

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/257663657>

Gender Equity in Physical Education: The Use of Information

Article in *Sex Roles* · July 2014

DOI: 10.1007/s11199-011-0103-5

CITATIONS

4

READS

176

4 authors:



[Óscar DelCastillo-Andrés](#)

Universidad de Sevilla

15 PUBLICATIONS 30 CITATIONS

[SEE PROFILE](#)



[Santiago Romero Granados](#)

Universidad de Sevilla

36 PUBLICATIONS 108 CITATIONS

[SEE PROFILE](#)



[Teresa González-Ramírez](#)

Universidad de Sevilla

50 PUBLICATIONS 183 CITATIONS

[SEE PROFILE](#)



[María del Carmen Campos Mesa](#)

Universidad de Sevilla

5 PUBLICATIONS 21 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



EL PROCESO DE ABANDONO UNIVERSITARIO DESDE LA TEORÍA SOCIOCULTURAL: UN ESTUDIO BIOGRÁFICO-NARRATIVO [View project](#)



SAFE FALL: DISEÑO Y PROPUESTA DE IMPLEMENTACIÓN DE UN PROGRAMA PARA LA PREVENCIÓN Y ENSEÑANZA DE LAS CAÍDAS EN ESCOLARES [View project](#)

All content following this page was uploaded by [Óscar DelCastillo-Andrés](#) on 25 September 2014.

The user has requested enhancement of the downloaded file. All in-text references [underlined in blue](#) are added to the original document and are linked to publications on ResearchGate, letting you access and read them immediately.

Gender Equity in Physical Education: The Use of Information

Óscar del Castillo Andrés ·
Santiago Romero Granados ·
Teresa González Ramírez ·
María del Carmen Campos Mesa

Published online: 29 February 2012
© Springer Science+Business Media, LLC 2012

Abstract This study analyzed Spanish teachers' behavior and the transmission of gender stereotypes in physical education classes in secondary schools in Seville, southern Spain. We observed 48 physical education lessons given by four Spanish teachers (two men and two women). Descriptive codes, which were generated iteratively, were clustered, categorized, integrated, recoded, and re-categorized. They allowed us to identify five major themes related to the transmission of gender stereotypes of teachers: the channel of communication, use of demonstrations, task organization, disciplinary measures, and questions asked. We used a coding sheet as well as audio and video recordings to register the categories. The Mann–Whitney test produced significance levels lower than .05, resulting in the null hypothesis being rejected. Sexist behaviors were found in the channel of communication, the students chosen for demonstrations, task organization (the groupings), and in the monitoring of group discipline. However, we found no difference in task organization (material and space) or quantity of questions asked.

Keywords Teacher student interaction · Educational discrimination · Secondary education · Observation methods · Physical education

Ó. del Castillo Andrés (✉) · S. R. Granados · T. G. Ramírez ·
M. del Carmen Campos Mesa
Physical Education and Sport Department, Universidad de Sevilla,
Seville, Spain
e-mail: ocastillo@us.es

S. R. Granados
e-mail: sanrome@us.es

T. G. Ramírez
e-mail: tgonzale@us.es

M. del Carmen Campos Mesa
e-mail: mccampos@us.es

Introduction

Knowledge of the processes of gender socialization and their relationship with academics and athletics has become a topic of great social interest. This interest has been reflected in high level publications on the subject of gender, as demonstrated by more than 75 articles about women, gender, and sport in the prestigious research journal *Sex Roles* (e.g., [Knoppers and McDonald 2010](#); [Rudy et al. 2011](#)). Within this area, the effect of teachers on gender socialization is a topic that has focused interest in several studies in Spain (e.g., [Bolaños and Jiménez 2007](#); [Castillo 2009](#); [Valdivia et al. 2010](#)) and internationally (e.g., [Chen and Rao 2011](#); [Lentillon et al. 2006](#); [Morgan 2001](#); [Staurowsky et al. 2007](#)). This study observes PE teachers' behavior in Seville, Spain, and its possible effect on the transmission of gender stereotypes through the use that is made of teachers' information. We wanted to assess whether teachers provide the same information in the classroom to boys and girls about channel of communication, use of demonstrations, task organization, group discipline, and questions asked, to establish their possible relationship with gender socialization.

This study may interest teachers since it provides them with a qualitative observation tool for their work environment. Therefore, it provides this knowledge area with a reliable diagnostic tool about the sexist interactions of teachers, offering the possibility of preventing gender inequities, an aspect that is of great social and educational interest. This tool presents an alternative to quantitative studies based on surveys; instead of collective data about what teachers say, it observes and assesses what they do. Previous studies have focused on a particular issue, such as the use of space or material, but several types of behaviors require observation if we are to gain a fuller picture of teachers' behavior. Finally, our study provides unique information about teachers' behavior in terms of their

gender, their relation with the learning unit, channels of communication and asking questions, variables not encountered in our review of the literature into the effect of teachers on the transmission of gender stereotypes.

We assume that the information PE teachers transmit has an important effect on shaping gender stereotypes. We used an observation sheet as the primary method of data collection because it enabled an open, exploratory, and interpretive study into the effect of teachers on gender socialization.

In current Spanish society, there are still many barriers that separate males and females. One of the most important is the transmission of sexism (Valdivia et al. 2010). This society, supported by a social patriarchal model, places the man as the family protector, and he assumes values, attitudes, and norms related to characteristics considered to be masculine (bravery, strength, and working capability). Meanwhile, it places the woman as learning to be a housewife, and she acquires feminine or expressive characteristics within her role (sensitive, delicate, submissive, self-sacrificing, etc.), all of which is still being transmitted today (Blández et al. 2007).

As a reflection of this social situation, the educational system demonstrates gender inequality by transmitting its stereotypes through a hidden curriculum, and, logically, physical education plays its part (Vera et al. 2009). As an example, PE in Spain clearly reinforces gender stereotypes by associating activities focused on strength, velocity, and aerobic endurance with boys whereas activities of flexibility and coordination are associated with girls (Valdivia et al. 2010). To address this social problem in Spain, the General Education Law of 1970 established coeducational schooling in public and private schools up until 16 years of age (Jiménez et al. 2002). Under a coeducational schooling model, two laws were passed in 2006 and 2007 to encourage schools to provide a gender-equitable educational experience: one on social equity (Organic Law 3/2007, March 22) and one on educational matters (Organic Law of Education 2/2006, May 3, together with its adaptations to each autonomous region; in this case Andalusia's Law of Education 17/2007, December 10).

Regarding these regulations, several authors have adopted coeducational approaches with the goal of eliminating gender differences within the classroom (Colás 2007; Rebollo et al. 2011). Along these lines, we have gone from understanding coeducation as joint education of the two genders in the same space (Aquesolo and Beyer 1992) to understanding it as an education that seeks development of the characteristics of each individual (Zagalaz et al. 2000). According to this, teacher education should follow the guidelines outlined by the process of European Convergence toward competency-based education (Carreiro da Costa 2009). However, in spite of these guidelines, Spanish secondary schools still bear witness to the widespread use of traditional teaching paradigms (Castillo 2009). These paradigms have objective-based programming for the differential educational treatment

between genders and for the teaching of athletic techniques. Given this traditional paradigm as a reference, the teachers of this educational process inherently give rise to sexist educational treatment (Paños 2007).

In fact, research in the United States (Davis 2003), Canada (Duffy et al. 2001), and France (Lentillon et al. 2006; Mosconi 1994) has demonstrated that teachers contribute to the process of creating gender inequality because they encourage male students more than their female peers or, for example, spend more time working with male students than females. Furthermore, male and female teachers do not contribute to gender inequities in the same proportions, as shown in Spain by Castillo and Corral (2011, in press) who found that male teachers gave greater qualitative and quantitative feedback to male students or Gutiérrez and López (2011) who revealed that female teachers responded less effectively to indiscipline. Outside Spain, several studies have emphasized the influence of teacher gender in the transmission of sexism in the classroom: for example, in the United States, Basow (2000) or Bellamy (1994) suggested that male and female teachers behaved differently in the classroom, and this difference was reflected in the behavior of their male and female students. This last conclusion is shared by authors such as Hopf and Hatzichristou (1999) and Trouilloud et al. (2002) in the European context of France and Greece, respectively.

