Cooperative games vs competitive games in Primary School Education: What effects do they have on schoolchildren motivation?

RUBÉN NAVARRO-PATÓN[1], JOSÉ EUGENIO RODRÍGUEZ-FERNÁNDEZ[1] , BEATRIZ OLIVEIRA - PEREIRA[2]

[1]*University of Santiago de Compostela, Spain*
[2]*University of Minho, Research Centre on Child Studies, Portugal*

ABSTRACT

As a school subject, the ultimate goal of Physical Education (PE) is to help schoolchildren to learn different concepts, skills and values. For this reason, it is important to understand student's motivation in PE learning process, and how different teaching strategies and methodologies influence children motivation. Then, the aim of this study was to assess the impact of two units (one of them based on cooperative games and the other one based on competitive games) on primary school student's motivation. The program involved the participation of 227 (114 males and 113 females) students belonging to fifth and sixth grade (M=9.79; DT=1.30) from state school in Galicia, Spain. The design was a quasi-experimental pre and post-test. The control group (CG) and Experimental Groups (Competitive Group -EG1- and Cooperative Group -EG2-) consisted of 61 (CG), 82 (EG1) and 84 (EG2) students, respectively. The Motivation Questionnaire in Physical Education for Primary Education (MQPE-PE) was used to measure the schoolchildren motivation. The results show that there are statistically significant differences in EG1 in IM p =.008); EM (p<.001) and in DEM (p=.020). In EG2 only these differences have been found in IM (p=.030) and in DEM (p=.034). Cooperative games caused significant improvements in IM while the opposite effect is observed in the competitive games participants; IM decreases and EM and DEM increases. **Keywords**: Self-Determined motivation; Physical education; Primary school education; Innovative strategies.

Corresponding author. *Facultad de Ciencias de la Educación-Campus Norte. Avda. Xoán XXII, s/n. 15872. Santiago de Compostela, Spain.*
E-mail: geno.rodriguez@usc.es
Supplementary Issue: Spring Conferences of Sports Science. International Seminar of Physical Education, Leisure and Health, 17-19 June 2019. Castelo Branco, Portugal.
JOURNAL OF HUMAN SPORT & EXERCISE ISSN 1988-5202

doi:10.14198/jhse.2019.14.Proc4.82

INTRODUCTION

The motivation in Physical Education (PE) classes is related to the commitment to practice physical activity and sports, with improvements in social relationships, cooperation, responsibility, or the learning of certain motor skills. Different studies focused on teaching-learning, such as the use of methodologies based on cooperation (Navarro-Patón, Basanta-Camiño, & Abelairas-Gómez, 2017) or competition (Navarro, Cons, & Eirín, 2018), show different influences on the motivation according to gender. The objective of this work was to analyse the effects of two Didactic Units (DU) of EF, one based on cooperative games and the other on competitive games, on intrinsic motivation (IM), external regulation (ER) and demotivation (DEM) in Primary School (PS) students.

MATERIAL AND METHODS

Participants

A longitudinal, descriptive, analytical and comparative relational study was carried out, involving 227 students (113 girls and 114 boys) of PS from 3 schools in Galicia (Spain), with an age range between 9 and 11 years old (M = 9.79, DT = 1.30). It is a sample for convenience, divided into 3 groups: the control (CG) and Experimental Groups (Competitive Group -EG1- and Cooperative Group -EG2-) consisted of 61 (CG), 82 (EG1) and 84 (EG2) students, respectively.

Measures

The Motivation Questionnaire in Physical Education for Primary Education (MQPE-PE) was applied (Leo, García-Fernández, Sánchez-Oliva, Pulido, & García-Calvo, 2016). It consists of 18 items on a Likert scale of 5 points, where the variables of IM, ER and DEM were analysed.

Procedures

In compliance with the provisions of the Declaration of Helsinki and with the informed consent of students, they completed the MQPE-PE at first (pre-test). Afterwards, the control group continued with the normal development of their Physical Education teacher's program, while with the Experimental Group 1 (EG1) students (competitive games) an UD was developed for 3 weeks (6 sessions) and, with Experimental Group 2 (EG2) an UD of cooperative games in the same time interval was applied.

