Title: The Representation of Disability in Physical Education Textbooks in Spain

Abstract:

The objective was to identify the main characteristics of the way that people with disabilities are represented in physical education textbooks. The study was empirical, descriptive and comparative. The sample comprised 6,773 photographs. The methodology employed was a content analysis using an *ad hoc* observational instrument which was scientifically validated through a pilot study, a consultation with experts and an inter-coding test. Univariate and bivariate analysis were carried out; statistical calculations utilised the SPSS 20.0. Results showed that the representation of people with disabilities in physical education textbooks is very limited, both in terms of frequency and diversity. Some positive changes were noted with regards to similar, previously published research. There are signs of a move away from an elite sports model towards a more varied representation that includes artistic motor expression, physical fitness training and physical activities in natural environments which do not necessarily take place in the traditional educational environment.

Keywords: Disability; Photography, Textbooks; Physical Education; Content Analysis.

Introduction

In Spain, 3.85 million people have some kind of visual, hearing, motor, mental or intellectual disability; 78,300 of these individuals are between 6 and 15 years old.

Children with disabilities face particular obstacles in participating in physical or sports activities (Shields, Synnot, and Barr 2012). Many of these obstacles could be described as 'environmental' (Van der Ploeg et al. 2004) and include the lack of inclusion and negative attitudes towards disability (Shields and Synnot 2016).

The content analysis carried out in this study aims to identify the characteristics of the way that people with disabilities are represented in photographs in physical education textbooks in Spain. The manner in which the representational framework of disability (Ferreira 2008) in school physical education contributes to the construction of a disabling society is also examined.

The social model of disability and participation in sports and physical activities

In contrast with the traditional (medical) model, the social model of disability is not exclusively based on the physical difficulties of an individual but on the structures of the society in which they live: "Disability does not imply disabled people but a disabling society" (Ferreira 2009, 2). This conceptualisation does not "see the subject as subjected by a deficit, it sees the subject as subjected by society, in interaction with the context" (Sosa 2009, 7). It also rejects the legitimizing ideology of normality that determines asymmetric and unequal relationships for people with disabilities (Rosato et al. 2009). Inclusion in sports not only involves access to sporting activities by adapting certain conditions. True change requires a transformation of its structure so that it no longer obeys a logic whereby the dominant values linked to the able-bodied are reproduced. True inclusion requires a transformation that includes other forms of sport and physical activity that place a value on other qualities different from the hegemonic ones and in such a way that it resignifies the concept of normality, ability and skill (DePauw 1997).

Sport and physical activity is recognized as an important factor in the quality of life and integration of people with disabilities; participation is, to a large extent, determined by social factors (Van der Ploeg et al. 2004). Satisfactory participation in physical education classes for people with disabilities has been shown to have a significant influence on the analysis of their life histories and the development of a positive or negative attitude toward sport and physical activity (Lehnhard, Manta, and Palma 2012).

School, and the subject of physical education in particular, has always had difficulties with the issue of diversity because the system is based on performance and the homogenization of the student with regards to a specific standard or reference (Molina and Beltrán 2007). Physical education should be based on the principle of inclusion and offer all students corporal instruction in accordance with their characteristics and needs (Abarca-Sos, Julián-Clemente, and García-González 2013). However, inclusion is hindered by the ratio of students to teachers, the scant support offered by state educational administrative bodies, the uncertain nature of the teaching methodology and a lack of pedagogic materials and resources (Mazzotta and D'Antino 2011). School textbooks can make a contribution to mitigating the two latter mentioned limitations by incorporating contents that favour representational references that foster inclusion and equality.

Representational references contribute to the configuration of the *habitus* of people with disabilities in the same way as practical conditioners such as material obstacles (Ferreira 2008). The *habitus* generate distinct habits because they constitute a language, a practical meaning derived from a system of perception and appreciation schemes that has been acquired through lasting experience in a specific social space (Bourdieu 1996). In this case, the representational references of disabled people construct a symbolic depreciation as they depict a collective that is separate from the community; disabled people are homogenised by their insufficiency and they are devalued in comparison with the general population. "The *habitus* of people with disabilities is constituted as a negative reflection of the effective integrity of the practical life of the citizen" (Ferreira 2008, 156).

Mass media and communications research has demonstrated that the representation of people with disabilities in sport and physical activities perpetuates stereotypes and reproduces prejudices (Brittain 2004; Cherney, Lindemann, and Hardin 2015; Silva and Howe 2012). A disabled body is perceived as weak, immobile and dependent (Pappous et al. 2009; Pappous, Marcellini, and De Léséleuc 2011) or, simultaneously, as a *super-crip*. Disabled people are portrayed as having to fight against their deterioration in order to overcome it and achieve (improbable) success (Silva and Howe 2012). This construction is due to the belief that life with a disability is, by definition, dreadful and unsatisfactory. Analysis of the iconographic representation of the two European Paralympics revealed multiple examples of the characterisation of the competitors as 'super-crips', freaks of nature, heroes or similar (Silva and Howe 2012).

Disability in school textbooks

People with disabilities are invisible in the majority of infant and primary school textbooks in Spain; Martínez (2013b) reported that only 4% of the images in three infant textbooks featured people with disabilities. In a later study (Martínez 2014), the same author looked at a total of 276 images from infant textbooks and found only one that included a person with some kind of disability (a child with his leg in plaster that was using crutches). Martínez (2013a) also undertook a study of six publishing houses of primary education textbooks and found that of 1,126 images only 1.2% included people with a disability. Of the images of disability, 68% concerned a physical impairment, 22% were of individuals with mental disabilities and 8% sensorial; in 78% of the photographs, the disabled person was in a wheelchair.

