

# ATTITUDES TOWARDS INCLUSION OF STUDENTS WITH DISABILITIES IN PHYSICAL EDUCATION QUESTIONNAIRE (AISDPE): A TWO-COMPONENT SCALE IN SPANISH

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## ABSTRACT

In Physical Education (PE), acceptance by and interaction with peers without disabilities is one of the most important factors in determining whether a student with a disability has a successful experience, such as to be perceived as members of the class, to interact with peers, and to feel part of the group. This study establishes the construct validity of a questionnaire in the Spanish language on attitudes toward the inclusion of students with disability in PE, according a model where attitudes are considered to be comprised of three components: cognitive, affective, and behavioral. Nine hundred and seventy-six PE students (491 girls and 485 boys) from eight public educational centers took part in this study. Using Exploratory and Confirmatory Factor Analysis procedures, a two-component model of attitude was confirmed. Therefore this questionnaire may be used for surveying attitudes and measuring attitudinal change of students within the Spanish school system.

**Key Words:** attitude questionnaire, special educational needs, inclusive education, physical education

# CUESTIONARIO DE ACTITUDES HACIA LA INCLUSIÓN DE ESTUDIANTES CON DISCAPACIDAD EN EDUCACIÓN FÍSICA (AISDPE): UNA ESCALA DE DOS COMPONENTES EN ESPAÑOL

## RESUMEN

En educación física (EF), la aceptación e interacción con compañeros sin discapacidad es uno de los factores más importantes para que los alumnos con discapacidad tengan una experiencia educativa satisfactoria, tales como ser percibidos como uno más de la clase, interactuar con los compañeros, y sentirse parte del grupo. Este estudio muestra la validez de constructo de un cuestionario en español para evaluar las actitudes hacia la inclusión de alumnos con discapacidad en EF, de acuerdo a un modelo en el que la actitud se compondría de tres dimensiones: cognitivo, afectivo y comportamental. 976 estudiantes de EF (491 chicas y 485 chicos) de ocho centros educativos públicos participaron en el estudio. Mediante el empleo de análisis factorial exploratorio y confirmatorio se ha confirmado un modelo bi-dimensional de la actitud hacia la inclusión de alumnos con discapacidad en EF. Este cuestionario podría ser pues empleado para analizar las actitudes y medir el cambio actitudinal dentro del sistema escolar español.

**Palabras clave:** cuestionario actitudes, necesidades educativas especiales, educación inclusiva, educación física

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## INTRODUCTION

Inclusion of students with disability in general physical education (GPE) classes as a part of an educational inclusion approach has been recommended by the Committee of Ministers of the European Union to member states for children and young people (Council of Europe, 2013). During the last decade efforts have been made in several European countries, such as Greece (Panagiotou, Evaggelinou, Doukeridou, Mouratidou, & Koidou, 2008), Turkey (Özer et al., 2013), and Portugal (Campos, Ferreira, & Block, 2014), to facilitate inclusion in Physical Education (GPE). In Spain, students with special needs are educated in regular schools whenever possible, in accordance with the principles of normalization and sectionalism, at the school closest to where they live (Economic and Social Council, 2004). Included in general schools are 149618 students with disabilities, which represents 1.9% of the total school population (MECD, 2014). More than half of the students with disability (55.98%) are with an intellectual or a learning disability, 36.07% with severe disorders (generalized development or behavior/personality disorder), 10.94% with a physical activity limitation, 3.63% with multiple disability, 6.71% with hearing impairments, 2.89% with visual impairments, and 1.17% with other health conditions.

One of the key factors for successful inclusion is a favorable social environment that includes a positive attitude from social agents such as teachers, peer students, and parents (Reina, López, Jiménez, García-Calvo, & Hutzler, 2011). The importance of studying social attitudes toward inclusion is increased by the fact that in the World Health Organization's (WHO) the International Classification of Functioning, Disability, and Health (World Health Organization, 2001), attitude is considered to be an environmental factor that impacts individual functioning and well-being. According to Triandis (1971, p. 2), attitude can be defined as 'an idea charged with emotions which predisposes a class of actions to a particular class of social situations'. As such, attitudes include a behavioral intention as well as cognitive and emotional components (see Vignes, Coley, Grandjean, Godeau, & Arnaud, 2008, for a review). Attitudes towards individuals with disability are often charged with prejudice, including false cognitions, negative effect, and behavioral ignorance, and thus restrict these individual's degree of active participation in community life (Hutzler, Zach, & Gafni, 2005).