In teacher-student interactions, one of the most important factors affecting the construction of gender identity is how the teacher uses information. From this point of view, there are various factors that allow us to take a closer look at the transmission of gender stereotypes. To identify these factors, we focused on two methods: one inductive, derived from direct observation of our classes, and the other deductive, from the studies done in Spain by Castañer and Guillén (1996), Castellano and Hernández (2003), Hernández et al. (2000), and Subirats and Tomé (1992). Once the factors had been determined, we grouped them and determined mutual exclusivity; this allowed us to discard those variables that provided redundant or unnecessary information (Anguera 2005). The resulting system was tested and adjusted, with the emphasis on its usefulness and validity for observation (Camerino 1999). Finally, the observation categories were established and defined in relation to the transmission of gender stereotypes in physical education classes through the information given by teachers to students.

Channel of Communication

In physical education, we can establish three channels of communication: auditory (explanation), kinesthetic (manipulation), and visual (demonstration). For the learning process based on the traditional paradigm, the teacher's use of the auditory channel is very important (Medina 2002). In Spain, auditory channel is based on a traditional use of the

masculine subject to refer to both males and females, resulting in a depreciation and subordination of the feminine gender (e.g., “you are weaker than a girl”), in greater nominative attention for the masculine gender, and in some stereotyped expressions (e.g., “girls are not good at soccer”) that are used to ridicule females (Blanco 2002; Castillo 2009; Cruz 2003; Lomas 2006; Moreno et al. 2006; Subirats and Tomé 1992; Valbuena 2002). Thus, we find studies in Spain that demonstrate a greater use of the auditive channel by PE teachers when communicating with boys than with girls (Posada 1999; Vázquez et al. 2000). This idea is supported in the context of the United States by Davis (2003). The kinesthetic channel (e.g., the teacher manually places the arms of the student in a suitable position to shoot a basket) is based on physical contact with the student. In Spain a study about the use of attitudinal reinforcement, Castillo and Corral (2011, in press), reports greater physical contact between PE teachers and male students. Finally, the visual channel is based on the information transmitted through an image or model that should be imitated. In PE classes in Spain, this model is more frequently a male (González Arévalo 2006).

Use of Demonstrations

In this case, we use a model for demonstration that is supposed to be imitated. In Spain, various studies have found that PE teachers generally call on male students to carry out demonstrations (González Arévalo 2006; Romero 2008; Vázquez et al. 2000). In the same context, an analysis of photographs published in secondary education PE text books, Táboas and Rey (2007) concluded that there is a prevalence of the use of males for images. Along these lines, Spanish research into the models shown in specialized publications on physical activity and sport concluded that they are generally male (Alfaro 2004; Frideres and Palao 2006; López and Castañer 2006).

Task Organization

We established three levels of analysis in relation to task organization: grouping of students (e.g., the teacher separates the males and females to carry out the tasks), use of materials (e.g., the teacher lets the male students use the better material), and use of space (e.g., the teacher lets the male students have more space).

Several studies in the United States have shown that the groups students form to carry out the tasks assigned by the teacher are inherently sexist (Bigler 1995; Bigler et al. 1997; Bigler and Liben 2007). A predominance of homogeneous groupings by gender has been found within secondary PE in Spain (Moreno et al. 2008; Vázquez et al. 2000).

Regarding the material that teachers give their students in PE classes, authors in Spain revealed definite sexist bias in favor of male students (Blández et al. 2007; Subirats and Tomé 1992). They found that in most cases boys take better material, use more of it, and use it for longer.

As for the use of space in PE classes, in the United States Brown et al. (1996) found discrimination towards females. In Spanish secondary education, various authors agree with this idea and point out that males use better spaces, which are larger and for longer (Cantó and Ruiz 2005; González Calvo 2006; Tomé and Ruiz 2002).

Group Discipline (Classroom Management)

The issue of disciplinary problems (e.g., two students fighting over material, not wanting to do assigned tasks, etc.) in Spanish schools has been covered by several authors who have highlighted a significant increase in recent years (Gutiérrez et al. 2010; Ochoa and Peiró 2010). This has been studied in other countries by authors such as Papaioannou (1998) in Greece and Wang et al. (2010) in the United States. In its relation to gender, some studies in Spain have found that teachers spend more class-time disciplining male students to correct disorganized participation, conflictive behaviors, and disobedience than they do with female students (Piéron and Brito 1990; Ochoa and Peiró 2010). What little research has been conducted in the context of Spanish secondary education has corroborated the tendency of male students to have a higher number of discipline or behavior issues than their female counterparts (Gutiérrez and López 2011).

Questions Asked

In our review of the literature, we did not find any studies taking this factor into account. With regard to questions, we wish to verify the discriminatory effect of the number of interrogative phrases that male and female teachers ask their male and female students. We presume that asking a certain group questions will encourage greater visibility, involvement, and motivation of this group in the task.

Consequently, according to the literature review, we presume that in Spanish secondary schools -the object of this study- there is transmission of sexism in favor of males, in the use that teachers make of the information regarding use of channel of communication, use of demonstrations, task organization, discipline, and questions asked.

Thus, if female students receive a different education in PE because of their sex, they suffer gender discrimination, reinforced by their evident invisibility which stems from the different teaching practices derived from the masculine concept of PE (Blández et al. 2007; Vázquez et al. 2000; Williams and Woodhouse 1996).

Therefore, the purpose of this study was to examine the actions of male and female teachers to assess how sexism is transmitted through the information they provide to their students. We drew up seven main hypotheses:

- Male teachers will use auditory channels (explanation) more when communicating with boys than with girls when students are working on sports abilities (Hypothesis 1).
- Female teachers are more likely to use male students to carry out demonstrations in sports abilities (Hypothesis 2).
- Male teachers will organize tasks by grouping students according to gender (Hypothesis 3).
- Male teachers will provide better material to boys when teaching sports abilities (Hypothesis 4).
- Male teachers will allow boys to use more space when working on sports abilities (Hypothesis 5).
- The group will be disciplined more frequently by female teachers and directed at male students (Hypothesis 6),
- Finally, male teachers will ask male students more questions (Hypothesis 7).

We tested these hypotheses with students in their first and second year of secondary education, aged 12–14. We chose this age range because it is an important period for the development of gender identity (Colás 2007).

Method

Sample

Convenience sampling (Salkind 1999) was used to select schools, teachers, and classes, depending on the accessibility of the teachers who were the target of this research. The data came from two public secondary schools in Seville (southern Spain) with a low to middle socioeconomic status. This allowed us to carry out the data collection needed for the proposed case study.

The sample of teachers consisted of two men and two women selected to represent both genders, they were all Spanish, White, and middle class. Their average age was 37.5 years ($SD=1.25$). They had the following professional profiles: teacher 1 (male) had a degree in Physical Activity and Sport Sciences and 4 years experience in secondary education; teacher 2 (male) specialized in PE and had 30 years experience in secondary education; teacher 3 (female) had a degree in Physical Activity and Sport Sciences and 20 years experience in secondary education; and teacher 4 (female) had a degree in Physical Activity and Sport Sciences and 8 years experience in secondary education. None of the teachers had received specific instruction on gender equity.

Individual meetings were held with all teachers to explain the basic characteristics of the research and find out whether the observation instrument could be applied in their classes.