In 2008, Miralles, Delgado, and Caballero analysed 18 infant education textbooks from six publishing houses and found that only 7.1% of the images featured a person with a disability, almost always a child in a wheelchair.

This bias in the representation of disability in school textbooks is common to many countries and all stages of the education process: Goldstein, Siegel, and Seaman (2010) studied introductory psychology texts and concluded that the representation of disability is very limited and confined to stereotypes; Cheng and Beigi (2011) considered seven Iranian textbooks on the English language and found a very small number of references to people with disabilities.

Research on disability in physical education textbooks

There are relatively few published works on the representation of disability in physical education textbooks; almost all of them conclude that representation is limited and biased (Hardin and Hardin 2004; Hardin 2007; Táboas-Pais and Rey-Cao 2012; Vidal-Albelda and Martínez-Bello 2016).

Physical education textbooks in the United States reinforce the hegemonic idea that sport is the realm of the non-disabled; Hardin (2007) considered 2,455 images from 59 textbooks and found only 14 (0.6%) photographs that included disabled people. Three of the six publishing houses showed no images of disability and the maximum incidence of inclusion was 1.5%. No references to disability were found in the images that illustrate the physical education texts of the second and third cycle of basic education in Portugal (Botelho-Gomes et al. 2008). In 36 Spanish physical education textbooks for students aged 12-16, published between 2000 and 2006, only 1.36% of the photographs showed people with disabilities; the existence of this collective in school and sport is virtually ignored (Táboas-Pais and Rey-Cao 2012). The analysis of 17 text books published between 2007 and 2013 for this very educational stage revealed a slight improvement in representation rates. 10% of photographs showed people with disabilities (Vidal-Albelda and Martínez-Bello 2016).

This ‘diminished protagonism’ is evidenced by the quantity and quality of the representations. The work of Hardin (2007), Táboas-Pais and Rey-Cao (2012) and Vidal-Albelda and Martínez-Bello (2016) exposed the stereotype of disability that is associated with the wheelchair and limited corporal and motor diversity. Táboas-Pais and Rey-Cao (2012) found that of 45 images of people with

disabilities, 53.3% depicted people in wheelchairs. In the study by Vidal-Albelda and Martínez-Bello (2016), the wheelchair was also the most common indicator of disability. It appeared in 14 of the 27 photographs that showed people with disabilities (52%). Furthermore, 21 photographs (78%) showed physical disability and only 6 (27%) sensory impairment.

In the books published between 2000 and 2006, there were no cases in which disabled people were shown as integrated with their non-disabled peers (Táboas-Pais and Rey-Cao 2012). Specifically, 37 of the 45 photographs (82.2%) showed people involved in adapted sports. Percentages which remained very high in the text books published between 2007 and 2013, in which 21 of the 27 photographs (77.7%) showed involvement in adapted sports (Vidal-Albelda and Martínez-Bello 2016).

People with disabilities are not portrayed participating in artistic motor activities or conventional sports or games (Táboas-Pais and Rey-Cao 2012; Vidal-Albelda and Martínez-Bello 2016).

Their representation is also biased insofar as use of space is concerned. In books corresponding to the period 2002-2006, no photographs were found of people with a disability taking part in activities in a natural environment (Táboas-Pais and Rey-Cao 2012). However, between 2007 and 2013, no statistical difference was found between outdoor or indoor space and the presence of disability (Vidal-Albelda and Martínez-Bello 2016).

When people with disabilities are protagonists, they are shown in relation to sporting success and excellence - 80% of the images referred to elite sport, for example the Paralympics; there were almost no images that were located in physical education classes or an educational context (Táboas-Pais and Rey-Cao 2012; Vidal-Albelda and Martínez-Bello 2016).

Based on the above mentioned findings, the hypotheses of this present study are as follows:

1. Compared to non-disabled individuals, people with disabilities have little representation in Spanish physical education textbooks.

2. The majority of images of people with disabilities include wheelchairs.

3. The majority of images of people with disabilities show them participating in non-inclusive activities.

4. The majority of images of people with disabilities show them participating in adapted sport; a minority of images show them participating in artistic motor activities, games, or physical activities in natural environments.

5. People with disabilities are much less frequently featured in the natural environment than their non-disabled peers.

6. The majority of images of people with disabilities show them participating in elite, competitive sports.

Material and Methods

The objective was to identify the main characteristics of the way that people with disabilities are represented in physical education textbooks. The study was empirical, and descriptive. The study sample was the photographs that appear in the physical education textbooks. The study instrument was content analysis, whilst it is true that this technique of study is unable to determine if the people in the photographs have a disability caused by an impairment that cannot be seen in a photograph, it can identify the messages that are represented by the content that is linked to people with disabilities (Táboas-Pais and Rey-Cao 2012).

Sample

The sample comprised 6,773 photographs, taken from 39 physical education textbooks in Spain published under Organic Law 2/2006, of 3 May, on Education (LOE). The publishers analysed were: Akal, Almadraba, Anaya, Bruño: Pila Teleña, Edelvives, Kip Kiné, Laberinto, Paidotribo, Pila Teleña, Santillana, Serbal: Proyecto Olimpia, and Teide (all the publishers that produced physical education texts for secondary education during the study period). One text book for each of the Obligatory Secondary Education school years and from each publisher was analysed. In cases in which the publishing house had more than one text on the market, we used the book that was published closest to the year of the Spanish Law on Secondary Education.