Acceptance by and interaction with peers without disabilities is one of the most important factors in determining whether a child with a disability has a successful experience in GPE (e.g. Block, 2007). Being accepted by peers allows children with disabilities to be perceived as members of the class, to interact with peers, and to feel part of the group (Janney & Snell, 2006). Both positive and negative social experiences have been described in the literature. Blinde

and McCallister (1998) reported that some students with a disability felt unwelcome in GPE classes, and other researchers found that they are not always accepted or socially included (Hutzler, Fliess, Chacham, & Van den Auweele, 2002). Goodwin and Watkinson (2000) described supportive and positive interactions with classmates on some occasions, as well as social isolation at other times. Students rated their experiences as 'good days' or 'bad days', depending on the situation. On good days they felt a sense of belonging, shared in the benefits of the activity, and were able to master tasks. On bad days their participation was restricted, they felt isolated, and their competence was questioned. In addition, students with disabilities themselves identified attitudes of others toward them as a barrier for a satisfactory school experience (Hogan, McLellan, & Bauman, 2000).

Most of the studies conducted to investigate variables in inclusive GPE have focused on teachers rather than on students with or without disabilities (see Obrusnikova, Dillon, & Block, 2011). Then, various scales for measuring attitudes of teachers, parents, and students towards various aspects of inclusion have been developed (see Vignes et al., 2008). Some of these scales use the widely accepted three-component model (Eagly & Chaiken, 1993; Triandis, 1971) as a theoretical framework. According to this model, attitudes are considered to be comprised of three components: (1) cognitive, (2) affective, and (3) behavioral. However, various additional approaches exist (e.g., Bossaert & Petry, 2013), as well as self-completion instruments that are based on different theoretical models of the content of attitudes (De Boer, Timmerman, Pijl, & Minnaert, 2012; Vignes et al., 2008). Furthermore, there is a lack of psychometrically validated instruments to tap into the attitudes of peers toward students with disabilities that consider the three components of attitude (Vignes et al., 2008). So far, no satisfactorily validated instrument exists in the Spanish language for assessing students' attitudes toward peers with a disability.

Therefore, the purpose of this study is to establish the construct validity of a questionnaire in the Spanish language on attitudes toward the inclusion of students with disability in GPE classes.

## METHOD

### *Participants*

Nine hundred and seventy-six PE students (491 girls and 485 boys) from eight public educational centers in the south of Spain participated in this study. Participants' age ranged between 12-17 years. Females' (F) mean age was 14.5 years (SD = 1.5 years) and males' (M) mean age was 14.6 years (SD = 1.5 years). Approximately half of the participants (56.86%) reported having a family member, friend, or close neighbor with some type of disability (M = 253; F =

302), and 281 (28.79%) ( $M = 133$ ;  $F = 148$ ) reported participation in physical activity with or having contact with persons with disabilities. The sample was divided into two groups to enable exploratory and confirmatory analysis of the attitudes questionnaire. A group of 494 PE students (248 girls and 246 boys) was used for exploratory analysis and a group of 482 PE students (243 girls and 239 boys) for confirmatory analysis. The school board's approval for filling in the questionnaires by school children was received. An informed consent was signed by a parent of each of the participating students.

### *Instruments*

The Attitudes towards Inclusion of Students with Disabilities in Physical Education (AISDPE) questionnaire is a modified version of the Attitudes Towards Disability Questionnaire (ATDQ; Reina et al., 2011). This Spanish ATDQ includes 23 items and was used in a previous study examining the impact of an awareness program (based on soccer activities for people with visual impairment) on attitudes towards inclusion of students with visual impairments (Reina et al., 2011). The original Spanish ATDQ consisted of three attitude factors: cognitive (9 items;  $\alpha = .775$ ); emotional (7 items;  $\alpha = .584$ ); and behavioral (7 items;  $\alpha = .725$ ). Although this ATDQ was also used in another study about inclusion in sport settings (Pérez-Tejero, Ocete, Ortega-Vila, & Coterón, 2012), its construct validity was not confirmed. For the current study, a revised AISDPE questionnaire was utilized. The major differences between the AISDPE and the ATDQ are the change of disability attribution to a more general description, and the addition of items to include 32 items in total, with a 5-point Likert scale (1 = completely disagree and 5 = completely agree). The items were sub-grouped by two of the three subscales recommended by Triandis (1971): (a) Cognitive perception of children with a disability, with 18 items. The items in this scale were related to the stereotyped view of children with a disability – those who are constantly in need of help, unable to enjoy life, sad, etc. An example of an item in this scale is 'If I were blind, I would not be able to do the things I regularly do'; (b) Behavioral readiness to interact with children with disabilities, made up of 8 items. The items in this scale are related to interactions with children with a disability, for example trying to avoid them, not knowing what to say to them, etc. An example of an item in this scale is 'I will not participate in sport competitions together with people with disability'; (c) Emotional reactions, with 6 items. The items in this scale reflected emotions, such as annoyance, pity or sadness. An item example is 'It disturbs me that students with disability who are in the classroom are changing the normal development of the lesson'.