Likewise, teachers were informed of the methodology that was going to be used to collect data (audio and video recording, as well as the observers' in-person data registry for the observation scales for each of the recorded sessions). After being informed of the research objectives and the protocol for data collection, all the teachers gave their written consent to be observed during the sessions.

The study involved 198 students (116 males and 82 females), aged between 12 and 14 ($M=13.1$, $SD=0.75$). All students and their parents were informed that they would be recorded on audio and video, and all agreed to participate. Students were also assured of the confidentiality of the recordings.

The ratio of students to teachers per classroom was 30:1. Table 1 shows the number of boys and girls in the male teachers' classes and in the female teachers' classes.

Procedure

Based on the proposals by Colás and Buendía (1998) regarding qualitative observational methodologies, the observational study began with the development of a category system. The coding scheme was reviewed and amended repeatedly by clustering similar codes, looking for overlaps, and eliminating redundancies. The codes were categorized and re-categorized until five themes emerged as a result of the categorization and clustering in the reiterative process of content analysis. The five themes were related to teachers' contributions to gender socialization and were the focuses of this paper. These categories were: channel of communication, use of demonstrations, task organization, group discipline, and questions asked.

Data collection used a coding sheet in four coed PE classes. A formal coeducational program to integrate female students was not established. The data were collected by nine observers, consisting of the researcher (male) and another eight observers (four males and four females), in the natural context of the PE sessions (sports tracks and gymnasium). The frequency of the behaviors was recorded. Data registry was supported by audio and video recordings of the analyzed lessons, and the data were

Table 1 Student's distribution in relation to the teacher's gender

| | Teacher 1 (male) | Teacher 2 (male) | Teacher 3 (female) | Teacher 4 (female) |
|---------------------------------------|---------------------|---------------------|-----------------------|-----------------------|
| Class 1 (Boys $n=65$; Girls $n=43$) | | | | |
| Boys, n | 14 | 10 | 23 | 18 |
| Girls, n | 16 | 20 | 7 | |
| Total, n | 30 | 30 | 30 | 18 |
| Class 2 (Boys $n=51$; Girls $n=39$) | | | | |
| Boys, n | | | 20 | 12 |
| Girls, n | 11 | | 10 | 18 |
| Total, n | 30 | | 30 | 30 |

recorded on the coding sheets during the PE classes (two 1 hr lessons per week). This systematic observation was carried out on 48 lessons. Learning units covered 24 sports abilities (related to volleyball, basketball, and acrosport) and 24 corporal expression abilities (related to dance choreography and theater) that were taught by these teachers. A total of 12 hr of class time was recorded for each teacher (6 hr of sports abilities and 6 hr of corporal expression).

Instrument

The coding sheet is part of an instrument called *Observation scale of teachers' educative equity with regard to gender* (Castillo 2009).

The coding sheet enabled us to collect data related to the discriminatory attitudes that teachers (both male and female) demonstrated through the information they gave to their students. The observers recorded the frequency that the following behaviors were directed towards male students, female students, or a mixed group: use of channel of communication, use of demonstrations, task organization, disciplinary measures, and questions asked.

The reliability of this observational study was demonstrated with the Kappa index, which was established for nine observers working independently while observing the same behaviors. Before data collection, the nine observers received specific training to ensure coherence and objectivity in their work. Therefore, each observer was given detailed definitions of the categories to be analyzed and how to record them (see "Appendix"). Once familiarized with the categories and the observation scale, they viewed the videos and recorded the data on the coding sheets. This was done over four 1 hr sessions (240 min total) to establish inter-observer reliability for each of the categories of analysis. The recordings produced Kappa index values of .81 for channel of communication, .95 for use of demonstrations, .84 for task organization, .75 for disciplinary measures, and .82 for questions asked. The reliability did not demonstrate bias due to gender of the observers.

All analyses were performed using the Statistical Package for Social Sciences (SPSS, version 13.0 for Windows; SPSS Inc., Chicago, IL), and the level of significance was set at $p < 0.05$. The normality of the variables was evaluated by the Kolmogorov-Smirnov test, which demonstrated the non-normality of the distribution of the variables.

Results

We used the Mann–Whitney test to compare the independent variables (gender of the teacher, gender of the students, and learning unit) with the dependent variables (channel of communication, use of demonstrations, task organization, group discipline, and questions asked). Standard descriptive statistics

(means and standard deviations) were applied to the data determined to be significant.

Our predictions were tested by observing four PE teachers with the following classroom characteristics: teacher 1 (male) was observed with a total of 60 students (55% male and 45% female); teacher 2 (male) was observed with 30 students (66.6% male and 33.4% female); teacher 3 (female) was observed with 60 students (71.7% male and 28.3% female); and, teacher 4 (female) was observed with 48 students (62.5% male and 37.5% female). The following results were observed.

Channel of Communication

We used the Mann–Whitney test to test our prediction that, male PE teachers would interact more with male students through the auditory channel when students are working on sports abilities. The students' gender was compared with the teachers' gender and learning unit. We found significant differences with regard to the masculine auditory channel of communication, or the auditory channel directed at male students, $\chi^2(df=1, N=48)=11.9, p=.001$. For female students, the following inferential data were found: $\chi^2(df=1, N=48)=7.9, p=.002$. When analyzing these data in relation to teachers' gender (Table 2), we found significant differences in the number of explanations given by male teachers to male students.

Concerning the learning unit, the Mann–Whitney test confirmed the significance of the auditory channel of communication when teachers address male students, $\chi^2(df=1, N=24)=6.6, p=.001$, and the whole group, $\chi^2(df=1, N=24)=5.5, p=.003$. The descriptive statistics (Table 3) showed that male teachers gave more explanations to male students when working on sports abilities.

Use of Demonstrations

To test our prediction that, female teachers would utilize boys for demonstrating sports abilities, we used the Mann–

Table 2 Descriptive analysis of channel of communication / teacher's gender

| Channel of communication | Male Mean (SD) ^a | Female Mean (SD) ^b |
|--------------------------|--------------------------------|----------------------------------|
| Masculine auditory | 13.79* (5.81) | 6.96 (6.18) |
| Feminine auditory | 6.60* (1.42) | 2.34 (2.44) |

Note: The systematic observation was carried out on 48 sessions; Masculine auditory=teacher's explanations to boys; Feminine auditory=teacher's explanations to girls; ^aMean of the number of male teacher's explanations to students; ^bMean of the number of female teacher's explanations to students

* $p < .05$

Table 3 Descriptive analysis channel of communication / learning unit

| Channel of communication | Sports abilities Mean (SD) ^a | Corporal expression Mean (SD) ^b |
|--------------------------|--|---|
| Male teacher | | |
| Masculine auditory | 16.79* (8.82) | 10.29 (8.84) |
| Group auditory | 18* (7.42) | 12.54 (6.83) |

Note: The systematic observation was carried out on 48 sessions (24 Sport abilities and 24 Corporal expression); Masculine auditory = teacher's explanations to boys; Group auditory = teacher's explanations to group; ^aMean of the number of male teacher's explanations to students on Sports abilities; ^bMean of the number of male teacher's explanations to students on Corporal expression

* $p < .05$

Whitney test to compare students' gender with the teachers' gender and learning unit. Significant differences were found concerning the use of models for demonstrations, $\chi^2(df=2, N=48)=26.286, p=.000$. The descriptive statistical analysis (Table 4) showed that female teachers used more male students to carry out demonstrations.

As for the relation of the learning unit to the selection of students to demonstrate a task proposed by the teacher, the application of the Mann–Whitney test showed remarkable levels of significance regarding female teachers' use of male students as models to demonstrate sports abilities, $\chi^2(df=1, N=24)=19.3, p=.015$. For female students, the inferential statistics demonstrated the following values: $\chi^2(df=1, N=24)=14, p=.005$. The descriptive data about the use of demonstrations (Table 5) showed that in sports abilities female teachers used more male students as models.

