (19 males and 21 females) participated in this study. Each one was observed live by two experienced evaluators in two lessons, one in

an early (1st-3rd) and one in an upper (4th-6th) grade. A total of 80 lessons (40 in early and 40 in upper elementary grades) were analyzed in teaching episodes and were assessed via the rubric of the General Assessment Framework Presidential Decree (P.D.) 152/2013.

Evaluation Instrument

The teaching practices of the participating PETs were evaluated with the rubric of P.D.152/2013, a general formative assessment framework designed to evaluate the Greek teachers' performance in all school subjects. This evaluation instrument was adapted to Physical Education (PE) subject and its validity and reliability were examined [22]. The adapted tool uses a form of a 4-level rubric with step-by-step, additive, upgrade mode descriptors to define the levels of each indicator (1=Incomplete, 2=Sufficient, 3=Very Good, 4=Excellent) and consists of three categories, seven criteria and 26 indicators of teaching effectiveness:

Category I: Educational Environment

1. (IR) *Interpersonal relationships and expectations (4 indicators)*
2. (CO) *Classroom organization (4 indicators)*

Category II: Planning and Preparation of Teaching

3. (PSC) *Degree of perception of students' capabilities and needs (3 indicators)*

Category III: Implementation of Teaching and Student Assessment

4. (SP) *Students' preparation for the instruction (3 indicators)*
5. (IA) *Instructional activities and educational materials (5 indicators)*
6. (PS) *Participation of students in the learning process (4 indicators)*
7. (CNK) *Consolidation of new knowledge and students' assessment (3 indicators)*

3. Results

A Multivariate Analysis of Variance (MANOVA 2X7) was used for the data analysis to determine statistically significant differences in the performance of PETs by gender and grade. The teacher gender and the school grade were the independent variables while the dependent variables were the seven criteria: 1. (IR) "Interpersonal relationships and expectations", 2. (CO) "Classroom organization", 3. (PSC) "Degree of perception of students' capabilities and needs", 4. (SP) "Students' preparation for the instruction", 5. (IA) "Instructional activities and educational materials", 6. (PS) "Participation of students in learning process", 7. (CNK) "Consolidation of new knowledge and students' assessment".

No statistically significant "gender" and "class" interaction was observed from the analysis. However, the subsequent analysis of variance revealed statistically significant main effect of the factors "gender" (Wilk's $\Lambda=.66$, $F_{(7,162)} = 6.71$, $p<.05$) and "grade" (Wilk's $\Lambda=.89$, $F_{(7,162)} = 11.9$, $p<.05$).

According to single-variable tests, the influence of "gender" was statistically significant in the variable (IR) "Interpersonal relationships and expectations" $F_{(1,168)} = 10.2$, $p<.05$, $\eta^2=.06$ while the influence of grade was statistically significant in the variables: a) (IR) "Interpersonal relationships and expectations", $F_{(1,168)} = 66.2$, $p<.05$, $\eta^2=.28$, b) (CO) "Classroom organization", $F_{(1,168)} = 18.3$, $p<.05$, $\eta^2=.09$ and c) (IA) "Instructional activities and Educational materials", $F_{(1,168)} = 24.3$, $p<.05$, $\eta^2=.12$.

The results revealed that in terms of the factor “gender” the male PETs showed higher values in the variable (IR) “Interpersonal relationships and expectations” ($M=1.86$, $SD=.49$) compared to the female PETs ($M=1.67$, $SD=.39$) (Figure1).

Figure 1: Mean differences by teacher gender in the seven criteria of the P.D. 152/2013

In terms of the factor grade, the participated PETs achieved higher scores in upper grades in the variables (IR) “Interpersonal relationships and expectations” ($M=1.96$, $SD=.43$), (CO) “Classroom organization” ($M=1.77$, $SD=.60$) and (IA) “Instructional activities and educational materials” ($M=2.14$, $SD=.34$) in relation to their performance in early grades in the variables (IR) Interpersonal relationships and expectations ($M=1.52$, $SD=.32$), (CO) Classroom organization ($M=1.36$, $SD=.64$) and (IA) Instructional activities and Educational materials ($M=1.88$, $SD=.36$) respectively (Figure 2).

Figure 2: Mean differences by school grade in the seven criteria of P.D. 152/2013

4. Conclusion

Teachers play the greatest role in the effectiveness of educational process, so the assessment of their teaching behaviours and the variables which influence them are of great importance for educational research [1-3]. According to the literature, the gender of the teacher and the school grade are among the variables that influence the teaching effectiveness while researches' results were mixed [4-5].

The results of the present study revealed that teacher gender affects teaching effectiveness in terms of "Interpersonal relationships and expectations" in favour of males. This reflects that the participating male teachers interacted with their students and encouraged the interaction among students in order to create a positive learning environment, in which there were high expectations and all students felt valued and safe. This finding is consistent with previous investigations which found that male teachers gave more feedback [19] and focused more on group work [16] compared to the female teachers. However, the above finding is in contrast with others studies [5, 13-14] which showed that female teachers were more supportive, encouraged more student participation [13] and peer collaboration [14] and adopted flexible teaching methods [15].

In addition, the results of the present study revealed that the school grade influences the teaching effectiveness because the participating PETs achieved higher scores in upper grades in the variables of "Interpersonal relationships and expectations", "Instructional activities and Educational materials" and "Classroom organization". Specifically, high performance in the variables "Interpersonal relationships and expectations" and "Instructional activities and educational materials" is probably related to the teaching objectives of the upper grades which include learning sport skills, their execution in real playing conditions and the understanding and the implementation of sport regulations and complex social skills [20-21]. Indeed, the participating PETs during the sports game centered lessons encouraged and motivated all the students to participate and observed and gave appropriate feedback to all of them; they provided opportunities to students to interact, to disagree, to help each other and to cooperate. Also, the higher values in the variable "Classroom organization" is probably associated with the need to be establish and teach behaviour rules with well-defined consequences and to use systematically efficient routines and procedures for the smooth operation of the classroom and the maximization of instructional time during a sports game centered lesson.