Variables

The independent variable was disability. In order to make it easier to understand the indicators of the independent variable, the definitions of each one are added (Table 1):

[Insert Table 1 here]

The dependents variables that were analysed were: type of motor expression; context of activity; location; and, level (Table 2):

[Insert Table 2 here]

Procedure

The content analysis was based on the system of categories proposed by Táboas (2009); the category *context of activity* was modified in accordance with the conclusions of the doctoral thesis of this author (461) and the variable *disability* was included. Validity, reliability and practical utility (Heinemann 2003) of the *ad hoc* system was tested in three stages:

1. *Pilot study.* Carried out by the lead researcher. 238[1], randomly selected images using a table of random numbers that were not included in the final sample were coded. The concepts, elements

[1] The number of images chosen for the pilot study followed the criteria of Lacy and Riffe (1996), who indicated that the adequate simple size should not be lower than 50 elements and rarely go above 300 elements.

and terminology of the system were tested in order to eliminate any problems of comprehension and use.

2. *Consultation with experts.* Three expert researchers in the field of image content analysis collaborated. One is a Doctor of Philosophy and Letters, another a Doctor of Physical Education and another a Doctor of Education Sciences. They were asked to examine the system and to give their opinions on: the suitability of the categories with regards to the study object; the exhaustiveness and mutual exclusivity of the categories; the clarity of the definitions; and, the minimisation of the subjectivity of the coder. Their comments were measured by means of the Likert scale with values from 1 (complete disagreement) to 5 (complete agreement). The experts also gave qualitative complementary information. The majority of the items received scores of 4 or 5.

3. *Inter-coder test.* Three content analysis experts from the academic field of physical activity and sports science individually coded 50 photographs. The number of images was taken in accordance with the criteria established by Lacy and Riffe (1996) for this type of test. 20 of the images were non-randomly selected in accordance with the system of categories in order to test their comprehension. The other 30 images were selected by a simple random sample. Krippendorff's alpha obtained a high reliability: disability (a=0.86), type (a=0.94), context (a=0.90), location (a=0.92) and level (a=0.92). The results of Krippendorff's alpha (>0.80) for all the variables confirmed the reliability of the system of categories. After the coding of the final study sample, one of the three people who took part in the experts' consultation coded 300 photos (Lacy and Riffe, 1996) from the final sample analysed. They were chosen by means of a simple random sample via a table of random numbers. Krippendorff's alpha was once again applied and results showed high reliability for all the variables: disability (a=0.91), type (a=0.96), context (a=0.84), location (a=0.87) and level (a=0.85).

Analysis and data processing

Images were coded directly from the textbooks. Photographs in which it was difficult to determine *disability* and *type of motor expression* were coded in conjunction with information given in the book or the accompanying paratext. SPSS 20.0. software was used for the statistical analysis. A descriptive univariate analysis was carried out along with association measurements between the variables (bivariate). Corrected, standardised residuals and contingency tables were employed; Pearson's chi-square test revealed a significance level of 5% (α=0.05).

Results

There were 188 missing values (2.8% of the sample). 6,585 photographs were used for the description of the *disability* variable (n=6585).

Hypothesis 1: Of the 6,585 images, only 80 featured people with disabilities (1.2% of the sample). The publishers who showed a greater proportion of disabled people in the photographs in their books were Almadraba (2.7%), Santillana (2.5%) and Teide (2.2%). The books produced by Pila Teleña and Serbal included no images of the disabled (Table 3).

[Insert Table 3 here]

Hypothesis 2: The most common representation of disability was the wheelchair, used in 48 (60%) of the photographs that featured people with disabilities. The second most commonly represented group was people with other types of disability (28 images –35%) inferred by the coders through evidence other than the use of a wheelchair. There were 4 (5%) photographs that featured people with different types of disabilities; a wheelchair was always present in this group of images. This means that the wheelchair was used as an emblem of depeisability in 65% of the photographs. Just two publishing houses did not follow this tendency: 63.6% of the images in the text published by Teide showed people with other types of disability; Santillana included images from the three groups of indicators of disability used in this study (Table 4).

[Insert Table 4 here]

Hypothesis 3: Of the 80 photographs that showed people with disabilities, 71 (88.8%) featured non-inclusive motor activities. The remaining 9 photos (11.2%) alluded to inclusive activities in which people with and without disabilities participated together. Of the photographs that showed non-inclusive motor expressions, 61 (76.3%) were identified in which people with disabilities appeared alone, participating in athletics or sports such as basketball, cycling, goalball or boccia. In the other 10 images (12.5%), disabled people were shown along with non-disabled individuals, but they were participating in different motor activities. 50% of the images from the Bruño: Pila-Teleña publishing house portrayed inclusive motor activities (Table 5).

[Insert Table 5 here]

Hypothesis 4: Of the 80 images that included people with disability, 57 (71.2%) concerned sport; 25 (31.2%) were related to team sport and 32 (40.0%) individual sport. Representation in non-sporting activities was more limited, with only 23 images (28.8%): 4 (5%) were of artistic expression, 2 (2.5%) showed fitness training, 3 (3.8%) were of physical activities in natural environments and 14 (17.5%) involved other motor activities. There were no images that depicted people with disabilities playing games.

The χ^2 test for the variables type and disability obtained a level of significance of 0.000. The statistical test $\chi 2$ revealed that, with the level of significance set at 5%, statistically significant dependence existed between the "disability" and "type of motor activity" variables. The corrected standardised residuals confirmed the relationship between the variables. The probability that people with disabilities were shown participating in sports (both individual and team) was significantly higher than would be expected if the variables were independent (2.5 and 2.7, respectively). In contrast, the residuals demonstrated a negative relationship between disability and fitness training and games (-3.4 and -2.5). (Figure 1).