Task Organization

To test our prediction that male teachers would organize tasks for boys and girls differently in terms of groups, as well as give boys better material when practicing sport abilities, and give boys more space for sports abilities, we used the Mann–Whitney test to compare students' gender with teachers' gender and learning unit. We found significant differences concerning task organization, specifically

Table 4 Descriptive analysis use of demonstrations / teacher's gender

| Use of demonstrations | Male Mean (SD) ^a | Female Mean (SD) ^b |
|-----------------------|--------------------------------|----------------------------------|
| Boys | 2.15* (2.69) | 2.33* (2.38) |
| Girls | 1.27 (1.88) | 2.00 (1.86) |
| Group | .06 (.24) | 0 (0) |

Note: The systematic observation was carried out on 48 sessions; ^aMean number of times that a male teacher chooses a student or group to perform a demonstration; ^bMean number of times that a female teacher chooses a student or group to perform a demonstration

* $p < .05$

Table 5 Descriptive analysis use of demonstrations / learning unit

| Use of demonstrations | Sports abilities Mean (SD) ^a | Corporal expression Mean (SD) ^b |
|-----------------------|--|---|
| Female teacher | | |
| Boys | 3.88* (2.72) | .42* (1.06) |
| Girls | 1.27 (1.88) | .30 (.24) |

Note: The systematic observation was carried out on 48 sessions (24 sport abilities and 24 Corporal expression); ^aMean number of times that a female teacher chooses a student to demonstrate Sports abilities; ^bMean number of times that a female teacher chooses a student to demonstrate Corporal expression.

* $p < .05$.

for different grouping of students, $\chi^2(df=1, N=48)=5.4, p=.001$. According to these indicators the data in Table 6 show that male teachers grouped students differently depending on their gender.

With regard to the crossing of the task organization dimension with the learning unit dimension, the results of the Mann–Whitney test did not demonstrate significant differences in the use of materials in sports abilities, $\chi^2(df=1, N=24)=13.2, p=.125$, or in the use of space in sports abilities, $\chi^2(df=1, N=24)=13, p=.223$, by the male teachers during the various scheduled units. The descriptive analysis of these data showed that the male teachers did not give the best materials to male students and nor did they give them more space to do the tasks (Table 7).

Group Discipline

The Mann–Whitney test was used to test our prediction that female teachers would take more disciplinary action against male students, comparing the gender of students and teachers. Differences were found when teachers took disciplinary action against boys, $\chi^2(df=1, N=48)=8.2, p=.003$, and girls, $\chi^2(df=1, N=48)=4.8, p=.005$. The interpretation of data in Table 8 showed significant differences in the number of disciplinary measures taken by female teachers against male students compared to female students.

Table 6 Descriptive analysis task organization / teacher's gender

| Task organization | Male Mean (SD) ^a | Female Mean (SD) ^b |
|--------------------|--------------------------------|----------------------------------|
| Different grouping | .21* (.41) | 0 (0) |

Note: The systematic observation was carried out on 48 sessions; Different grouping=groupings imposed by the teacher according to the student's gender; ^aMean number of times that a male teacher forms groups according to student gender; ^bMean number of times that a female teacher forms groups according to student gender

* $p < .05$

Table 7 Descriptive analysis task organization / learning unit

| Task organization | Sports abilities Mean (SD) ^a | Corporal expression Mean (SD) ^b |
|----------------------|--|---|
| Male teacher | | |
| Same use of material | 6.25 (2.60) | 4.17 (1.16) |
| Same use of space | 6.17 (2.66) | 4.21 (1.17) |

Note: The systematic observation was carried out on 48 sessions (24 sport abilities and 24 Corporal expression); Same use of material= information that the teacher provides according to the student’s gender with regard to use of materials; Same use of space=information that the teacher provides according to the student’s gender with regard to use of space; ^aMean number of times that a male teacher provides the same material/space to each gender for Sports abilities; ^bMean number of times that a male teacher provides the same material/space to each gender for Corporal expression

Questions Asked

To test our prediction that male teachers would ask male students more questions than female students, the Mann–Whitney test was used to compare the gender of students and teachers. There were no significant differences, $\chi^2(df=2, N=48)=25.016, p=.272$. The descriptive statistics (Table 9) did not show any significant sexist differences about the gender of the students who were asked questions.

Discussion

This study describes Spanish teachers’ classroom interactions as an agent of sexism when transmitting the information related to PE lessons in secondary schooling. Its main finding is that there is evidence of discrimination in the following dimensions: channel of communication, use of demonstrations, group discipline, and task organization (grouping of students). On the other hand, there was no evidence of sexist discrimination in task organization (material and space) or in questions asked. We did not come across the learning unit, channel of communication and questions asked variables in

Table 8 Descriptive analysis indications about group discipline / teacher’s gender

| Group discipline | Male Mean (SD) ^a | Female Mean (SD) ^b |
|------------------|--------------------------------|----------------------------------|
| Boys | 2.08* (1.66) | 5.38* (3.83) |
| Girls | .17 (.48) | .54 (.72) |

Note: The systematic observation was carried out on 48 sessions; ^aMean number of disciplinary actions taken by male teachers towards students; ^bMean number of disciplinary actions taken by female teachers towards students

* $p<.05$

Table 9 Descriptive analysis question asked / teacher’s gender

| Question asked | Male Mean (SD) ^a | Female Mean (SD) ^b |
|----------------|--------------------------------|----------------------------------|
| Boys | 2.08 (1.66) | 2.03 (2.38) |
| Girls | 2.05 (.48) | 2.00 (2.86) |

Note: The systematic observation was carried out on 48 sessions; ^aMean number of questions asked by male teachers to students; ^bMean number of questions asked by female teachers to students

any studies in our review of the literature. The discussion of these variables will be of a general nature but with specific references to our own findings.

Likewise, this study has shown that male and female teachers behaved differently in the classroom. These data are consistent with the findings of other authors in Spain (Castillo and Corral 2011, in press), that also found that male teachers gave greater qualitative and quantitative feedback to male students, or Gutiérrez and López (2011) who revealed that female teachers responded less effectively to indiscipline. Outside Spain, Hopf and Hatzichristou (1999) in France and Trouilloud et al. (2002) in Greece suggested that male and female teachers behaved differently in the classroom. This last idea is shared by authors such as Basow (2000) or Bellamy (1994) in the United States.

Channel of Communication

The results obtained after the analysis and interpretation of the data, related to the channel of communication used by the teachers to give PE lessons, reveal that the auditory channel is clearly preferred as the main channel for communicating with their students. It was the most frequently used channel when teaching sports abilities.

In the same way, the frequency of use of the masculine auditory channel of communication, as well as the group auditory channel, leads us to confirm that males received more explanations during the analyzed lessons. The female students generally received information through the group auditory channel. Finally, it should be highlighted that male teachers gave more explanations to male students than female teachers did when teaching sports abilities (Hypothesis =1).

Therefore, if we take into account the analogy established between the auditory channel and the code of the language, and that both become the main elements for transmitting information to the students, the discriminatory use of this channel is clearly a way of transmitting sexism. This study has shown that females received less attention than males when it came to receiving information from teachers, especially male teachers; consequently, treatment was not equal during the lessons. From this point of view, we corroborate

the findings of authors such as Blanco (2002), Castillo (2009), Castillo and Corral (2011, in press), Cruz (2003), Moreno et al. (2006), Lomas (2006), Subirats and Tomé (1992), Valbuena (2002), and Vázquez et al. (2000) in Spain, and Davis (2003) in the United States, who demonstrated greater communication and support from teachers to male students. This has the effect of shrouding female students and is therefore a clear element of sexism within PE lessons.