In conclusion, given that the teacher gender and the school grade influence the teaching effectiveness, they should be taken into account in the development and implementation of teacher training programs.

Acknowledgment

This research was implemented through the Operational Program "Human Resources Development, Education and Lifelong Learning" and is co-financed by the European Union (European Social Fund) and Greek national funds.

References

- [1] Rink, J. (2013). Measuring Teacher Effectiveness in Physical Education. *Research Quarterly for Exercise and Sport*, 84, 407-418.
- [2] Derri V., Vasiliadou, O., & Kioumourtzoglou, E. (2015). The effects of a short-term professional development program on physical education teachers' behaviour and students' engagement in learning. *European Journal of Teacher Education*. <http://dx.doi.org/10.1080/02619768.2014.947024>
- [3] Kyrgiridis, P., Derri, V., Emmanouilidou, K., Chlapoutaki, E., & Kioumourtzoglou, E. (2014). Development of a Questionnaire for Self-Evaluation of Teacher Effectiveness in Physical Education (SETEQ-PE). *Measurement in Physical Education and Exercise Science*, 18, 73-90.
- [4] Islahi, F. & Nasreen (2013). Who Make Effective Teachers, Men or Women? An Indian Perspective. *Universal Journal of Educational Research* 1(4), 285-293.
- [5] Wood, T.D. (2012). Teacher Perceptions of Gender-Based Differences among Elementary School Teachers. *International Electronic Journal of Elementary Education*, 4(2), 317-345
- [6] Mohanty, S.K. & Parida, A.K. (2010). Teacher Effectiveness of Secondary School Teachers in Relation to their Self Concept, Gender and type of institutions- A Study, *MERI-Journal of education*, 5(1).
- [7] Ritu & Singh, A. (2012). A Study of Teaching Effectiveness of Secondary School Teachers in Relation to their Demographic Variables, *International Journal of Innovative Research & Development*, 1(6), 97-107.
- [8] Baraiya, N. & Baraiya, N.C. (2013). The Relationship between High School Teachers' Quality and Students Achievement, *International Journal Of Humanities And Social Science Invention*, 2(9), 50-54.
- [9] Surajit Mahanta, Professional Competence VIS-À-VIS (2012). Variations of Gender and Locality, *International Journal of Scientific and Research Publications*, 2(12), 1-3.
- [10] Luschei, T. F. (2012). The Effectiveness and Distribution of Male Primary Teachers: Evidence from Two Mexican States, *International Journal of Educational Development*, 32(1), 145-154.
- [11] Kulinna, P.H., Mccaughtry, N., Cothran, D. & Martin, J. (2006). What do urban/inner-city physical education teachers teach? A contextual analysis of one elementary/primary school district. (Physical Education and Sport Pedagogy, Ed.) 11(1), 45-68.
- [12] Horf, D. & Hatzichristou, C. (1999). Teacher gender-related influences in Greek schools. *British Journal of Educational Psychology*, 69(1), 1-18.

- [13] Wood, T. D. (2012). Teacher Perceptions of Gender-Based Differences among Elementary School Teachers. *International Electronic Journal of Elementary Education*, 4(2), 317-345.
- [14] Rashidi, N. & Naderi, S. (2012). The Effect of Gender on the Patterns of Classroom Interaction. *Education*, 2(3), 30-36.
- [15] Chen, Y.M. (2000). *Feminization in writing pedagogy: A study of teacher's gender at EFL university composition classrooms*. Research Report, Taiwan: National Chung Cheng University. (ERIC Document Reproduction Service NO. ED462847).
- [16] Lacey, C.H., Saleh, A. & Gorman R. (1998). *Teaching Nine To Five: A Study Of The Teaching Styles Of Male And Female Professors*. Paper presented at the Annual Women in Education Conference, Lincoln, Nebraska, October 11-12. (Eric No. ED442334).
- [17] Statham, A., Richardson, L. & Cook, J. A. (1991). *Gender and university teaching: A negotiated difference*. Albany, State University of New York Press.
- [18] Chudgar, A. & Sankar, V. (2008). The relationship between teacher gender and student achievement: Evidence from five Indian states. *A Journal of Comparative Education*, 38(5), 627-642.
- [19] Vasiliadou, O., Emmanouilidou, K. & Derri, V. (2004). *The influence of the educators' gender in teaching physical education*. Proceedings 2004 Pre-Olympic Congress, 428, 6-11. Thessaloniki.
- [20] Derri, V. (2007). *Physical Education at the beginning of the 21st Century. Goals, Objectives and Pursuits*, Thessaloniki: Christodoulidi.
- [21] Ministry of Lifelong Learning and Religion Education (2011). *From Today in the New School with First the Student*. Recovery date: 21-8-2012.
<http://www.minedu.gov.gr/apo-tosimera-sto-neo-sxoleio-me-prota-ton-mathiti.html>
- [22] Arampatzi, G., Derri, V., Emmanouilidou, K. & Kyrgyridis, P. (2019). Adaptation and Examination of the Greek General Formative Assessment Framework P.D. 152/2013 in Physical Education Teachers. *Journal of Advances in Sports and Physical Education*, 2(8), 162-170. DOI: 10.36348/JASPE.2019.v02i08.001