[Insert Figure 1 here]

Hypothesis 5: The Pearson chi-square test for the variables *disability* and *location* gave an associated p-value of 0.006. The null hypothesis was therefore rejected and the probability of a person appearing in the natural environment being dependent on that person having (or not having) a disability was confirmed. With regards to photos in which the location was outdoors, a higher percentage (18.2%) featured non-disabled people, compared to people with disabilities (9.3%). In photos of indoor activities the figure was 10.7% for those with disabilities and 13.4% for people without disabilities. There were also a higher proportion of people without disabilities that featured in photos in which the location was the natural environment: 12.6% compared to 4% for people with disabilities. The corrected standardised residuals indicated that the probability that people with disabilities would appear in photos in an indoor location was significantly greater than if the variables were independent (2.8). At the same time, the probability that people without disabilities would appear in photos in which the location was outdoors or in the natural environment was significantly greater than if the variables were independent (2.0 and 2.2, respectively). In contrast, there was a negative relationship between disability and presence in photos in which the location was outdoors or the natural environment (-2.0 and -2.2).

It is therefore clear that people with disabilities are more often featured in photos in which the location of the activity is indoors and people without disabilities are more often featured in photos in which the location is outdoors or the natural environment (Figure 2).

[Insert Figure 2 here]

Hypothesis 6: The p-value for the variables of *context of activity* and *disability* was 0.000 which gives a significance level of α=.05. Therefore, the context of activity of the photograph depends on whether the person featured has a disability (or not). In photographs in which the context was institutionalised competition, 29% of the people had no disability, this contrasts with 68% for people

with disabilities (Figure 3). In an educational context, the results were reversed: 37.5% had no disability compared to 9.3% with disabilities. The corrected standardised residuals revealed a positive relationship between being a person with a disability and inclusion in photos of sports competitions (residual value of 7.4) and being a person without disabilities and appearing in an educational context (5.0); there was a negative relationship between disability and appearance in photos of motor activities in an educational context (-5.0).

[Insert Figure 3 here]

The chi-square test for the variables *level* and *disability* gave a result of 0.000. This allowed the rejection of the null hypothesis to a confidence level of 95% and confirmed the dependence between the variables. Both the percentages and the standardised residuals indicated that the proportion of photographs featuring people with disabilities involved in elite sport (54.8%) was higher than non-elite sport (45.2%); the results of the standardised residuals were 10.6 compared with -10.6. In contrast the percentage of photos of people without disabilities participating in non-elite sport was 87.3% compared to 12.7% for elite sport. The standardised residuals in this case were 10.6 and -10.6 (Figure 4).

[Insert Figure 4 here]

Discussion

Hypothesis 1: "*Compared to non-disabled individuals, people with disabilities have little representation in Spanish physical education textbooks*", was validated. The data establishes that, compared to the non-disabled, people with disabilities have very limited visibility in Spanish physical education textbooks. The representation of people with disabilities measured in this study is slightly lower than the representation revealed by a similar study from an earlier period (2000-2006) (Táboas-Pais and Rey-Cao 2012) and significantly lower than the study carried out on books published under the same Law on Education as this study, but with a much lower sample (Vidal-

Albelda and Martínez-Bello 2016). This indicates that Spanish publishing houses are not moving towards implementing the principles of equity and non-discriminatory educational inclusion established by the Spanish Law on Education, in fact, the contrary process seems to be taking place. On the other hand, the difference between two studies carried out on text books for a similar time period points to the existence of notable differences in the consideration given to the representation of disabled by the different publishers. This circumstance has been referred to in this and previous studies (Táboas-Pais and Rey-Cao 2012), and thus, in any case, an improvement in attention to diversity would not occur in a guided and generalised way.

Other studies on physical education textbooks in other countries (Botelho-Gomes et al. 2008; Hardin 2007) have also laid bare the invisibility of people with disabilities. Similar conclusions were published by authors with regards to texts on English as a foreign language (Cheng and Beigi 2011) and other stages of the educational cycle Martínez (2014). The results of our study are coincident with those of Martínez (2013a) who found that in primary school books, 98.8% of the images were of non-disabled people, and just 1.2% featured people with disabilities.

Our results sustain the argument that people with disabilities are a virtually invisible collective in physical education curricular material and this situation is a factor which contributes to the construction of a disabling society (Ferreira 2009).

Hypothesis 2: "*The majority of images of people with disabilities include wheelchairs*", was validated. In a clear majority of photographs that made reference to people with disabilities, the disability was inferred by the presence of a wheelchair. This finding is similar to a previous study by Táboas-Pais and Rey-Cao (2012) and Vidal-Albelda and Martínez-Bello (2016), except that the use of the wheelchair as a symbol of disability has increased in the more recently published textbooks.

The results are also coincident with studies on primary (Martínez, 2013a) and infant school texts (Miralles, Delgado, and Caballero 2008).

Our results provide more evidence that physical education textbooks continue to perpetuate the stereotype of the wheelchair as an emblem and symbol of disability (De Léséleuc et al. 2009; Hardin 2007). This also concurs with the conclusions of Goldstein, et al. (2010) and the argument that the representation of disability is stereotyped and transmits a model of people with disabilities as weak, fragile and dependent (Pappous et al. 2009).