Use of Demonstrations

Male students were used more often to demonstrate content within the practice of sports abilities, and female teachers used male students more often as models for demonstrations (Hypothesis =2). The reference models that the other students are supposed to “imitate” are transferred through the visual image. Our data show that if the focus of these references is limited to one gender, stereotyped and, therefore, sexist information is being transmitted. Therefore, this study confirms results found in such studies as Alfaro (2004), Frideres and Palao (2006), González Arévalo (2006), Romero (2008), Táboas and Rey (2007), and Vázquez et al. (2000) in Spain, Davis (2003) in the United States, Duffy et al. (2001) in Canada and Lentillon et al. (2006) in France, that also found that most demonstrations are carried out by male students, which is a significant factor for transmitting sexism in PE classes.

Task Organization

Concerning task organization and its relation to information, the analysis and interpretation of the corresponding data revealed that male teachers form different groups of students depending on their gender (Hypothesis =3). These data are consistent with the findings of other authors in the United States (Bigler 1995; Bigler et al. 1997; Bigler and Liben 2007) and in Spain (Moreno et al. 2008; Vázquez et al. 2000) who argue that classroom differentiation on the basis of gender is inherently sexist.

Likewise, we can state that for male teachers there was no difference between boys and girls in relation to the use of materials (Hypothesis ≠4) or space (Hypothesis ≠5) based on the learning unit for the various lessons. Consequently, we found no element of gender discrimination transmission within this dimension. These data contradict findings by Blández et al. (2007), Cantó and Ruiz (2005), González Calvo (2006), Subirats and Tomé (1992), Tomé and Ruiz (2002), and Vázquez et al. (2000) in Spain, who claim that male students utilize more space and better materials than female students.

Group Discipline

The analysis and interpretation of the data corresponding to the group discipline dimension (class management) revealed that female teachers took more disciplinary measures against male students in PE lessons at these secondary schools in Seville (Hypothesis =6).

By focusing these disciplinary measures on one gender, we are transmitting stereotyped and, therefore, sexist information about the behavior that is associated with a particular gender. Thus, a relationship between the negative, “naughty” attitude of the male students in the PE lessons is established, since they receive more reprimands in each session, especially if the session is taught by a female teacher. On the other hand, there are the female students with a more disciplined stereotype and less need for correction of non-compliant participation, conflictive behaviors, and disobedience. Therefore, this study confirms results found in such studies as Gutiérrez et al. (2010), Gutiérrez and López (2011), Ochoa and Peiró (2010) in Spain, Papaioannou (1998) in Greece, and Wang et al. (2010) in United States. Furthermore, our data complement those obtained by Fernández-Balboa (1991) in Spain and Piéron and Brito (1990) in France, who analyzed the moments at which the non-desirable conduct appeared, as well as their duration and frequency. They further complement the findings of Ochoa and Peiró (2010) and Piéron and Brito (1990), who were more interested in the actions of the teacher towards these behaviors.

Questions Asked

Our data show that there were no differences for male teachers when it came to asking boys or girls about aspects related to the task (Hypothesis ≠7). Generally, teachers addressed the whole group. Here our results differed from Davis (2003) in United States, Duffy et al. (2001) in Canada and, Mosconi (1994) and Lentillon et al. (2006) in France, who found that greater attention is given to male students.

A significant limitation to this study was the number of teachers taking part. However, in the research’s design and planning of objectives, we attempted to detect the reality of these teachers’ classes in two schools in Seville, southern Spain, to be able to correctly observe possible sexist behaviors that the PE teachers transmit.

While this sample prevents us from generalizing about the results, the observation instrument collects broader information than previous studies about sexist behaviors that teachers may use in class. The use of this observation scale will help teachers assess how they pass on information to their students in terms of transmitting sexism. This observation may lead teachers to examine themselves in a critical reflection of their own teaching behaviors in PE sessions, to reduce the discrimination that female students suffer in PE classes.

Conclusions

As far as the information that teachers give their students and the sexism transmitted through this information in the learning units is concerned, we can verify that the behavior of these physical education teachers from two secondary schools in Seville (Spain) is more likely to acknowledge the presence of male students and, therefore, transmit gender stereotypes in a PE classroom.

Regarding the channel of communication we observed that there is a greater use of the auditory channel with male students when the teacher is male and is teaching specific abilities in PE classes. In the dimensions about the use of demonstrations we observed that female teachers used male students more often as models for demonstrations of sports abilities. In turn, there were sexist behaviors by male teachers in task organization, as they grouped students by gender. This same dimension did not demonstrate sexist conduct of the male teacher towards female students in the use of

material or space regarding the different learning units. Concerning group discipline, we found that female teachers take more disciplinary measures and that they are more likely to direct them at male students. Likewise, we can state that the questions asked by the teachers did not present any sexist characteristics in the transmission of gender stereotypes.

In summary, to remove the sexist barrier built around the use of information provided by teachers, we defend the varied use of the auditory channel, both quantitatively and qualitatively, on the basis of non-sexist language addressed equally to both genders. Furthermore, the models used during the lessons need to be representative of both genders, and we have to find a way of providing disciplinary information to the group for a positive resolution of conflicts. Acting this way guarantees both genders equal access to the resources required to carry out the tasks assigned by the teachers in PE lessons, ensuring the same learning possibilities for male and female students.

Appendix

Coding categories

| | Channel of communication | Use of demonstrations | Task organization | Discipline of the group | Questions posed |
|---------------------|--|---|---|--|--|
| Categorical nucleus | Refers to the channel of communication (auditory, visual or kinesthetic) that the teacher employs to transmit the information to the student(s). | We recorded the number of occasions on which the teacher used a student for a demonstration or a model of a person of one sex in a photograph, video, etc. to support the information given. A group demonstration was defined as using a group from both sexes to demonstrate an action. | All information that the teacher provides to the students were recorded and differentiated according to the student's gender with regard to organizational aspects, with a focus on the groupings imposed by the teacher (e.g., the teacher groups males and females separately to work on the tasks), the information about materials (e.g., the teacher provides more and better material to male students), or the occupying of space (e.g., the teacher allows the male students to use the entire game space and spaces that are in better condition to carry out the planned activity). A group was defined as homogeneous when at least 75% of the | We recorded all information that the teacher gave to students concerning discipline to allow the normal progress of the session. His or her objective was to correct disorderly participation, conflictive conduct, and disobedience of students (e.g., a student does not want to do the activity proposed by the teacher, two students fight over material, etc.). | Asking a question took into consideration all interrogative phrases of any nature that the teacher made to the students, individually or as a group, throughout the session. |

(continued)

| | Channel of communication | Use of demonstrations | Task organization | Discipline of the group | Questions posed |
|-----------|--|--|--|--|---|
| | | | members were of the same sex, as proposed by the teacher. On the other hand, a heterogeneous group was defined as one that had approximately the same number of male and female students. With regard to material, we evaluated whether the teacher gave different instructions about the use of the material to be utilized in the tasks depending on whether he or she was interacting with female or male students. A differentiated use of the space for male and female students when executing a task was defined as when the space used was imposed by the teacher. | | |
| Purpose | To determine whether the teacher employs a differentiated channel of communication to transmit the information depending the student's gender. | This allows us to quantify the frequency with which the teacher employs students for demonstrations. | To analyze whether different types of information were given by the teachers to do with organizational aspects, depending on the student's sex. | To establish whether there was more attention given toward disciplining one specific sex. | To assess whether there were differences in the frequency with which the teacher asked students questions based on the gender of the student(s). |
| Registry | The type of channel that the teacher used to give information was recorded. The recipient's gender was also recorded. | The number of times that the teacher employs a student or an image of gender for a demonstration was recorded. | Each time the teacher provided different information for the male and female students, it was recorded. The aspect of group organization (groupings, material, or use of space) to which it referred was recorded. | We recorded the number of instructions that the teacher gave to control the activity of the students in a differentiated way during the session. | The number of questions asked by the teacher was quantified, and each time the sex of the student(s) was specified. |
| Procedure | Observers marked an X on the coding sheet by the channel and gender that corresponded to each piece of information every time the teacher gave information to a female or male student individually. The box for "group" was marked if the information was transmitted to the whole group. | The observers marked X on the coding sheet by the corresponding box when the teacher employed a student for a demonstration of a task. When a mixed group executed the demonstration, the box for "group" was marked. The total number of each group of students used in demonstrations (male, | The observers marked an S (same) or D (different) on the coding sheet by the corresponding boxes for material, space, and groupings each time the teacher provided different information for the male and female students. At the end of the session, the total number of differentiated pieces | The observers marked an X on the coding sheet by the corresponding box every time the teacher gave instructions to control or discipline a male or female student. When the instructions were to the whole group, the box titled "group" was marked. | The observers marked an X on the coding sheet by the corresponding box when the teacher asked a question to a male or female student or to the group in a differentiated way. |