### *Procedure*

Administrators and teachers from different schools in the region were initially contacted to inform them of the study objectives and to request their collaboration in the study. Upon receiving the administrators' and teachers' approval, informed letters of consent were sent to the participants' parents. The children whose parents returned the informed consent were invited to participate in the study. We administered the questionnaire under the supervision of an investigator, who was able to address any questions or concerns of the participants. The informed consent as well as the questionnaire were completed on an individual basis, and the participants were given a guarantee that their responses would remain anonymous. The participants needed roughly 15 minutes to complete all of the questions, and each participant's questionnaire was checked by the investigator to ensure that every item had been completed.

### *Statistical Analysis*

Descriptive statistics were calculated for all variables, and the results are presented as means  $\pm$  standard deviations. We analyzed the internal consistency of each factor using Cronbach's alpha coefficient and bivariate correlations. An integrated approach of exploratory and confirmatory factor analysis methodology (EFA and CFA, respectively; see Marsh et al., 2009) was followed to validate the construction of the AISDPE scale. Data analysis was performed using the Statistical Package for Social Sciences (version 22.0 for Windows, SPSS Inc., Chicago, IL, USA).

## RESULTS

### *Exploratory Factor Analysis*

We conducted an exploratory factor analysis using principal components with direct Oblimin rotation to verify the attitudes' three-component model. After this analysis, the items were grouped into two factors: *behavioral readiness to interact with children with disability* (items: 2, 10, 17, 18, 19, 20, 21, 22, 29, 32) and *cognitive perception of children with a disability* (items: 1, 7, 9, 16, 24, 25, 26), with eigenvalues above 1.00 (4.30 and 1.71, respectively) and a total explained variance of 35.70% (26.18% and 9.52%, respectively). Internal consistencies (coefficient  $\alpha$ ) for each subscale are presented in Table 1.

TABLE 1  
Exploratory Factor Analysis of the Principal Components with Direct Oblimin Rotation,  
Standardized Regression Weights, Skew, and Kurtosis.

	Behavioral readiness	Cognitive perception	Standardized regression weights	Skew	Kurtosis
1. I think that people with disabilities have more difficulty than other people in reaching the same personal and/or professional achievements.		.515	.32	-.77	-.56
2. People with disabilities cannot adapt to a competitive environment.	.407		.34	1.31	.74
7. I'll highlight if I participate with people with disabilities in physical activity or sport.		.407	.35	-.53	-.80
9. Blind people must always receive help from a guide.		.552	.40	-.02	-1.14
10. Students with disabilities should not participate in regular physical education classes because they could disturb the progress of other classmates.	.533		.57	.61	-.51
16. I would not like the teacher to tell me that I have to help a person with disabilities.		.570	.50	.26	-.89
17. I prefer not to interact with people with disabilities.	.447		.63	1.48	1.50
18. If I have a relative with disability, I'll avoid talking about it with others.	.735		.46	1.25	.48
19. I would not sit in the classroom close to a peer with disability.	.584		.64	1.83	2.68
20. I would not elect for my sport team to include a peer with disability.	.784		.37	1.65	5.38
21. I would not participate as a volunteer at a camp for people with disabilities, where I had to help them in the shower, at meals, etc.	.569		.60	.65	-.74
22. Should I have a disability, my lifestyle would totally change.	.614		.69	1.19	.54
24. People with disability are usually less intelligent than other people.		.526	.50	.23	-.90
25. In general, people with disabilities are less sociable.		.467	.50	-.51	-1.05
26. Most people with disabilities cannot care for themselves.		.632	.51	.18	-.76
29. People with disability must practice specific and independent sports.	.524		.54	.93	-.27
32. If I become a wheelchair user due to an accident my life will not make sense.	.557		.42	.70	-.74
% variance	26.18	9.52			
% total variance	35.70				
Eigenvalue	4.40	1.62			
$\alpha$	.80	.74			