Just one publishing house used more images that did not include a wheelchair when representing people with disabilities. This was the only publisher that came close to meeting one of the criteria suggested by Rey-Cao, Táboas-Pais, and González-Palomares (2014) for avoiding the stereotyping and stigmatisation of disability: textbooks should not use the wheelchair as the exclusive symbol of disability.

Hypothesis 3: "*the majority of images of people with disabilities show them participating in non-inclusive activities*", was validated. The general tendency of physical education textbooks is to represent people with disabilities as participating in sport and physical activities in a separate, segregated manner (Hardin and Hardin 2004; Hardin 2007). In the majority of photographs in our study, people with disabilities were doing athletics, playing basketball, goalball or boccia without any non-disabled participants. When they did appear with non-disabled people, they were in separate groups with different activities.

Nevertheless, in contrast to the findings of Táboas-Pais and Rey-Cao (2012), a number of newer books incorporated images of non-segregated, inclusive activities; in the case of the Bruño: Pila-Teleña publishing house, 50% of the photos were inclusive. Non-inclusive images predominated in the books produced by all the other publishers.

Our results indicate that physical education textbooks do not follow the basic principles of education that are explicitly set out in the Spanish Law on Education, that sees "Equity as a guarantee of equality of opportunities, educational inclusion, freedom from discrimination that can act as a

compensating element for personal, cultural, economic and social inequalities, with special attention to those inequalities that are derived from disability" (17164). The publishing houses are a long way from fulfilling the criterion that establishes that the visual content of textbooks should ensure that people with disabilities are shown as participating, in an integrated manner, with their non-disabled peers (Rey-Cao, Táboas-Pais, and González-Palomares 2014).

Hypothesis 4: "*the majority of images of people with disabilities show them participating in sport; a minority of images show them participating in artistic motor activities, games, or physical activities in natural environments*", was validated. Our findings were coincident with the previous work of Táboas-Pais and Rey-Cao (2012) and Vidal-Albelda and Martínez-Bello (2016) which demonstrated that the majority of images of people with disabilities in physical education textbooks show them participating in adapted sports.

Disability is generally visualised through participation in sport, not through representations of the individuals' own, non-standardised corporeality. Sport is configured as a homogenising practice that transmits hegemonic capitals of an idealised corporeality in contemporary society. Nevertheless, our study has uncovered a significant change with regards to the previous Spanish Law on Education: we found some examples of images that showed people with disabilities involved in non-sports activities (fitness training, artistic expression, physical activities in natural environments) and this was not the case with the analysis of Táboas-Pais and Rey-Cao (2012). In the same way, the study by Vidal-Albelda and Martínez-Bello (2016) emphasises the emerging presence of representations of disabled people carrying out physical exercise.

Táboas-Pais and Rey-Cao (2012) also reported that there were no instances in which people with disabilities were shown playing games, and this was true of the present study.

It is important that people with disabilities are depicted as participating in non-sporting physical activities and exercises as these motor expressions form part of the physical education course

curriculum. It is vital that students with and without disabilities are made aware of these activities as a part of their educational experience.

Results support the position that physical education has a problem with inclusion (Molina and Beltrán 2007) and that actions should be taken to ensure that all students receive an education based on integration (Abarca-Sos et al. 2013). Physical education textbooks should select images that represent the inclusion of people with disabilities, participating in the full range of motor expression activities (games, sport, artistic expression, interiorisation etc), in all contexts (competition, school, instrumental, scenic, informal, utilitarian etc.) and at all levels (elite and non-elite) (Rey-Cao, Táboas-Pais, and González-Palomares 2014).

Hypothesis 5: "*people with disabilities are much less frequently featured in the natural environment than their non-disabled peers*", was validated. Although the present study (unlike the previous work by Táboas-Pais and Rey-Cao 2012) did find some photographs of people with disabilities in the natural environment, the percentage was still much lower than photographs that featured people without disabilities.

There was a significant relationship between disability and photos of indoor sports activities; people without disabilities were much more likely to be shown outdoors and/or in the natural environment. This is further evidence that school physical education can still be characterised by a "motor elitism" (Barbero 1996) that augments the stereotype of people with disabilities as weak, fragile and dependent (Pappous et al. 2009): they need to be in the 'protected' and 'safe', indoor spaces. This biased representation can only be resolved by school textbooks showing disabled people as participating in physical activities in a diverse range of contexts and locations.

This result differs from that found by Vidal-Albelda and Martínez-Bello (2016), who did not find significant differences between disability and space, although the difference between the two studies could be determined by the fact that the study of the abovementioned authors did not distinguish an

indicator for the natural environment. In this way, all of the images of adapted sports that take place outdoors (athletics, for example) would determine the presence of disabled people in outdoor spaces, but in a regulated environment free from uncertainty.

Hypothesis 6: "*the majority of images of people with disabilities show them participating in elite, competitive sports*", was validated. The majority of the images of people with disabilities were from the Paralympics and other high-performance competitive events. People with disabilities are shown in physical-sports activities that are associated with the need to possess a productive body, as envisaged by the perspective of the system of sport (Táboas-Pais & Rey-Cao 2012). If we take into account the fact that sport offers a domestication of the disabled body, through an attempt at imitating the non-disabled body (Ferrante 2010) it would be a good idea to ensure that the majority of images of people with disabilities are not linked or associated with participation in competitive and/or elite sport.

Once again, there has been some progress: this study found some images related to educational and utilitarian activities, this was not the case with the previous study by Táboas-Pais and Rey-Cao (2012). This progress must continue, publishing houses should be encouraged to represent people with disabilities in a variety of participatory contexts, not only in competitive, high level sport.