(continued)

| | Channel of communication | Use of demonstrations | Task organization | Discipline of the group | Questions posed |
|-------------------------------|---|--|--|---|---|
| | | female, or groups) was also recorded. | of information given throughout the session was calculated. | | |
| Apéndice (in Spanish version) | | | | | |
| Categorías de codificación | | | | | |
| | Canal de comunicación | Uso de demostraciones | Organización de las tareas | Disciplina de grupo | Planteamiento de preguntas |
| Núcleo categorial | Se refiere al canal de comunicación (auditivo, visual o kinestésico) que el profesor emplea para transmitir la información al alumnado. | Se refiere al número de ocasiones en las que el profesor o la profesora hacen uso de un alumno o una alumna para realizar una demostración o bien emplea un modelo de un sexo concreto en fotografías, vídeos, etc., para apoyar alguna información. Se entenderá como demostración grupo cuando para ejemplificar la acción se utilice alumnado de ambos sexos. | Aquella información que el profesorado aporta a los chicos y a las chicas, haciendo distinciones por sexo en cuanto a diferentes aspectos organizativos, centrándonos en las agrupaciones propuestas (homogéneas o heterogéneas), la información sobre materiales o la diferente ocupación del espacio. Respecto a las agrupaciones entenderemos que un grupo es homogéneo cuando, a propuesta del profesor, un número superior al 75% de sus miembros sea de un mismo sexo. Por el contrario, consideraremos que un grupo es heterogéneo cuando contenga, aproximadamente, el mismo número de alumnos y de alumnas. Refiriéndonos al material, valoraremos si el profesor o la profesora plantean un uso diferenciado del material a utilizar en la tarea en función de que se dirija a las alumnas o a los alumnos. Se entenderá un uso diferenciado del espacio para los alumnos y para las alumnas en la realización de la tarea cuando la ocupación del mismo sea impuesta por el profesor. | Nos referimos a todas las indicaciones que el profesor o la profesora aportan al alumnado en relación a cuestiones de disciplina para permitir el normal desarrollo de la sesión. Su objetivo es corregir la participación desordenada, los comportamientos conflictivos y de desobediencia del alumnado. | Nos referimos a todas aquellas frases interrogativas, de cualquier naturaleza, que el profesor o la profesora realice a los alumnos, a las alumnas o al grupo entero a lo largo de la sesión. |
| Propósito | Determinar si el profesorado emplea un canal de | Cuantificar la frecuencia con la que el profesor o la profesora emplean | Analizar si existen diferentes tipos de informaciones dadas | Establecer si existe una mayor atención y control de la disciplina | Comprobar si existen diferencias por motivos de género en |

(continued)

| | Channel of communication | Use of demonstrations | Task organization | Discipline of the group | Questions posed |
|---------------|---|---|--|--|--|
| Registro | comunicación diferenciado, en función del género del alumnado, para transmitir la información. Registrarémos el tipo de canal que el profesorado utiliza para dar una información y el género con el cual ha utilizado dicho canal. | como modelos para una demostración a un alumno o a una alumna. Se registrará el número de veces que el profesor o la profesora empleen a un alumno o una alumna, o una imagen asociada a un género concreto, para realizar una demostración. | por el profesorado a su alumnado, relativas a aspectos organizativos, en función del sexo del alumnado. Se registrará cada vez que el profesor o la profesora planteen información diferente para los chicos y las chicas, indicando los aspectos de organización del grupo (agrupaciones, material y uso del espacio) a los que hace referencia. | hacia un sexo concreto. Se registrará el número de indicaciones que el profesor o la profesora realizan para el control de la actividad del alumnado durante la realización de la sesión. | la frecuencia con que el profesor o la profesora plantea preguntas a su alumnado. Se cuantificará el número de preguntas planteadas al alumnado, especificando en cada caso a qué sexo van orientadas o si van dirigidas al grupo entero. |
| Procedimiento | Los observadores marcarán con una X en el canal y sexo correspondiente, cada vez que el profesorado de una información a un alumno o a una alumna de forma individualizada. Marcaremos en la casilla de grupo si la información se transmite al grupo entero. | Se marcará en la hoja de observación cada vez que el profesor o la profesora empleen a un alumno o una alumna para realizar una demostración. En el caso de ser grupos mixtos los que lleven a cabo la demostración, marcaremos la casilla correspondiente a grupo. Contabilizaremos el total de requerimientos realizados a los alumnos, a las alumnas o al grupo. | Los observadores marcarán una I (igual) o D (diferente) en la casilla de la hoja de registro correspondiente al material, espacio o agrupación, cada vez que el profesor o la profesora planteen información diferente para los chicos y las chicas. | Los observadores señalarán con una X, en la casilla correspondiente de la hoja de registro, cada vez que el profesorado de una información para el control del grupo a un sexo concreto. Si la indicación es a todo el alumnado se registrará en la casilla grupo. | Se marcará con una X en las casillas que correspondan, hoja de observación, cada ocasión en la que el profesor o la profesora planteen preguntas a los alumnos, a las alumnas o al grupo de forma diferenciada. |

References

- Alfaro, E. (2004). El talento psicomotor y las mujeres en el deporte de alta competición. [Psychomotor talent and women in high-performance sports]. *Revista de Educación*, 335, 127–151.
- Anguera, M. T. (2005). Microanalysis of T-patterns. Analysis of symmetry/asymmetry in social interaction. In L. Anolli, S. Duncan, M. Magnusson & G. Riva (Eds.), *The hidden structure of social interaction. From Genomics to Culture Patterns* (pp. 51–70). Amsterdam: IOS Press. Retrieved from http://www.vepsy.com/communication/book6/1_03_Anguera.pdf
- Aquesolo, J. A., & Beyer, E. (1992). *Diccionario de las Ciencias del Deporte*. [Dictionary of Sports Sciences]. Málaga: Unisport.
- Basow, S. A. (2000). Best and worst professors: Gender patterns in students' choices. *Sex roles*, 43, 407–417. doi:10.1023/A:1026655528055.
- Bellamy, N. (1994). Bias in the classroom: Are we guilty? *Science Scope*, 17, 60–63.
- Bigler, R. S. (1995). The role of classification skill in moderating environmental influences on children's gender stereotyping: A study of the functional use of gender in the classroom. *Child Development*, 66, 1072–1087. doi:10.1111/j.1467-8624.1995.tb00923.x.
- Bigler, R. S., Jones, L. C., & Lobliner, D. B. (1997). Social categorization and the formation of intergroup attitudes in children. *Child Development*, 68, 530–543. doi:10.1111/j.1467-8624.1997.tb01956.x.
- Bigler, R. S., & Liben, L. S. (2007). Developmental intergroup theory: Explaining and reducing children's social stereotyping and prejudice. *Current Directions in Psychological Science*, 16, 162–166. doi:10.1111/j.1467-8721.2007.00496.x.
- Blanco, N. (2002). Educar mujeres y hombres. [Educating women and men]. *Otras miradas*, 2, 80–87.
- Blández, J., Fernández, E., & Sierra, M. A. (2007). Estereotipos de género, actividad física y escuela: La perspectiva del alumnado. [Gender stereotypes, physical activity and school: The perspective of the students]. *Profesorado. Revista de Currículum y Formación del Profesorado*, 2(11), 1–21.
- Bolaños, L. M., & Jiménez, R. (2007). La formación del profesorado en género. [Teacher training in gender]. *Revista de Investigación Educativa*, 25, 77–95.
- Brown, S., Brown, D., & Hussey, K. (1996). Promote equality in the classroom. *Strategies*, 9(6), 19–22.

