

Original Article. Analysis of the satisfaction of those Basic Psychological Needs, motivation and enjoyment in Physical Education in elementary school

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Analysis of the satisfaction of those Basic Psychological Needs, motivation and enjoyment in Physical Education in elementary school

Análisis de la satisfacción de las necesidades psicológicas básicas, motivación y disfrute en Educación Física en Primaria

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Abstract

The aim of this work is to study the degree of satisfaction of basic psychological needs, motivation and enjoyment in the Physical Education classes, with students of Primary Education of 5th and 6th, analyzing relations between them and depending on the variables of sex and age. With a sample of 183 participants (77 boys and 106 girls), three questionnaires were applied: the Basic Psychological Needs Scale (BPNES), the scale of the Perceived Locus of Causality (PLOC Scale) in Physical Education and the scale of the enjoyment in physical activity (PACES). The results show us that the participants have high levels in relation to the satisfaction of their basic psychological needs, high values in motivational level and the degree of enjoyment in Physical Education classes, not showing significant differences in relation to the age and sex of the participants. The role played by the teacher is essential, where the own formation, his implication in the educational process and the transmission of values associated with physical education and sport, will motivate students to greater involvement, enjoyment and adherence to sports practice, even outside of school.

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Keywords

Physical Education; Primary Education; Basic Psychological Needs; motivation; enjoyment.

Resumen

Este trabajo tiene como objetivo estudiar el grado de satisfacción de las necesidades psicológicas básicas, motivación y disfrute en las clases de Educación Física que poseen los escolares de Educación Primaria de 5º y 6º, analizando las relaciones entre ellas y en función de las variables de sexo y edad. Con una muestra de 183 participantes (77 niños y 106 niñas), se aplicaron tres cuestionarios: la Escala de Medición de las Necesidades Psicológicas Básicas (BPNES), la Escala del Locus Percibido de Causalidad en Educación Física (PLOC Scale) y la Escala de medida del disfrute en la actividad física (PACES). Los resultados reflejan que los participantes tienen altos niveles en relación a la satisfacción de sus Necesidades Psicológicas básicas, altos valores a nivel motivacional y del grado de disfrute en las clases de Educación Física, no apreciándose diferencias significativas en relación a la edad y sexo de los participantes. El papel que desempeña el docente es esencial, donde la propia formación, su implicación en el proceso educativo y la transmisión de valores asociados a la Educación Física y el deporte, motivarán al alumnado a una mayor participación, disfrute y adherencia a la práctica deportiva, incluso más allá del ámbito escolar.

Palabras clave

Educación Física; Educación Primaria; Necesidades Psicológicas Básicas; motivación; disfrute.

1. Introduction.

Physical Education (PE) is considered an excellent way to promote physical activity and a healthy lifestyle among girls and boys in order to make them be concerned about how important it will be for their grown-up life. This is shown in the Organic Law 8/2013, December 9th, in order to Improve Educative Quality (LOMCE) (B.O.E nº 295). To do so, it is important to know which are the influence elements and also the reasons why a person keeps her or his activity levels (Barreal-López, Navarro-Patón y Basanta-Camiño, 2015).

While searching, motivation, self-government, skills and the interaction with other people, were considered, and the most important theoretical variable used for the recent times was the Self-determination Theory (TAD) Deci and Ryan (1985), in which enjoyment is also kept in mind.

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Talking within the academic Physical Education, the Deci and Ryan (1985) TAD was used by Soini, Liukkonen, Jaakkola, Leskinen and Rantanen (2007) and Yli-Piipari (2011), who concluded that if basic psychological needs are satisfied, the motivation and therefore, the enjoyment during PE lessons, increases (Chen, 2001; Ntoumanis, Pensgaard, Martin and Pipe, 2004; Yli-Piipari, 2011), but if these three basic psychological needs are not satisfied, which increases among pupils is demotivation (Moreno, Hernández, and González-Cutre, 2009) and, accordingly, the enjoyment level is frustrated (Chen, 2001; Ntoumanis et al., 2004; Yli-Piipari, 2011).

This way, Eliot and Dweck (2005), based on the Deci's and Ryan's (1985) TAD, argue that self-government and skills are the most important elements in which a person looks for stimulation, therefore, carries out activities which involve challenges for them (Sánchez-Oliva, Leo, Amado, Cuevas and García-Calvo, 2013) and also, that, intrinsic motivation, it is also held when the person feels able and autonomous (Moreno-Murcia, Zomeño, Marín, Ruiz and Cervelló, 2013), finding researches which show that pupils during their last PE grades, showed a good satisfaction level regarding their basic psychological needs, although some of these three needs reached higher values than others (Castaño-López, Navarro-Patón and Basanta-Camiño, 2016).

