

Relation between motivation and enjoyment in physical education classes in children from 10 to 12 years old

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ABSTRACT

There are serious warnings of sedentary lifestyles among children. Therefore, it is necessary to take measures from school, especially in Physical Education (PE) classes. One way to do this, it is paying attention to the motivational climate and enjoyment in PE classes because these two factors are related to the intention to be physically active by students. This research's aim was to evaluate multidimensional motivation and enjoyment in PE classes and relations between these dimensions. The sample included 315 Primary Education Galician students (Spain), 145 boys (46%) and 170 girls (54%), with an age range between 10 and 12 years ($M=10.92$, $SD=0.792$). Data were collected by means of two questionnaires. One of them was the 'Physical Education Questionnaire in Primary Education' (CMEF-EP), and the other one was 'Physical Activity Enjoyment Scale' (PACES). The following results were obtained: Intrinsic Motivation (IM) ($M=5.12$; $SD=1.14$), External Regulation (ER) ($M=3.61$; $SD=1.63$), Amotivation (AM) ($M=1.93$; $SD=1.46$), Enjoyment (ENJ) ($M=4.51$; $SD=0.55$). Regression analysis shows that the IM can predict 42.1% of ENJ in PE classes. Therefore, students' intrinsic motivation is a solid framework for enjoyment in PE lessons. Consequently, it should be taken into account by Primary Education teachers in their classrooms. They should take appropriate measures to encourage intrinsic motivation: methodologies of inquiry, positive feedback, variety of tasks and materials, flexible grouping and meaningful assessment. **Keywords:** Intrinsic and extrinsic motivation, Enjoyment, Physical education, Primary education.

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INTRODUCTION

The research of the motivation and enjoyment in the PE class has a great interest due to the relation between intrinsic motivation, enjoyment and intention of being physically active for students (García-Calvo, Sánchez, Leo, Sánchez, and Amado 2011, 2012; Moreno and Martínez 2006; Moreno, Zomeño, Marín, Cervelló, and Ruiz 2009).

Moreover, from different Mass Media, it is warned an excess of sedentary lifestyle in the population in general, particularly between youth. This lifestyle leads to different and serious health problems, even it can cause premature death (Aranceta 2008; Ministerio de Sanidad, Servicios Sociales e Igualdad and Agencia Española de Seguridad Alimentaria and Nutrición 2013; OMS 2004, 2010).

School is the ideal place to try to prevent that children attain this situation, especially from the PE subject. For this reason, from schools it must be promoted the habit of practising physical activity between students, being important for this the study of the motivation and enjoyment in the setting of the Physical Education subject (Granero-Gallegos, Baena-Extremera, Sánchez-Fuentes, and Martínez-Molina 2014).

The self-determination theory (SDT), established by Deci and Ryan (1985), tries to demonstrate the fact that motivation has positive influence in the practise of physical activity. In this way, they defend that human beings can be proactive and committed or, alternately, passives and alienated (Ryan and Deci 2000, p. 68). The figure of the teacher has a lot to do with this, because, if the context that is fomented is suitable, developing motivational strategies, it will be facilitated the schoolchildren needs' satisfaction (Navarro, Rodríguez, and Eirin, 2016; Sánchez-Oliva, Viladrich, Amado, González-Ponce and García-Calvo 2014). There is no doubt about the importance of the role of the teacher or that the motivation is a predictive variable of the students' self-determination in the PE class (Gómez-López, Baena-Extremera, Granero-Gallegos, Castañón-Rubio and Abraldes 2015).

In this way, the SDT is based on dialectical meta-theory that assumes people are active organisms with innate tendencies to psychological growth and development, making an effort to dominate the continuous challenges and integrate their experiences coherently with their will (Moreno and Martínez 2006, p. 40).

Ryan and Deci (2000) clarify that although the motivation is usually considered as a singular construct. People can be driven to act by different factors or experiences. Ryan and Deci (2000) and Fidan (1996), explain that motivation is one of the strongest sources of power determining the direction, degree and consistency of student behaviours.