- Camerino, O. (1999). Estudio de la interacción en un grupo de practicantes de actividad física. In M. T. Anguera (Ed.), *Observación en deporte y conducta cinésico-motriz: Aplicaciones. [Observation in sport and kinesic-motor behavior: Applications]* (pp. 129–160). Barcelona: Universidad de Barcelona.
- Cantó, R., & Ruiz, L. M. (2005). Comportamiento motor espontáneo en el patio de recreo escolar: Análisis de las diferencias por género en la ocupación del espacio durante el recreo escolar. [Spontaneous motor behaviour in school recess: Analysis of gender differences in the space use]. *Revista Internacional de Ciencias del Deporte*, 1(1), 28–45. doi:10.5232/ricyde2005.00103.
- Carreiro da Costa, F. (2009). La gestión del currículo a través de competencias: un enfoque desde el contexto portugués. [Managing the curriculum through competences: A focus from the Portuguese context]. *Tándem: Didáctica de la Educación Física*, 29, 8–27.
- Castañer, M., & Guillén, R. (1996). Cómo optimizar el discurso no-verbal del educador físico. Identificación y análisis de conductas significativas. [How to optimize the non-verbal discourse of the physical educator. Identification and analysis of significant behaviors] *Apunts: Educación Física y Deportes*, 46, 29–35. Retrieved from http://articulos-apunts.editec.com/46/es/046_029-035_es.pdf.
- Castellano, J., & Hernández, A. (2003). El análisis de coordenadas polares para la estimación de relaciones en la interacción motriz en fútbol. [Polar coordinates analysis to estimate the relationships in the motor interaction in soccer]. *Psicothema*, 15, 569–574.
- Castillo, O. d., (2009). *Evaluación de los factores psicosociales y didácticos relacionados con la equidad de género en educación física. [Assessment of psychosocial and didactic factors related to gender equity in physical education]*. (Doctoral Thesis, University of Seville, Seville, Spain). Retrieved from <http://fondosdigitales.us.es/tesis/tesis/935/evaluacion-de-los-factores-psicosociales-y-didacticos-relacionados-con-la-equidad-de-genero-en-educacion-fisica>.
- Castillo, O. d., & Corral, J.A. (2011, in press). El profesorado frente a la discriminación de género: uso de la retroalimentación. [Teachers from gender discrimination: The use of feedback]. *Cultura y Educación*, 23(4).
- Chen, E., & Rao, N. (2011). Gender socialization in Chinese kindergartens: Teachers' contributions. *Sex Roles*, 64, 103–116. doi:10.1007/s11199-010-9873-4.
- Colás, M. P. (2007). La construcción de la identidad de género: enfoques teóricos para fundamentar la investigación e intervención educativa. [The construction of gender identity: Theoretical approaches as the basis for educational research and intervention]. *Revista de Investigación Educativa*, 25, 151–166.
- Colás, M. P., & Buendía, L. (1998). *Investigación Educativa. [Educational Research]* (3th ed.). Seville: Alfar.
- Cruz, B. (2003). *En educación física... ¿no hay discriminación sexual? [In physical education... isn't there sexual discrimination?]*. México: Secretaría de Educación Pública.
- Davis, K. L. (2003). Teaching for gender equity in physical education: A review of the literature. *Women in Sport and Physical Activity Journal*, 12(2), 55–65.
- Duffy, J., Warren, K., & Walsh, M. (2001). Classroom interactions: Gender of teacher, gender of student, and classroom subject. *Sex Roles*, 45, 579–593. doi:10.1023/A:1014892408105.
- Fernández-Balboa, J. M. (1991). Beliefs, interactive thoughts, and actions of physical education student teachers regarding pupil misbehaviours. *Journal of Teaching in Physical Education*, 11, 59–78.
- Frideres, J. E., & Palao, J. M. (2006). Análisis de las noticias deportivas de dos periódicos digitales de España y Estados Unidos: ¿Promoción de la actividad física y el deporte? [Analysis of sports articles in online newspapers from Spain and the United States: Is there promotion of physical activity and sport?]. *Apunts*, 85, 7–14.
- González Arévalo, C. (2006). La Educación Física en la televisión: Cuéntame cómo pasó. [Physical Education on television: "Cuéntame cómo pasó"]. *Tándem*, 21, 28–35.
- González Calvo, G. (2006). Tratamiento educativo del sexismo dentro de la educación física escolar. [Educational treatment of sexism in school physical education]. In *I Congreso de Jóvenes Investigadores en Ciencias de la Actividad Física y el Deporte* (pp. 94–102). Valladolid: Universidad Europea Miguel de Cervantes.
- Gutiérrez, M., & López, E. (2011). Perceived teachers' strategies to sustain discipline, pupils' reasons for being disciplined, and pupils' behavior in physical education. *International Journal of Sport Science*, 22, 24–38. doi:10.5232/ricyde2011.02203.
- Gutiérrez, M., Ruiz, L. M., & López, E. (2010). Perceptions of motivational climate and teachers' strategies to sustain discipline as predictors of intrinsic motivation in physical education. *The Spanish Journal of Psychology*, 13, 597–608.
- Hernández, A., Bermúdez, M. A., Anguera, M. T., & Losada, J. L. (2000). CODEX¹: Un programa informático para codificación de registros observacionales. [A software program for coding observational records]. *Lecturas: Educación Física y Deportes. Revista Digital*, 18, february. Retrieved from <http://www.efdeportes.com/efd18/codex.htm>
- Hopf, D., & Hatzichristou, C. (1999). Teacher gender-related influences in Greek schools. *British Journal of Educational Psychology*, 69, 1–18. doi:10.1348/000709999157527.
- Jiménez, R., Ramos, L. A., & Cervelló, E. (2002). Análisis de la coeducación en las clases de educación física. Propuesta para una intervención no sexista en el contexto educativo. [Analysis of coeducation in PE classes. A proposal for non-sexist intervention in the educational context]. *Habilidad Motriz*, 18, 39–47.
- Knoppers, A., & McDonald, M. (2010). Scholarship on gender and sport in Sex Roles and beyond. *Sex Roles*, 63, 311–323. doi:10.1007/s11199-010-9841-z.
- Law of Education in Spain 2/2006. (2006). Pub. in Official Spain Bulletin 106 (May 4, 2006).
- Law for effective equality of women and men in Spain 3/2007. (2007). Pub. in Official Spain Bulletin 71 (May 23, 2007).
- Law of Education in Andalusia (Spain) 17/2007. (2007). Pub. in Official Andalusian Bulletin 252 (December 26, 2007).
- Lentillon, V., Cogérino, G., & Kaestner, M. (2006). Injustice in physical education: Gender and the perception of deprivation in grades and teacher support. *Social Psychology of Education*, 9, 321–339. doi:10.1007/s11218-005-5122-z.
- Lomas, C. (2006). En masculino y en femenino argumentos y orientaciones para un uso equitativo del lenguaje. In V. V. A. A. (Ed.), *Guía de buenas prácticas para favorecer la igualdad entre hombres y mujeres en educación. [Guide of good practices to encourage equality between men and women in education]* (pp. 32–42). Seville: Junta de Andalucía. Consejería de Educación.
- López, C., & Castañer, M. (2006). Investigar la lectura de la imagen fija publicitaria con relación al cuerpo y la actividad física. [Investigating the reading of publicity fixed image in relation to the body and the physical activity]. *Tándem*, 21, 8–16.
- Medina, A. M. (Ed.). (2002). *Manual de lenguaje administrativo no sexista. [Manual of non-sexist administrative language]*. Málaga: University of Málaga.
- Moreno, J. A., Hellín, P., & Hellín Rodríguez, M. G. (2006). Pensamiento del alumno sobre la Educación Física según la edad. [Students' opinion about Physical Education according to age]. *Apunts*, 85, 28–35.
- Moreno, J. A., Sicilia, A., Martínez, C., & Alonso, N. (2008). Coeducación y climas de aprendizaje en educación física. Aportaciones desde la teoría de Metas de Logro. [Coeducation and learning climates in physical education. Contributions from the Achievement Goals Theory]. *Revista Internacional de Ciencias del Deporte*, 11, 42–64. Retrieved from <http://www.cafyd.com/REVISTA/01104.pdf>.
- Morgan, C. (2001). The effects of negative managerial feedback on student motivation: Implications for gender differences in teacher-