On the other hand, the level of enjoyment is considered an important element, underlying during PE lessons (Chen, 2001; Ntoumanis et al., 2004; Yli-Piipari, 2011) mainly among Primary Education students (Barreal-López et al., 2015). This way, enjoyment is considered to be related to motivation, concluding that both elements influence together on the participation rate regarding exercise and physical activity, and, therefore, on academic PE (Hashim, Grove and Whipp, 2008; Wallhead and Buckworth, 2004,).

Also, enjoyment during PE classes is related to how the student perceives his or her physical competence, that is to say, how he or her thinks success should be (Carrol and Loumidis, 2001) and in addition, it is related more to the male gender than to the female gender (Moreno-Murcia, Sicilia, Cervelló, Huéscar y Dumitru, 2011). Therefore, enjoyment

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is a multidimensional element related with enthusiasm and perception of self-competence regarding a concrete physical activity (PE in this case) (Hashim et al., 2008).

From what it has been said, and with the interest of analyzing the relevant elements considered by the scientific literature between the satisfaction of the basic psychological needs, motivation, enjoyment, healthy lifestyle and academic PE, our research goal will be to evaluate the satisfaction of these basic psychological needs, intrinsic motivation, the different sub-scales of extrinsic motivation and demotivation, and also the enjoyment of a 5^o and 6^o grade of Primary School students sample regarding academic PE, as well as the present relation between age and sex of the participants.

2. Material and method.

Design

In order to carry out this research and resolve the proposed objective, a transversal, descriptive and analytical relational comparative design was made (Alto, López and Benavente, 2013)

Participants

The sample of this research is composed by 183 male students (n = 77) and female students (n= 106) which belong to different Primary Education schools situated in Lugo City, randomly chosen, and whose ages were between 10 and 12 years old (M = 10,95; DT = 0.76).

Tools

Three instruments were used in order to obtain data:

- *Measure Scale of Basic Psychological Needs. (BPNES)*. Specifically, it was used an adaptation to PE of the scale of basic psychological needs in Vlachopoulos and Michailidou (2006) exercise by Moreno, González-Cutre, Chillón and Parra (2008). The scale was composed by 12 items with the following head: “During my PE classes...” The items belonged to a Likert scale, from 1 (totally disagree) to 5 (totally agree). Three elements composed it: self-government (f.e. “I have the choice to choose how I carry out the exercises), skills (f.e. “I carry out the

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exercise effectively”) and interaction with others (f.e. “I interact in a very friendly way with my partners”).

- *Locus Scale perceived of causality in PE (PLOC Scale)*. Adaptation of motivation scale to PE classes of Goudas, Biddle and Fox (1994) by Moreno et al (2009) to the spanish context. This scale was formed with 12 items with the following head: “I participate in this Physical Education class”. This items belonged to a Likert scale, from 1 (totally disagree) to 7 (totally agree). Five elements composed it: intrinsic motivation (f.e. “Because Physical Education is funny”), identified regulation (f.e. “Because I want to acquire sportive skills”) Introjected Regulation(f.e. “Because I want the teacher to think I am a good student”) external regulation (f.e. “Because that is what I am supposed to do”) and Demotivation (f.e. “ But I do not understand why we have Physical Education”).

- *Measure scale of the enjoyment during physical activity (PACES)*, an adaptation to PE of the scale of basic psychological needs by Molt Dishman, Saunders, Dowda, Felton and Pate (2001), shaped by Moreno, González-Cutre, Martínez-Galindo, Alonso y López (2008) to the spanish context. The scale is formed by 16 items with the following head :” When I am active”. The items belonged to a Likert scale, from 1 (totally disagree) to 5 (totally agree). It is composed by a single element: enjoyment (f.e. “I feel good”).

Procedure

To carry out this research, a permission was requested to the educative competent body. Later, mothers/fathers of the subjects were informed about the protocol and the objective of the research, about the voluntariness to take part in it, and also about the confidentiality of the answers and the data the girls and boys would give. All of that under the ethical rules of the Helsinki Statement (1975).