Into the SDT, some mini-theories exist with their different types and factors of motivation (Deci and Ryan 1985). It may be said that there are two sources of motivation; namely external motivation and internal motivation. External motivation involves working for the purpose of appreciation and reward from an external source (Pettifor, 1999, p. 64). Internal Motivation is one in which engaging in activities is due to the feelings of enjoyment, pleasure, interest and satisfaction (Vallerand and Rosseau, 2001). In this way, the person who has the highest degree of self-determination is intrinsically motivated, which means to have a commitment with the sports practice, thanks to the pleasure and the enjoyment that he or she gets with it, turning it into an objective in itself (Baena-Extremera et al. 2014, p. 122). Finally, amotivation represents the absence of motivation, either intrinsic or extrinsic (Pulido, Sánchez-Oliva, Amado, González-Ponce and Sánchez-Miguel, 2014 p. 136).

Besides motivation, another factor that has influence in a meaningful way in the children's practice of physical activity, specifically in PE classes is enjoyment, according to some researches which demonstrate that the higher is the degree of enjoyment, the higher is the maintenance commitment to the physical activity (Barreal-López, Navarro-Patón, and Basanta-Camiño, 2015; Prochaska et al. 2003; Sallis, Prochaska, and Taylor 2000; Wallhead and Buckworth 2004; Yli-Piipari et al. 2009, cited in Gråstén, Jaakkola, Liukkonen, Watt and Yli-Piipari 2012).

In this way, it is considered that the enjoyment is related with the motivation, having as conclusion that both factors have influence in the degree of participation regarding exercise and physical activity in PE classes (Navarro et al., 2016; Hashim, Grove and Whipp 2008; Wallhead and Buckworth 2004).

The enjoyment at the PE classes also is related to the way in which students perceive their physical competence (Navarro et al., 2016). This factor is related how students think about that success should be (Carrol and Loumidis 2001), for that, enjoyment turns into a multidimensional factor and it is related to the enthusiasm and the perceptions of the own competence to a specific activity (in this case, in PE Classes) (Hashim et al. 2008).

All of this confirms that enjoyment is a key factor. It can act as a valuable predictor of two situations: on the one hand, it can predict the will and the intention of beginning a continued physical-sports activity; on the other hand, it can foresee if one person will maintain the physical activity that has already begun. In this way, the intrinsic motivation has as result the enjoyment and participation in an activity for achieving the increase or maintenance of the future participation in that habit (Barreal et al., 2015; Capdevila, Niñerola, and Pintanel 2004; Garita 2006; Gómez-Mármol 2013). Moreover, some researchers have discovered that the students who present a high degree of enjoyment at PE classes, were who had more confidence in their own physical competence (Barreal et al., 2015; Ferrer-Caja and Weiss 2000).

Therefore, in this research the different dimensions of the motivation are evaluated, as well as the enjoyment, in addition to appreciate in which degree the intrinsic motivation, the external regulation, the amotivation and the enjoyment are related between them, referring always to these factors in the students from Primary School.

METHOD

Sample

Three hundred and fifteen pupils (315), (boys, n=145 (46%); girls, n=170 (54%); from 10 to 12 years old (M=10.92; SD=0.792), studying at primary schools in Galicia (Spain) participated in this research during 2017-2018 school year.

Questionnaires

Two different questionnaires were used to obtain data:

- Physical Education Questionnaire in Primary Education (CMEF-EP, Leo, García-Fernández, Sánchez-Oliva, Pulido, and García-Calvo, 2016) was used. It is composed of 18 items preceded by the statement 'I participate in PE classes. The items are established according to a Likert-type scale (from 1, 'totally disagree', to 5, 'totally agree'). The scale has the following five factors: intrinsic motivation (for instance: 'because Physical Education is enjoyable'), identified regulation ('Because I can learn skills that I could use in other areas of my life'), introjected regulation ('Because I feel bad if I do not participate in the

activities'), external regulation ('Because I want the teacher to think that I am a good student') and amotivation ('but I do not understand why we should have PE'). This scale shows an internal consistency Cronbach alpha (α) = 0.792. The internal consistency by factors was the following: intrinsic motivation, (α) = 0.768; identified regulation, (α) = 0.712; introjected regulation, (α) = 0.701; external regulation, (α) = 0.709; and amotivation, (α) = 0.710. According to this, the factors that do not achieve a level of acceptable reliability (identified regulation and introjected regulation) were eliminated.