Conclusions

The representational framework of people with disabilities in physical education textbooks is based on attributes that configure a symbolic depreciation: it is a framework that depicts disabled people as a collective that is segregated from their non-disabled peers. They are homogenised by a standardised insufficiency (symbolised by the wheelchair) and reduced possibilities for corporal expression activities which are largely confined to high-level, competitive sport. The *habitus* of people with disabilities is a negative reflection, a contrast to the effective integration of the rest of the citizenry; they are denied a presence in outdoor spaces and educational contexts.

People with disabilities are obscured, almost made invisible, by the images that illustrate Spanish physical education textbooks; their representation is slanted and limited. The types of disabilities that are portrayed perpetuate the traditional stereotype associated with the use of a wheelchair. Participation is confined to a small number of non-inclusive motor activities and they are rarely shown in educational or utilitarian contexts. The images in physical education textbooks present a restricted corporal culture for people with disabilities; participation is restricted to physical-sports contexts, typified by the Paralympics and this responds to the imposition of a model of normality that is conditioned by sporting excellence and competition. This process results in the distancing of people with disabilities from other educational corporal activities aimed at improved health, leisure or socialisation. Fortunately, among some publishers, there does seem to be an incipient movement towards representing people with disabilities in artistic motor expression activities, fitness training and physical activities in natural environments.

Acknowledgments

Declaration of interest statement

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Table 1

Category system for independent variables

Dimensions	Categories	Indicators	Definition
1. Body	*1.1. Disability*	1.1.1. Non-disabled people	The people show no evident disability or impairment.
		1.1.2. People with disabilities in a wheelchair	The disability of the people involved in the action is inferred from the use of a wheelchair.
		1.1.3. People with other types of disability	The people involved in the action have other types of disability inferred from evidence other than the use of a wheelchair.
		1.1.4. People with different types of disabilities	Simultaneous presence of people with a disability inferred from the use of a wheelchair and people with other types of disability inferred from evidence other than the use of a wheelchair.
		1.1.5. People with disabilities in wheelchairs involved in inclusive activities with non-disabled people	The joint performance of motor activity between protagonists who show a disability inferred from the use of a wheelchair and protagonists who show no disability or impairment can be appreciated.
		1.1.6. People with disabilities in wheelchairs and non-disabled people involved in non-inclusive activities	The joint performance of motor activity between protagonists who show a disability inferred from the use of a wheelchair and protagonists who show no disability or impairment, and are not taking part in the same motor activity can be appreciated.
		1.1.7. People with other types of disabilities involved in inclusive activities with non-disabled people	The joint performance of motor activity between protagonists who show other types of disabilities not inferred from the use of a wheelchair and protagonists who show no disability or impairment can be appreciated. The participation of guides is not considered as performance of inclusive motor activities.
		1.1.8. People with other types of disabilities and non-disabled people involved in non-inclusive activities	The joint performance of motor activity between protagonists who show other types of disabilities not inferred from the use of a wheelchair and protagonists who show no disability or

		impairment can be appreciated. The images in which guides appear are included.
	1.1.9. People with different types of disabilities involved in inclusive activities with non-disabled people	The joint performance of motor activity between protagonists who show a disability inferred from the use of a wheelchair, protagonists who show other types of disabilities not inferred from the use of a wheelchair and protagonists who show no disability or impairment, found performing inclusive motor activities, can be appreciated.
	1.1.10. People with different types of disabilities and non-disabled people involved in non-inclusive activities	The joint performance of motor activity between protagonists who show a disability inferred from the use of a wheelchair, protagonists who show other type of disabilities not inferred from the use of a wheelchair, and protagonists who show no disability or impairment but who are not taking part can be appreciated. The images in which guides appear are included.

Table 2

Category system for dependent variables

Dimensions	Categories	Indicators
2. Motor expression	*2.1. Type of motor activity*	2.1.1.Team or group sports 2.1.2.Individual sports 2.1.3. Artistic 2.1.4. Fitness training 2.1.5. Adventure sports and outdoor pursuits 2.1.6. Games 2.1.7. Other
	2.2. Context of activity	2.2.1. Competition 2.2.2. Educational 2.2.3. Utilitarian 2.2.4. Other
	2.3. Location	2.3.1. Outdoors 2.3.2. Natural environment 2.3.3. Indoors
	2.4. Level	2.4.1. Elite 2.4.2. Non-elite

Table 3

Representation of people with disabilities by publishing houses

Publisher	Total number of images	Images of disability	% Images of disability in each text book
Akal	478	2	0.4%
Almadraba	260	7	2.7%
Anaya	99	1	1.0%
Bruño: Pila-Teleña	440	4	0.9%
Edelvives	1292	23	1.8%
Kip Kiné	760	3	0.4%
Laberinto	590	4	0.7%
Paidotribo	1206	14	1.2%
Pila Teleña	170	0	0.0%
Santillana	458	11	2.5%
Serbal	500	0	0.0%
Teide	520	11	2.2%

Table 4

Representation by type of disability and publishing house

Publisher	Wheelchair	Other types of disability	Different types of disability
Akal	100%	0%	0%
Almadraba	57.1%	42.9%	0%
Anaya	100%	0%	0%
Bruño: Pila-Teleña	100%	0%	0%
Edelvives	65.2%	34.8%	0%
Kip Kiné	100%	0%	0%
Laberinto	25%	0%	75%
Paidotribo	57.1%	42.9%	0%
Pila Teleña	0%	0%	0%
Santillana	54.5%	36.4%	9.1%
Serbal	0%	0%	0%
Teide	36.4%	63.6%	0%