- student relations. *Sex Roles*, 44, 513–535. doi:10.1023/A:1012286907894.
- Mosconi, N. (1994). *Femmes et savoir. La société, l'école et la division des saviors. [Women and knowledge. The society, the school and the division of knowledge]*. Paris: L'Harmattan.
- Ochoa, A., & Peiró, S. (2010). Estudio comparativo de las actuaciones de los profesores ante situaciones que alteran la convivencia escolar: el caso de Querétaro (México) y Alicante (España). [A comparative study of teachers' performance in situations which alter school coexistence: The cases of Queretaro (Mexico) and Alicante (Spain)]. *REIFOP*, 13(4). Retrieved from <http://www.aufop.com/aufop/revistas/arta/digital/155/1611>.
- Paños, J. L. (2007). *La identidad del Licenciado en Ciencias de la actividad física y el deporte en la Comunidad Valenciana, Pasado, presente y futuro. [The identity of the Graduate in Physical Activity and Sports Sciences in the region of Valencia: Past, present and future]* (Doctoral Thesis, University of Valencia, Valencia, Spain).
- Papaioannou, A. (1998). Goal perspectives, reasons for being disciplined and self-reported discipline in physical education lessons. *Journal of Teaching in Physical Education*, 17, 421–441.
- Piéron, M., & Brito, M. (1990). Analyse d'incidentes d'indiscipline survenant dans des classes de l'enseignement préparatoire (10–12 ans). In J. Duran, J. L. Hernández & L. Ruiz, L. (Eds.), *Humanismo y nuevas tecnologías en educación física y deporte. [Humanism and new technologies in physical education and sports]* (pp. 113–117). Madrid: INEF.
- Posada, F. (1999). Transversalidad y educación en valores en Educación Física [Mainstreaming and Values of Education in Physical Education]. *Revista de educación física: Renovar la teoría y práctica*, 74, 15–24.
- Rebollo, M. A., Vega, L., & García, R. (2011). El profesorado en la aplicación de planes de igualdad: Conflictos y discursos en el cambio educativo. [Teachers and the application of equality plans: Conflicts and discourses in educational change]. *Revista de investigación educativa*, 29, 311–324.
- Romero, S. (2008). Influencia del patrocinio y de los medios de comunicación en la discriminación del deporte de elite femenino. [The influence of sponsorship and the media on discrimination in top-level women's sport]. *Tándem: Didáctica de la Educación Física*, 28, 39–53.
- Rudy, R. M., Popova, L., & Linz, D. G. (2011). Contributions to the content analysis of Gender Roles: An introduction to a special issue. *Sex Roles*, 64, 151–159. doi:10.1007/s11199-011-9937-0.
- Salkind, N. J. (1999). *Métodos de investigación. [Research methods]* (3rd ed.). México: Prentice-Hall Hispanoamericana.
- Staurowsky, E. J., Hogshead-Makar, N., Kane, M. J., Wughalter, E., Yiamouyiannis, A., & Lerner, P. K. (2007). Gender equity in physical education and athletics. In S. Klein (Ed.), *Handbook for achieving gender equity through education* (pp. 381–410). Mahwah: Erlbaum.
- Subirats, M., & Tomé, A. (1992). Pautas de observación para el análisis del sexismo en el ámbito educativo [Observation guidelines for the analysis of sexism in the educational setting]. *Cuadernos para la Coeducación*, 2, 43–51.
- Táboas, M. I., & Rey, A. I. (2007). El cuerpo en las imágenes de los libros de texto de educación física: análisis de dos editoriales. [The body in PE text-book images: analysis of two editorials]. *Kronos*, 11, 10–15. Retrieved from http://www.revistakronos.com/docs/File/kronos/11/kronos_11_3.pdf.
- Tomé, A., & Ruiz, R. F. (2002). El espacio de juego: escenario de relaciones de poder. In M. L. Abad (Ed.), *Género y educación: La escuela coeducativa. [Gender and education: the coeducational school]* (pp. 79–88). Barcelona: Graó.
- Trouilloud, D. O., Sarrazin, P. G., Martinek, T. J., & Guillet, E. (2002). The influence of teacher expectations on student achievement in physical education classes: Pygmalion revisited. *European Journal of Social Psychology*, 32, 591–607. doi:10.1002/ejsp.109.
- Valbuena, A. (2002). Lenguaje e interacción. In A. García García (Ed.), *Materiales para la observación y el análisis del sexismo en el ámbito escolar. [Materials for the observation and analysis of sexism in the school setting]* (pp. 27–30). Gijón: Consejería de Educación y Cultura. Centro del Profesorado y de Recursos de Gijón.
- Valdivia, P. A., Sánchez, A., Alonso, J. I., & Zagalaz, M. L. (2010). La coeducación en el área de Educación Física en España: Una reseña histórica [Coeducation in spanish physical education: A historical review]. *Cultura, Ciencia y Deporte*, 14, 77–83.
- Vázquez, B., Fernández, E., & Ferro, S. (2000). *Educación física y género: Modelo para la observación y el análisis del comportamiento del alumnado y del profesorado [Physical education and gender: Model for the observation and analysis of the behavior of students and teachers]*. Madrid: Gymnos.
- Vera, J. A., Moreno, R., & Moreno Murcia, J. A. (2009). Relationships between the transfer of responsibility in assessment and the perception of equality in physical education classes. *Cultura, Ciencia y Deporte*, 4, 25–31.
- Wang, M. T., Selman, R. L., Dishion, T. J., & Stormshak, E. A. (2010). A tobit regression analysis of the covariation between middle school students' perceived school climate and behavioural problems. *Journal of Research on Adolescence*, 20, 274–286. doi:10.1111/j.1532-7795.2010.00648.x.
- Williams, A., & Woodhouse, J. (1996). Delivering the discourse—urban adolescents' perceptions of physical education. *Sport, Education & Society*, 1, 201–213. doi:10.1080/1357332960010205.
- Zagalaz, M. L., Arteaga, M., Cepero, M., Martos, M. M., Moreno, R., & Rodrigo, M. (2000). Los temas transversales, interdisciplinariedad y curriculum oculto en Educación Física. In M. L. Zagalaz & M. Cepero (Eds.), *Educación Física y su Didáctica. Manual para el maestro generalista. [Physical Education and Teaching. Generalist teacher's manual]* (pp. 293–318). Torredonjimeno: Jabalcuz.