- Physical Activity Enjoyment Scale (PACES) (Moreno, González-Cutre, Martínez, Alonso, and López, 2008). It is the adaptation into Spanish and into the PE of the basic psychological needs scale of Molt, Dishman, Saunders, Dowda, Felton, and Pate (2001). It is formed by 16 items preceded by the statement 'When I am active'. The items are established according to a Likert-type scale, from 1 ('totally disagree'), to 5 ('totally agree'). It has an only factor, the enjoyment, with items such as 'I feel good'. This scale showed an internal consistency Cronbach alpha (α) = .882.

Procedure

In this study, a correlation methodology with a transversal design was applied. The study followed the American Psychological Association ethics guidelines regarding consent, confidentiality and anonymity of responses.

The first step of the research was the permission request to the educational competent bodies, as well as to the fathers, mothers and/or guardians of the participants. In this research only participated children that were authorised by hand for some of their legally responsible people.

The instruments detailed previously to measure the motivation and the degree of enjoyment in the PE classes, were used by the researchers in a Physical Education session.

It was provided a time of 15 minutes to answer each questionnaire (a total of 30 minutes), in addition to let a break time between both questionnaires, as well as offering a time of explanation and resolution of doubts before beginning.

At that time, it was made clear that it was not a test or an exam, as well as that there were not correct or wrong answers. In this way, it was tried that children answered without fear as honest as possible. The researchers also solved all the doubts that were appearing for the times of answer the questionnaire.

Data analysis

The SPSS 20.0 was used for statistical analysis of the data. Descriptive analysis was adopted to explain the relationship between variables age, gender, CMEF-EP and PACES Scale; however, before performing the factor analysis in order to obtain more reliable results, it was made the internal consistency (Cronbach alpha), and correlations (Pearson coefficient) between dimensions of the CMEF-EP Scale and the PACES Scale.

The quantitative variables are presented as mean \pm standard deviation. The t-test for independent groups was applied to compare the participant responses in terms of their gender. An ANOVA was applied to compare the participant responses in terms of their age. Afterwards, a linear regression was carried out to check what factors of CMEF-EP Scale could predict the enjoyment in the PE classes. The level of significance accepted was $p < 0.05$.

RESULTS

Descriptive statistics and bivariate correlations

The mean values, standard deviation of the responses given by the pupils and the correlations between different item are presented in Table 1.

In relation to the mean in each analysis, it is highlighted the high punctuation in intrinsic motivation and in enjoyment, in contrast to the external regulation and the amotivation.

The bivariate correlation results showed that internal motivation was high and positive associated with the enjoyment, but this variable was negatively associated with external motivation.

Table 1. Mean (M), Standard Deviation (SD) and correlations between the dimensions analysed of CMEF-EP and PACES Scale

Dimensions	M	SD	IM	ER	AM	ENJ
Intrinsic Motivation (IM)	5.12	1.14	-	-.060	.007	.652**
External Regulation (ER)	3.61	1.63	-	-	-.007	-.145**
Amotivation (AM)	1.93	1.46	-	-	-	.012
Enjoyment (ENJ)	4.51	0.55	-	-	-	-

Note: M = Mean; SD = Standard deviation;
 ** The correlation is significant to level .01 (bilateral).

Differences according to the variable of gender

The mean values of the responses given to each item between girls and boys are presented in Table 2. To analyse the relation of the results according to gender in the participants, it was carried out a t-test of independent samples.