The tool to collect data (BPNES, PLOC and PACES) was performed during PE classes, with permission of the teacher of this subject, but without his or her presence, in order to avoid any kind of condition on the student’s answers. To complete the questionnaire, a 40 minute time was established, and it was also clearly indicated that it was not an exam with correct or incorrect answers, but as honest as possible.

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The researches were aware of solving any type of doubt about the questionnaire's fulfil, they were present until the end of the process, creating a good, confidence atmosphere inside the class, in order to make the participants show their opinion in a natural and mindful way.

Statistical Analysis

The descriptive statisticians were calculated, correlations (coefficient of Spearman) among the analyzed dimensions of BPNES, PLOC and PACES, internal consistency (Cronbach's α) and the differences according to sex and age variables. The normality tests (Kolmogorov-Smirnov) revealed a not normal distribution, using non parametric tests to compare between sex and age and dimensions of BPNES, PSSPP and PACES. Specifically, to compare using the sex variable, the U of Mann Whitney was used, and to compare using the gender variable the H of Kruskal-Wallis was applied. The significance was established in $p \leq 0.05$ for the different tests. The data analysis were carried out through the statistical programme IBM SPSS (v. 20.0).

3. Results.

bivariadas Descriptive analysis, reliability analysis and bivariate correlations

Table 1 shows the descriptive statisticians of the analyzed data, its reliability and correlation. Related to correlation analysis, it is remarkable the very good and positive correlation between intrinsic motivation and enjoyment. It is also a fact to point out, the good and positive relation between self-government, intrinsic motivation and enjoyment, and also these last two dimensions with the interaction with others.

Regarding correlation between the other variables of BPNES, PLOC and PACES, we should indicate the existence of a low or really low correlation between them.

Table nº 1. Mean (M), standard deviation (DT), Asymmetry(Asim.), Kurtosis (Curt.) and correlations between analyzed dimensions.

Dimensions	M	DT	Asim.	Kurt.	α	AU	CP	RCD	MI	ME	DMT	DISF
Self-government (AU)	3,44	0,93	-0,34	-0,50	0,745	1	0,533**	0,397**	0,595**	0,050	-0,155*	0,577**
Skills (CP)	3,90	0,81	-0,70	-0,13	0,705	-	1	0,408**	0,483**	-0,79	-	0,557**
Interaction with others (RCD)	4,13	1,01	-1,39	1,29	0,716	-	-	1	0,539**	-0,090	-	0,594**
Intrinsic motivation (MI)	5,59	1,60	-0,94	-0,54	0,768	-	-	-	1	-0,070	-	0,719**
Extrinsic motivation (ME)	3,93	1,59	0,01	-0,87	0,709	-	-	-	-	1	-	-
Demotivation (DMT)	2,27	1,45	1,14	0,72	0,710	-	-	-	-	-	1	0,340**
Enjoyment (DISF)	4,29	0,74	-1,51	1,90	0,881	-	-	-	-	-	-	1

** Correlation is significant with a 0.01 level (Bilateral)

In order to know the gender (Table 2) and age (Table 3) interaction of the boys and girls regarding the BPNES, PLOC and PACES variables, a analysis through non parametric test was carried out. Specifically, to compare regarding sex and the dimensions, the U of Mann. Whitney test was used (Table 2), and to compare regarding age, the H of Kruskal-Wallis (Table 3) was applied.

Regarding sex, as it is shown on Table 2, there were not found significant statistical differences between the sub-scales of BPNES, PLOC and PACES and average between boys and girls was really similar. We can highlight that the lower values of the analyzed lower dimensions are above the average value of each scale except for extrinsic motivation and demotivation.

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Table nº 2. Analysis regarding sex.

Variables	Sex					
	Boys (n=77)		Girls (n=106)		U of Mann-Whitney	p
	M	DT	M	DT		
Self-government	3,49	0,93	3,41	0,94	3877,50	0,564
Skills	3,87	0,75	3,92	0,85	3793,00	0,413
Interaction with others	4,25	0,88	4,04	1,09	3800,00	0,417
Intrinsic Motivation	5,63	1,476	5,55	1,70	4065,00	0,963
External Regulation	3,87	1,48	3,98	1,67	3934,50	0,678
Demotivation	2,33	1,42	2,22	1,47	3843,50	0,489
Enjoyment	4,36	0,66	4,25	0,80	4116,50	0,997

The calculated results regarding the age of the participants showed differences statistically significant on the BPNES dimensions, in which self-government, skills and interaction with others decreased as the participant's age went from 10 to 12. Regarding the PLOC dimensions, we should indicate that intrinsic motivation is similar in 10 and 11 year-old participants, decreasing when they reach the 12 years old. Demotivation increases from 11 to 12. Enjoyment, like it happened with intrinsic motivation, between 10 and 11 years old, the students evaluate in a similar way, and at the age of 12 this enjoyment during Physical Education classes decreases. Still, we should point out that even these low values are above the average value of the points scale except for demotivation.