Table 5

Representation of inclusive/non inclusive activities by publishing house

Publisher	Inclusive	Non-inclusive
Akal	0%	100%
Almadraba	0%	100%
Anaya	0%	100%
Bruño: Pila-Teleña	50%	50%
Edelvives	8.7%	91.3%
Kip Kiné	0%	100%
Laberinto	0%	100%
Paidotribo	14.3%	85.7%
Pila Teleña	0%	0%
Santillana	0%	100%
Serbal	0%	0%
Teide	27.3%	72.7%

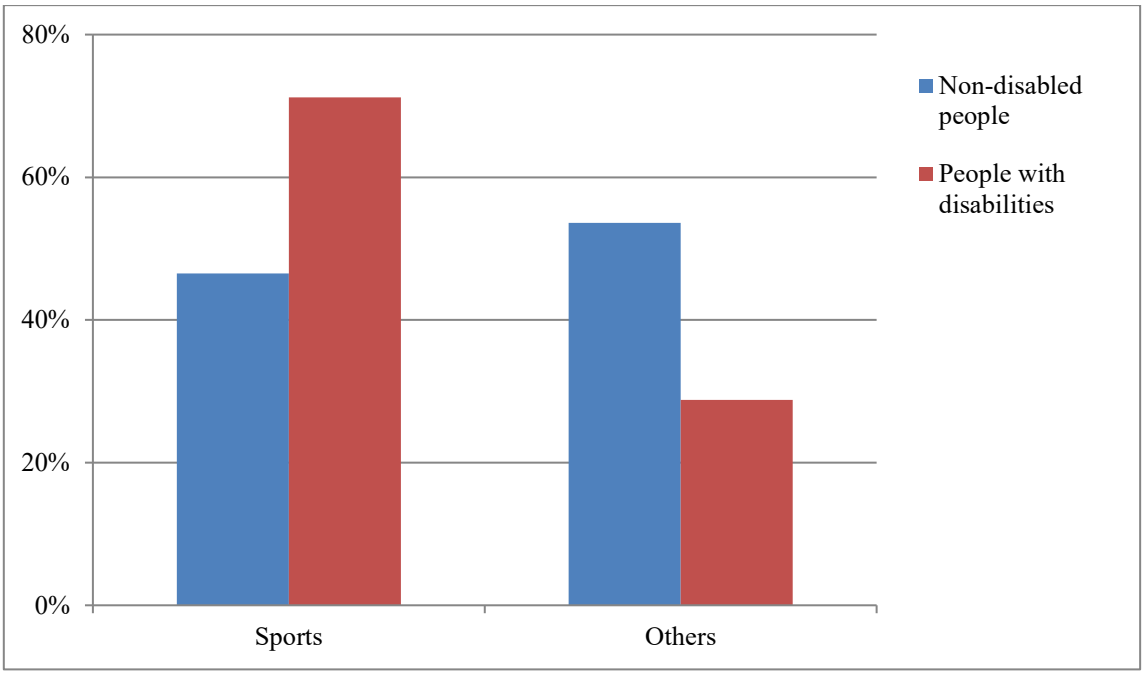

Figure 1. Type of motor activity and disability

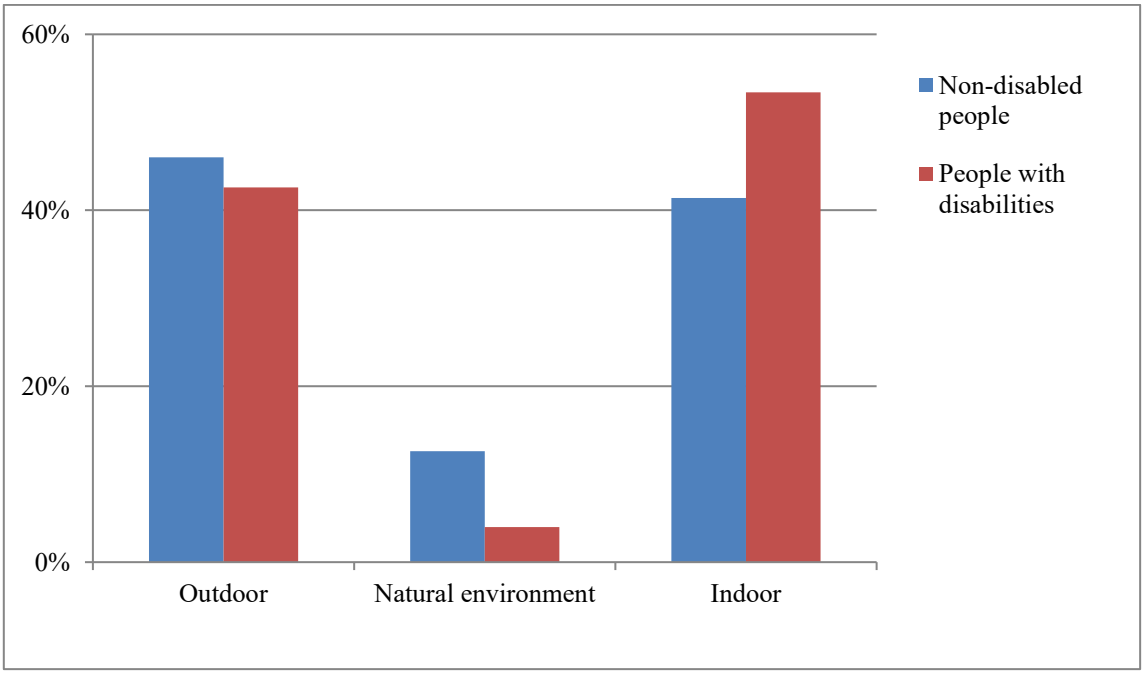

Figure 2. Location and disability

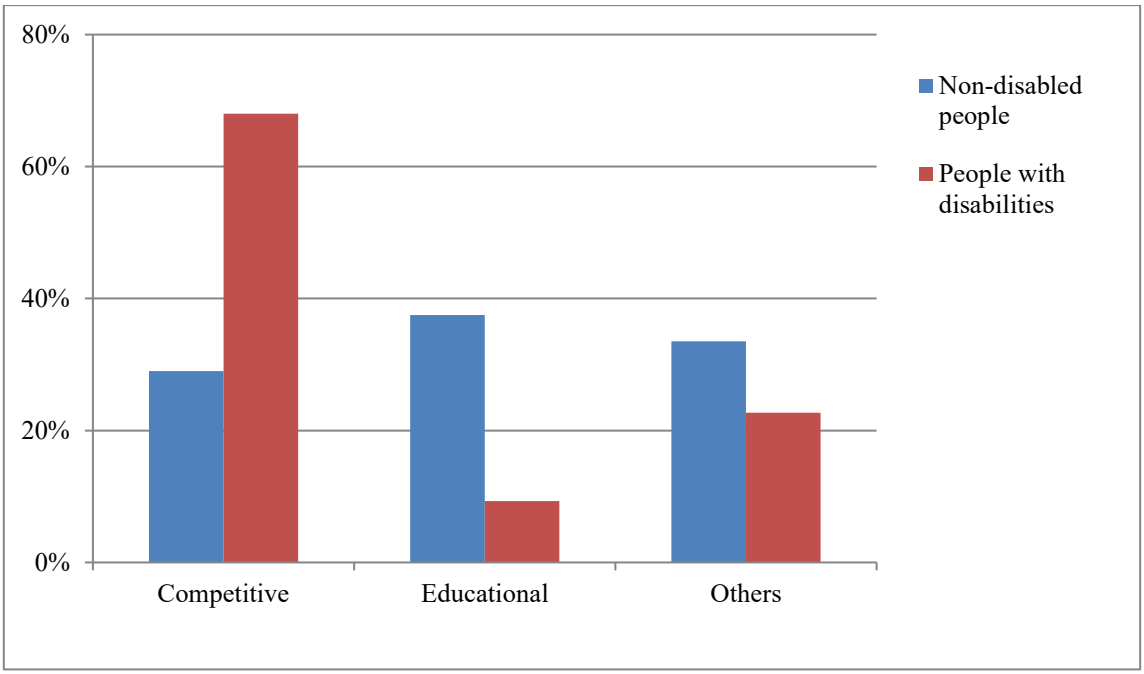

Figure 3. Context of activity and disability

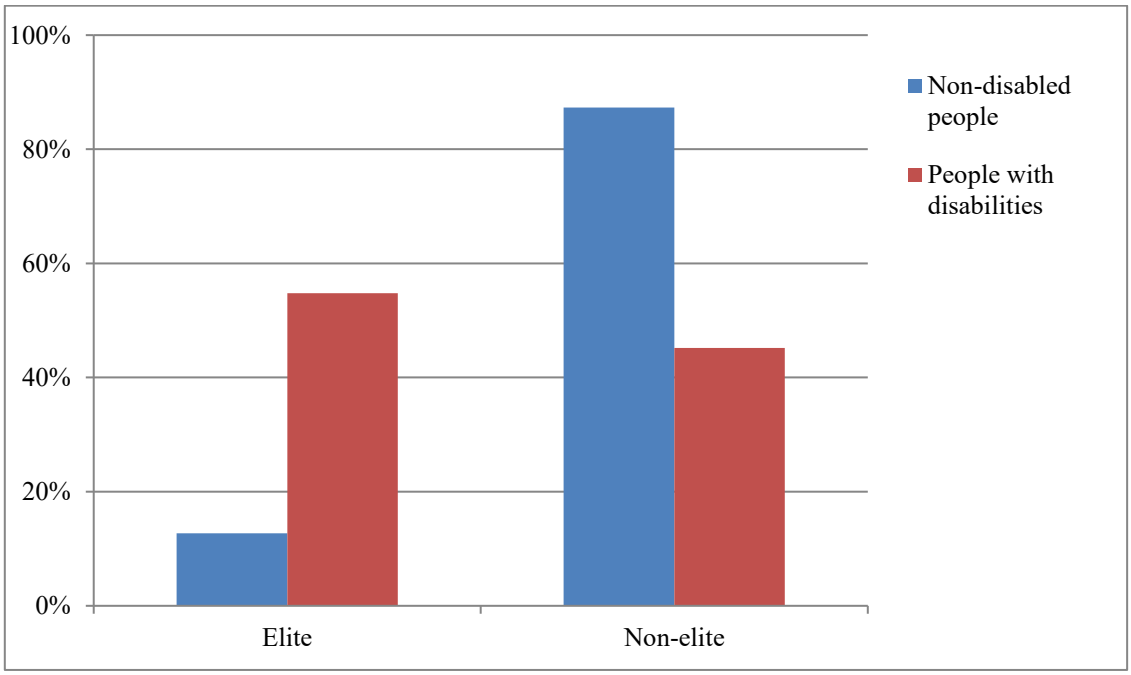

Figure 4. Level and disability