Analysis

The quantitative variables are summarized in their mean and standard deviation (SD). A comparison of means (ANOVA) was made to analyse the previous differences between groups in the measurements of each of the variables. Parametric tests (t-Student) of related samples were used to observe the pre- and post-intervention differences in each of the groups and according to gender. The IBM SPSS Statistics v.20.0 Program was used, establishing a 95% confidence interval.

RESULTS

Pre-intervention analyses indicated that the groups were homogeneous with respect to IM (P = .667) (Control Group (M= 4.61; SD=.40); Experimental Group 1 (M= 4.58; SD=.65) ; Experimental Group 2 (M= 4.66; SD=.62), but not in terms of Extrinsic Motivation (p<.001) (Control Group (M=3.20; SD=1.11); Experimental Group 1 (M=1.73; SD=1.10); Experimental Group 2 (M= 3.53; SD=1.27), or in the Demotivation (p=.001) (Control Group (M= 1.18; SD=.73); Experimental Group 1 (M=1.10; SD=.22); Experimental Group 2 (M=1.45; SD=.81). Regarding the analysis of related samples in each group globally, no statistically significant

differences were observed in the control group in any of the dimensions studied, IM (p=.965); EM (p=.391) and DEM (p=.674); have been found in Experimental Group 1 in IM (t 83= 2.70; p=.008); EM (t 83 = -3.73; p<.001) and in DEM (t 83 = -2.36; p = .020), while in Experimental Group 2 these differences were found only in IM (t 81 = -2.21; p=.030) and in DEM (t 81 = 2.15; p=.034). Regarding the analysis of related samples in each group according to gender and analysing the Experimental Groups, statistically significant differences were observed in Experimental Group 1 in children in IM (t 47 = 2.39; p=.021) and EM (t 47 = -2.80; p=.007) and in girls in EM (t 35 = -2.60; p=.013) and DEM (t 35 = -2,52; p=.016), whereas in Experimental Group 2 only these differences were found in girls in IM (t 33 = -2.65; p=.012) and in EM (t 33 = -2.09; p=.044).

DISCUSSION

The results show positive effects of cooperative methodology used on the EG2, increasing IM significantly and decreasing the DEM, as in studies of Navarro-Patón et al. (2017), while in EG1, where competitive games have been applied, EM and DEM have increased significantly and IM has decreased, as in studies of Navarro et al. (2018).

Depending on gender, after the application of cooperative games, IM and EM have increased significantly in girls, but not in boys (Navarro-Patón et al., 2017), which may be due to the fact that cooperative games need the participation of all for the achievement of the final group objective (Navarro-Patón & Basanta-Camiño, 2015). With competitive games, in girls, the EM and the DEM increases, and in boys the IM and the EM decreases (Navarro et al., 2018).

CONCLUSIONS

Cooperative games provoke significant improvements in IM, slightly higher in girls (the DEM decreases, and is lower in girls.) With the competitive games the opposite effect is observed, decreasing the IM in a general way and increasing the EM and the DEM, with higher incidence in girls.

REFERENCES

Leo, F.M., García-Fernández, J.M., Sánchez-Oliva, D., Pulido, J.J., & García-Calvo, T.M. (2016). Validación del cuestionario de motivación en Educación Física en educación primaria (CMEF-EP). Universitas Psychologica, 15 (1), 315-326. https://doi.org/10.11144/javeriana.upsy15-1.vmpe

Navarro-Patón, R. & Basanta-Camiño, S. (2015). Juegos y actividades cooperativas para educación física, deporte escolar y campamentos juveniles. En V. Arufe (Ed.), Actas del V congreso mundial del deporte escolar, educación física y psicomotricidad. Sportis: A Coruña. https://doi.org/10.17979/sportis.2016.2.3.1783

Navarro-Patón, R., Basanta-Camiño, S., & Abelairas-Gómez, C. (2017). Los juegos cooperativos: incidencia en la motivación, necesidades psicológicas básicas y disfrute en Educación Primaria. Sportis Scientific Technical Journal, 11 (3), 589-604. https://doi.org/10.17979/sportis.2017.3.3.2088

Navarro, R., Cons, M., & Eirín, R. (2018). Efecto de una unidad didáctica basada en juegos competitivos en la motivación, necesidades psicológicas básicas y disfrute en alumnado de Educación Primaria. Sportis Scientific Technical Journal, 4 (1), 111-125. https://doi.org/10.17979/sportis.2018.4.1.2900