### *Confirmatory Analysis*

We used the method of a maximum likelihood estimation with a bootstrapping procedure, because the Mardia multivariate ratio was 56.06. This procedure provides an average of the obtained estimates from bootstrap resampling and its standard error. It also compares the estimated values without the bootstrap with the measurements obtained by the resampling, indicating the level of bias. Considering confidence intervals (the difference between the higher and lower estimated values in the different resampling analysis), regression weights, and standardized regression weights, the zero score was not within the confidence limits, which means that the estimated values were significantly different from zero. Nevertheless, the estimation results were robust, and therefore were not affected by the lack of normality (Byrne, 2001).

Similarly, we considered a number of fit indices to evaluate the goodness-of-fit of the measurement models with the empirical data. The goodness-of-fit indices were:  $\chi^2$ ,  $\chi^2/d.f.$ , Root Mean Square Error of Approximation (RMSEA), Root Mean Square Residual (RMSR), and incremental indexes (IFI, CFI, and TLI) (McDonald & Marsh, 1990; Mulaik et al., 1989). These fit indices are considered acceptable when  $\chi^2/d.f.$  is less than 5, the incremental indexes (IFI, CFI, and TLI) are equal to or greater than .90, and the error rates (RMSEA and RMSR) are equal to or less than .05 (Hu & Bentler, 1999). Following an initial analysis, we saw that the overall results of the model were not adjusted properly. Modification indices settled four interactions standardized errors (in particular, between the errors of the items 17 and 18, 18 and 19, and 1 and 7), and a new analysis was conducted whose results showed a better fit of the model (Figure 1):  $\chi^2(38, N = 976) = 257.09$   $p = .00$ ,  $\chi^2/d.f. = 2.24$ , CFI = .90, IFI = .90, TLI = .90, GFI = .94, SRMR = .05, RMSEA = .05. Standardized regression weights ranged from .32 to .69.

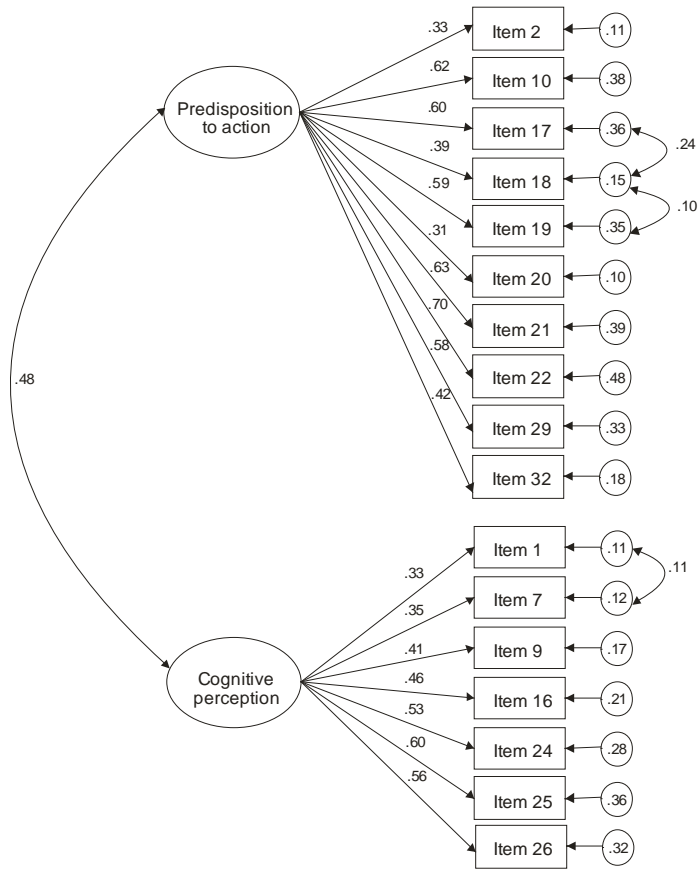


FIGURE 1: Confirmatory factor analysis of a two-factor model of *Attitudes towards inclusion of students with disabilities in a physical education scale*. The ellipses represent the factors or dimensions of the scale and the rectangles show the different items. All regression weights are standardized and are statistically significant ( $p < .05$ ). The error variances are represented by the small circles.