Tabla 3. Analysis regarding age.

Variables	Age(H Kruskal- Wallis	p
	10 (57)		11 (77)		12 (49)			
	M	DT	M	DT	M	DT		
Self-government	3,72	0,82	3,52	0,95	3,00	0,88	18,11	< 0,001
Skills	4,17	0,59	3,99	0,85	3,44	0,79	23,14	< 0,001
Interaction with others	4,50	0,51	4,48	0,62	3,16	1,28	38,91	< 0,001
Intrinsic Motivation	6,10	1,19	6,12	1,17	4,15	1,75	36,36	< 0,001
External Regulation	4,18	1,55	3,74	1,65	3,95	1,52	2,31	0,328
Demotivation	2,15	1,36	1,90	1,22	2,98	1,67	15,36	< 0,001
Enjoyment	4,55	1,46	4,45	0,65	3,76	,87	31,39	< 0,001

4. Discussion.

The first objective raised with this research was to evaluate the satisfaction of the Basic Psychological Needs (self-government, skills and interaction with others). In general, the drawn data from the analysis of the Measure Scale of Basic Psychological Needs. (BPNES) expressed that students showed a good level of satisfaction, in which it can be represented the strategies developed by the PE teacher during his or her classes, like it is shown in the researches carried out by Sánchez-Oliva et al. (2013) and Abós, Sevil, Sanz and García (2015)

Accordingly, the values of the section interaction with others are remarkable, in which we can verify the important role that PE plays, the real laboratory of development and resolution of conflicts, showing the continuous interaction between participants of the group-class and where all that teaching practices values that teachers try to transmit to the students through movement, physical exercise and sport can be put into practice (Castaño-López et al., 2016; Vargas and Orozco, 2003).

The skills section also shows high values, due to the fact that the participants reflected to feel effective at the moment of carrying out the exercises proposed by the teacher, maybe because he or her focuses to the task and not the ego as it has been proposed by Almolda, Sevil, Julián, Abarca-Sos, Aibar and García-González (2014), making clear to have self confidence and effectiveness in the realized actions, which will develop in a higher enjoyment of PE classes, as it is shown in studies of Hashim et al (2008).

The acquisition of self-government (personal, solving motor problems, developing self motor skills, own movements...) they are aspects collected in the educative curriculum, which the teacher has to promote from the first primary grades and which the students have to get used to acquire them progressively; however, in this research the values were one of the lowest, which can suggest the need of strategies and methods from the teacher, in order to make easier the acquisition of that self-government make decisions, which will prepare the students to solve future problems on their daily life, such as deal with their fears, or any other challenge they could face (Moreno et al., 2008)

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Another objective was the evaluation of the PLOC variables (intrinsic motivation, external regulation and demotivation). The subjects analyzed show a high level of intrinsic motivation (higher levels of the research), differing with the results obtained by Abós et al. (2015). There have been also found average values of extrinsic motivation and the lowest values referring to demotivation. This way, we verify that students participate during PE classes because of their own interest, to experience, explore, learn, to accomplish challenges and/or objectives and reach personal goals which are so important to students of these ages (Deci and Ryan, 2002).

In a lesser extent, they do it because of internal pressures, to prevent discriminatory comparisons from their partners, to look for rewards or avoid punishments (Deci and Ryan, 2002); but, must of all, students understand that PE is good for their health, for their own welfare, giving physical and psychological benefits, from there the low levels of demotivation. Accordingly, Moreno- Murcia et al. (2013) indicates that the students with higher intrinsic motivation and low demotivation in academic PE, are the ones who practice more extracurricular physical activities, adjusting to the objective that the teacher should set and promote this type of performance and compensate the low assignment of hours to Physical Education on the academic curriculum (Castaño-López, Navarro-Patón and Basanta-Camino, 2015).