In Table 2 it is evident that the mean values between girls and boys were similar in internal motivation, external motivation and enjoyment, but the mean values of amotivation were higher in boys than the girls ($p = .014$).

Table 2. T-test analysis on scale dimensions of the independent groups

Variables	Boys (n=145)		Girls (n=170)		t-value	p
	M	SD	M	SD		
Intrinsic Motivation	5.11	1.09	5.14	1.18	-0.238	.812
External Regulation	3.75	1.62	3.49	1.62	1.423	.156
Amotivation	2.15	1.72	1.74	1.16	2.466	.014
Enjoyment	4.52	0.49	4.59	0.60	0.114	.886

Note: M = Mean; SD = Standard deviation.

Differences according to the variable of age

The mean values of the responses given to each item, according age of the participants are presented in Table 2. To analyse the relation of the results according this variable in the participants, it was carried out an Analysis of Variance.

In Table 3 it shows that the mean values between age of the participants were similar in internal motivation between 10 and 12 years old but higher than the 11 years old.

Among the mean values in the items external motivation and enjoyment were similar between range from 10 to 12 years old.

The mean value of amotivation is higher in children 10 years old than the range from 11 to 12.

Table 3. Analysis of Variance according to age

Variables	10 years (n=111)		11years (n=116)		12 years (n=88)		F	p
	M	SD	M	SD	M	SD		
Internal Motivation	5.20	1.18	5.94	1.27	5.27	0.83	2.553	.079
External Regulation	3.69	1.73	3.68	1.59	3.40	1.55	0.970	.380
Amotivation	2.17	1.66	1.86	1.29	1.73	1.09	2.432	.090
Enjoyment	4.55	0.53	4.44	0.66	4.56	0.40	1.575	.209

Predictors of the degree of enjoyment in relation to the perceived competence, autonomy and relation with others

A Multiple regression analysis was made to know what variable of the CMEF-EP Scale, could predict the degree of enjoyment in the PE classes. The internal motivation, the external motivation and the amotivation, were included as independent variables.

The results obtained by the linear regression of consecutive steps showed that the bigger power of F happened when it was only used as predictor variable the intrinsic motivation, so the results for this sample were the following: A = 2.57 ($t_{313} = 19.77, p < .001$); B $_{\text{intrinsic motivation}} = 0.31$ ($t_{313} = 15.20, p < .001$); $R^2 = 0.425$; standard error of the estimate = 0.421. And the global significance of the regression equation: $F_{1, 313} = 231.16; p < .001$.

DISCUSSION

The first objective of this research was to evaluate intrinsic motivation, external motivation, amotivation and enjoyment in PE classes in pupils of Primary Education. The findings of this research indicated that the students from 10 to 12 years old, have a high intrinsic motivation. This is related with the participation in the PE classes because this one is based on the pleasure of participating in the activity, the fun and the satisfaction of the activity itself (Moreno, Hernández, and González-Cutre 2009; Navarro et al., 2016) and it is intimately related to enjoyment (Barreal et al., 2015; Ednie, and Stibor, 2017) and the adherence to sport practice (Ednie, and Stibor, 2017; Méndez-Giménez, Cecchini, Fernández-Río, and González 2012). In the mean values of external motivation variable, less punctuations were obtained, as much gender as from age, except in children of 10 years old, being slightly superior to the other age range (Castaño-López, Navarro-Patón, and Basanta-Camiño, 2015). Teachers have to be, therefore, role models, and the memory of their performance continues to offer progress, exemplary modelling and support motivation to their students throughout their students' entire lives (Gultekin and Acar, 2014, p.301).

Another objective was to establish relations between the different variables studied. It was deduced that intrinsic motivation of the participants is related positively to enjoyment, and that intrinsic motivation is negatively related to external motivation, and this with enjoyment. It is interesting that teachers keep this in

mind in their PE classes due to it can contribute to enjoyment and to increase the intentions of being physically active (Hein, Mүүr, and Koka 2004, Méndez-Giménez et al. 2012, cited in Cuevas, Contreras, Fernández, and González-Martí 2014).