### Descriptive and Correlation Analysis

The cognitive subscale of attitudes towards people with disabilities was the most valued (Cognitive =  $3.16 \pm 0.71$ ; Behavioral =  $1.88 \pm 0.68$ ). All the variables had a significant and positive correlation with each other ( $cor. = 0.39$ ;  $p < 0.001$ ).

### DISCUSSION

Studies reporting experiences of students with disability in GPE show that inclusion is not always successful (Block & Obrusnikova, 2007). One of the biggest disappointments revealed in the literature on inclusion in GPE is the finding of limited social interaction with peers without disabilities (e.g., Place & Hodge, 2001), which can lead to limited social learning opportunities for the students with disabilities (Odom, McConnell, & McEvoy, 1992). In the current



study, we validated a new scale in Spanish to measure the attitudes towards inclusion in GPE classes.

Regarding the new 32-item scale used in this study, the advantage of a two-component attitudes model with a distinction between the cognitive and behavioral components was confirmed over the three-component model. This finding is in line with Rosenbaum, Armstrong, and King (1986), who also suggested that a two-component model might be a better solution. In addition, in accordance with De Boer et al. (2012), it is likely that there is no such thing as a three-component model, and that all theoretical distinctions within the concept 'attitude' highly intercorrelate with each other. However, a strong relationship between the three components is underlined by Albarraçín, Johnson, and Zanna (2005). They state that attitudes are evaluative tendencies that can both be inferred from, and have an influence on, beliefs, affect, and behavior: 'Beliefs, affect, and behavior are seen as interacting with attitudes rather than as being their parts' (p. 5). Furthermore, Ajzen (2005) stated that most of the data reported in the literature are quite consistent with a single component model, because factor analyses in the studies revealed a single factor explaining most of the variance present in the data. Thus, the number of attitude components is still a matter of debate (De Boer et al., 2012).

The level of comprehension of the statements could have some impact on the reliability of the scale. In other words, it may be preferable to use vignettes instead of statements, where the student can think of how to act in the situations that the questionnaires present. Attitude measurements should be based on a well-considered conceptual framework. A closer look at the conceptual framework behind a number of attitude scales revealed that many of these scales lack any theoretical basis (De Boer, Pijl, & Minnaert, 2010, 2011), which hampered the interpretation of the scales. The cognitive component in the student scales often focused on items reflecting knowledge about the behavior of children with disability. Feelings of fear, shame, and joy were measured by items belonging to the affective component. The behavioral component was often measured by items reflecting the students' willingness in school and during their free time to interact and show support for children with disabilities (De Boer et al., 2012).

Some authors prefer to work with a two-component (e.g., Ajzen, 2005) or a single-component model (e.g., Dillon & Kumar, 1985). A number of studies using a two-component scale were able to differentiate between the cognitive and affective components, while the behavioral intention was excluded (e.g., Bagozzi & Burnkrant, 1985). In contrast, some authors have proposed the single-component model, assuming that a distinction between the three components cannot be reasonably made (e.g., Dillon & Kumar, 1985). Because an internal consistency of 0.70 or more is generally judged as acceptable

(Hopkins, 2000),  $\alpha$  coefficients for each of the AISDPE sub-scales demonstrated acceptable values in the current study for the cognitive and behavioral subscales ( $\alpha = .82$  and  $\alpha = .75$ , respectively), but not for the values of the affective subscale. These results are in accordance with previous findings of Reina et al. (2011), in a study that explored the effect of two awareness programs (a 6-day vs. a 1-day program) on children's attitudes toward peers with a visual impairment.

In accordance with Ocete-Calvo et al. (2015), one of the keys to facilitating awareness of the situation of students with disabilities in education should be to promote activities for students without disabilities where they can experience and learn about disabilities. Then, the development of the scale of this study can evaluate children's attitudes towards inclusion of students with disabilities in GPE, adapted to the Spanish context. Using EFA and CFA procedures, a two-component model of attitude was confirmed. Therefore this questionnaire may be used for surveying attitudes and measuring attitudinal change of students within the Spanish school system.

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