The third objective stated was to analyze the level of enjoyment of students who belonged to the last stage of Primary Education during PE classes. Because of the obtained results (the higher after extrinsic motivation) we can say that the subjects show a huge enjoyment regarding academic Physical Education, a meaningful element of motivation which demonstrates a positive commitment to the course.

The teacher must always have in mind that enjoyment is the element which better predicts the beginning of new practices or the maintenance of the already practiced ones, and if we want our students to be close to any kind of physical-sportive (academic or extracurricular) practice, the teacher should suggest various motivating practices which promote a real and effective learning (Gil-Madrona and Díaz-Suárez, 2012).

If the proposed tasks are based on the appropriated motivational atmosphere, the level of enjoyment of the students will be higher (Barreal-López et al., 2015), the same way that if

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we proposed classes with attractive content adjusted to the needs of the student, paying attention especially to the quantity and intensity of the proposed sessions to avoid excesses (very difficult tasks which cause frustration) and stagnation (very easy tasks which cause boredom, laziness and abandonment) (Fairclough, 2003).

Another time we are pointing out the importance of the teacher all over the process, who is the leader and also the person in charge to achieve active physical persons during these ages and also to make the students be close to any kind of sportive practice, which allows them to improve their life quality for years (Navarro-Patón, Barreal-López and Basanta-Camino, 2016); the PE teacher will achieve this with a great approach of his or her classes, making the level of satisfaction of the students increase at the same time during them (Faison-Hodge and Porretta, 2004; Trost, Pate, Freedson, Sallis and Taylor, 2000).

Finally, we posed the analysis of the existing relation of the measurement of BPNES, scale of PLOC and the level of enjoyment regarding sex and age of the participants. Referring to BPNES, there are not found significant differences regarding sex of the participants, showing all of them high satisfaction rates. However, regarding age variable, it must be pointed out the high values of 10 year old participants, values which slightly decreases with 11 years old, and the same for those who are 12.

The trend in the relation between motivation and satisfaction of the Basic Psychological Needs, goes on the same way as the one shown in Standage and Treasure researches (2002) or Van Wersch, Trew and Turner (2002), which claim that motivation decreases as the person grows up.

Relation between PLOC and the participant's sex, the values are really similar to those related with the gender variable. But the most significant differences we found it with regard to the age variable of the participants. When the age increases, motivation decreases, as it was shown in the Standage and Treasure researches (2002) or Van Wersch, Trew and Turner (2002) which we have already mentioned. Accordingly, it is important to have in mind researches like Moreno-Murcia and Martínez-Camacho (2006) or de Castaño-López et al. (2015), which indicate that when this kind of situation takes place, the teacher should be aware and focus the practices in order to avoid the decrease of motivation, paying special

attention to the feedback given to the students, promoting skills and self-confidence or promoting objectives focused to the process per se (Abós et al., 2015)

Finally, the relation between enjoyment during academic PE classes and sex variables do not show significant differences. Researches like the ones made by Moreno-Murcia et al (2011) showed that gender is a decisive factor regarding enjoyment, however, our study does not show the same, in which our participants demonstrate similar values in boys and girls, but they do regarding age, decreasing this as the age increases as it is shown in the research carried out by Barreal-López et al. (2015).

5. Restrictions of the research.

The short size of the sample (183 participants) does not allow us extrapolate the results to a general population, because it is not a representative sample. This is why, it would be interesting that other researches could deepen this theme, with a bigger sample size and carrying out a comparative research of the obtained results.

6. Conclusions.

The obtained results regarding the satisfaction of the Basic Psychological Needs also show us the level of motivation of the students facing PE, what can make us think that these participants will practice physical activity out of their school time (Castaño-López et al, 2015; Moreno-Murcia et al., 2013). Consequentially, the participants will keep healthy habits, something that it has been reflected in the current educative legislation referring to academic Physical Education.

In this research is highlighted the special importance of the expert PE teacher, his or her didactic suggestions and strategies in order to create a appropriated atmosphere to benefit the acquisition of the correct levels of BPNES, PLOC and enjoyment during their daily classes, trying to transmit with significant educative experiences the benefits that physical activities and sports give, focusing on the task (process) but not ego (result) the PE classes.

It is essential for the teacher to properly programme and develop his or her classes, also to propose task which involve cooperative work and interaction with others (Gómez, Hernández, Martínez and Gámez, 2014), avoiding monotony, and which approaches the

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interests of the students, giving them some self-government to make decisions and perform their own activities.

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