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### Abstract

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## **Introduction**

Studies in physical education have indicated that, students' interest, mastery goals and intrinsic motivation decline with age (Digelidis & Papaioannou, 1999). The present study aimed to expand the results of these studies by examining the reasons of students' participation in physical education, using the self-determination theory as framework (Deci & Ryan, 2004). The purpose of the present study was to examine grade and gender differences in students' motivational regulations for participating in school physical education.

## **Method**

Participants were 1402 students, 681 boys and 704 girls (17 students were excluded as they didn't refer grade or gender), of 5th (n=358), 7th (n=348), 9th (n=346) and 11th grade (n=333), which participated in 72 regular physical education classes from 33 schools of 11 cities in central and north Greece. The motivational regulation questionnaire (Goudas, Dermitzaki & Bagiatis, 2000) with the addition of the amotivation subscale (Goudas, 1994) was used for the evaluation of students' motivational regulations.

The research design included two independent variables: the students' grade with four levels (5th, 7th, 9th and 11th) and the students' gender, while students' score in motivational regulation served as depended variables. The questionnaire was administrated in the middle of the school year; after permission was obtained by the schools head teachers and the physical education teachers. Students were given the appropriate instructions, assured about the confidentiality of their answers and completed voluntary and anonymously the questionnaire during the physical education lesson. Grade and gender differences in students' motivational regulations were examined through four separate, for each dependent variable, analyses of variance.

## **Results**

The internal consistency of the questionnaire's subscales was satisfactory (Cronbach's  $\alpha$  ranged from .65 to .83) except for the low internal consistency of the introjected subscale (.58) which, for this reason, was not included in the rest analysis. For intrinsic motivation, the 2x2 ANOVA revealed a significant main effect for grade,  $F(3, 1377) = 72.73, p < .001, \eta^2 = .14$  and a significant main effect for gender,  $F(1, 1377) = 12.09, p < .001, \eta^2 = .01$ . For identified regulation, the 2x2 ANOVA revealed a significant main effect for grade,  $F(3, 1377) = 85.01, p < .001, \eta^2 = .16$ , and a significant main effect for gender,  $F(1, 1377) = 11.64, p < .001, \eta^2 = .01$ . Post hoc comparisons with Bonferoni test revealed a significant reduction in intrinsic motivation and in identified regulation from 5th to 7th, from

7th to 9th and from 9th to 11th grade, while boys, independently of grade, referred higher levels of intrinsic motivation and identified regulation compared with girls. For external regulation, the 2x2 ANOVA revealed a significant grade and gender interaction,  $F(3, 1377) = 5.57, p < .001, \eta^2 = .01$ , and the simple main effects analysis revealed that boys compared with girls referred higher levels of external regulation in 5th grade. For amotivation, the 2x2 ANOVA revealed a significant grade and gender interaction,  $F(3, 1377) = 5.75, p < .001, \eta^2 = .01$ , and the simple main effects analysis revealed that boys compared with girls referred higher levels of amotivation in 5th grade, while the opposite was the case in the 11th grade.

### **Discussion**

The results revealed that students' intrinsic motivation and identified regulation for both gender, decline with age, while external regulation and amotivation remained relative stable across grades. Moreover, the gender differences that were found were low according to calculated effect sizes. These results are in accordance with previous research examining similar motivational constructs in Greek physical education (Digelidis & Papaioannou, 1999) and indicated that students' motivation for participation in physical education decline with age.

Self-determination theory postulates that the satisfaction of students' basic need through the establishment of an autonomy supportive environment in physical education can enhance students' motivational regulations (Ryan & Deci, 2007). Recent studies in physical education setting (Hagger, et al., 2008; Lim & Wang, 2009) have provided empirical evidence for this notion. Both theory and research offer practical guidelines for enhancing students' motivational regulation for participating in physical education, including strategies for the establishment an autonomy supportive climate and the satisfaction of students' basic needs (e.g., providing students with a meaningful rationale, giving them responsibility and choices that enhance their feelings of volition, fostering personally-relevant goals and focusing in personal improvement).

### **Conclusion**

In conclusion, the results of the present study indicate that students' motivation for participating in physical education decline with age. Students' motivation for participating in physical education can be enhanced adopting the practical guidelines that self-determination theory provides, so as the physical education becomes more appealing, effective and useful for all students.

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