Considering the aforementioned aspects, teachers must pay more attention to sports and physical activities for girls like in studies of Ednie, and Stibor (2017), Navarro-Patón, Basanta-Camiño, and Abelairas-Gómez (2017) or Trigo-Oroza, Navarro-Patón, and Rodríguez-Fernández (2016) – because boys have an obviously positive motivation – in order to get them strongly motivation (Rus, Radu, and Vanvu, 2016, p. 201).

In the same way, it was noticed that exists a significant correlation and, in this case, is negative or inverse between external motivation and enjoyment in PE classes.

Another significant issue is that observing the results in the ANOVA, it can be confirmed that don't appear significant differences in any of the four dimensions analysed. This happens in the analysis carried out according to gender, being this dimension higher in boys than in girls, as well as in relation to the age variable, being higher in the students of 10 years than in 11 and 12 years old students. On the other hand, this was expected because a negative correlation exists between this variable and the predominant intrinsic motivation in children of this research, opposite of what happens with the secondary level students according to the researches of Cecchini and collaborators (2012).

It was also set out the aim of verifying which variables of the CMEF-EP Scale predict the degree of enjoyment in PE classes, the results show that the internal motivation predicted greater enjoyment levels. The results revealed that pupils of Primary Education perceived that their enjoyment is greater when their intrinsic motivation is higher ($R^2 = 0.421$). This confirms the theory of Deci and Ryan (1985), in which it is suggested that more self-determined motivation is one of the factors that best predict the enjoyment (Moreno, Marcos, and Martínez-Galindo 2008). Moreover, the investigations carried out by authors such as Ntoumanis (2002), Standage, Duda, and Ntoumanis (2006) and Vlachopoulos and Karageorghis (2005) (cited in Moreno, Cervelló, Marcos, and Martín 2010), reveal that the students with a self-determined profile express a bigger enjoyment.

CONCLUSIONS

Achieving the aims set out in the research, intrinsic motivation, external motivation, amotivation and enjoyment in PE classes in Primary Education, pupils have been evaluated. It could be establishing a relation between these variables and verifying that the internal motivation variable predicted positively the degree of enjoyment in PE.

By this way, it is confirmed the existence of a high intrinsic motivation and enjoyment in the PE classes of the pupils between 10 to 12 years old. It should go into depth in what are the reasons in which this kind of motivation is produced, because Cechini et al. (2012) expose that Secondary Education students suffer more amotivation than Primary Education students. So, it is about figuring out the causes to happen this, in order to propose a solution to this problem and, in this way, to cause a bigger adherence to the sport practice. Therefore, we consider that the Education is of crucial importance in the construction of human personality, in the development of potentials, motivation, enjoyment in adaptation to society, in the development of new skills and especially in dealing with the problems everyone faces while progressing from childhood to adulthood (Gultekin and Acar, 2014, p. 301).

Noumatis (2005, cited in Cuevas et al. 2014, p. 23) proposed that if the student achieves a motivation to practice physical activity based on intrinsic arguments, probably in the future, he or she will achieve a high adherence to the practice of physical-sports activity.

According to Vallerand (1997), the motivation brings to different cognitive consequences in the students: the more positive ones (such as making efforts or persevere) are related to the intrinsic motivation, and the more negative ones (such as boredom) are produced by the external motivation.

For the PE teacher, this should be translated in taking opportune and necessary measures in the teaching-learning process, so that the intrinsic motivation can be favoured. This will be achieved, mainly, using investigation methodologies, a positive feedback information, the variety of tasks and materials, the flexible groups that encourage the interpersonal relationships, a meaningful assessment and the learning guarantee for every student (Moreno et al., 2012).

Finally, it is highlighted that this research shows some limitations which must be taken into account in order to be improved. These limitations are caused by the reduced sample size that obligate to take the results with caution of themselves.

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