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Article

Contributing to SDG Targets 4.5 and 5.5 during Physical Education Sessions: The Effect of a Collective Sports Intervention on Gender Attitudes

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Abstract: In recent years, the sustainability of the planet has been undermined. Education is the basis for raising awareness and is the engine for achieving attitudinal change among citizens. In terms of the social dimension, gender inequality is increasing, with it being common among children, and co-education aims to address this. Likewise, physical activity favors education and gender issues. Therefore, studying how physical education (PE) affects gender stereotypes can be analyzed in depth. This research analyzed whether a co-educational PE intervention improved students' gender beliefs, eliminated inequalities in universal education, and promoted women's full participation. For this purpose, 91 primary school pupils (42 females) completed the research. The mean age was 11.5 ± 0.7 years. A quasi-experimental, pre–post study was carried out with a control group and an experimental group. The sample was distributed by convenience among the pupils, using two instruments already used in other research studies: attitudes towards gender equality among primary school pupils and data collection on the internalization of gender stereotypes. For three weeks, the experimental group carried out a didactic intervention of four sessions of "Colpbol", among others. In turn, the control group followed the PE sessions without methodological variations. To analyze the normality of the results, the Shapiro–Wilk test was used and was confirmed to be non-parametric. To measure the effect of the intervention, the Mann–Whitney and Wilcoxon U tests were used. The statistics showed that the improvement in the experimental group was slightly more significant than in the control group after the intervention, with a significance of 0.022 for the social behavior variable, with a significance of 0.05. These results show the relationship between PE, sustainable development, and gender equality, linking to SDG 4 and 5 and contributing to targets 4.5 and 5.5.

Keywords: sustainability; gender equality; emotions; cooperation; stereotypes; physical education

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1. Introduction

A prosperous, sustainable, and balanced world requires gender equality [1]. The planet is currently experiencing a widespread crisis that is being addressed by the 2030 Agenda through the establishment of the 17 Sustainable Development Goals (SDGs) and 169 corresponding targets covering the social, economic, and environmental spheres [2]. To explain the origin of some of these environmental facts, it has been shown that they have an anthropogenic character [3]. Climatological consequences such as greenhouse gases, drastic temperature change, or extreme weather phenomena have been identified, as demonstrated by the World Meteorological Organization [4,5]. According to the words of UN Secretary General Guterres [6], this shows the need for a society that is aware of climate problems and works together to curb them and prevent further catastrophes. However, the term "sustainability" does not only encompass the environmentalist stance; society and the economy are also part of it and are equally affected [7]. These problems have

been exacerbated by the COVID-19 pandemic. Likewise, home confinement has led to sustainable progress in the environment, improving air and water quality and reducing greenhouse gas emissions [8], but it has also brought disadvantages such as increased food crises in underdeveloped countries, undermining all the progress achieved so far, increased unemployment, causing traumatic episodes for families and triggering psychological problems, often in children, and gender inequalities [4,5,9]. Discrimination against women has always been present throughout time, and even today women still suffer from wage gaps and a lack of leadership in high-level positions [10,11]. In order to achieve any change to overcome gender stereotypes and inequalities, it is essential to start at the grassroots. In this regard, education plays a fundamental role in building future citizens who will establish a pathway towards a society full of equal opportunities [12].

1.1. Education: An Essential Factor in Sustainable Development

For the 17 SDGs to be achieved by the target date, it is essential that environmental, economic, and social measures are consistently pursued at both individual and collective levels [13]. Following the first document that linked SD and education, the "Delors Report" [14] (p. 91), which declares among its objectives to achieve the sustainability goals, states that education becomes "the instrument that prepares for change", as Colom-Cañellas [15] points out. This is fundamental and unquestionable for SD, where educators are responsible for this evolution, capable of providing the transformative educational response for the SDGs, in conjunction with the remodeling of formal and informal educational processes and institutions [16]. SDG 4 is based on ensuring equal access to inclusive, equitable, and quality education and promoting lifelong learning opportunities for all, including for the most vulnerable people, setting targets such as free education and universal literacy, as detailed in target 4.5. The Global Action Programme (GAP) dedicates Area 3 to developing the capacities of educators and establishes the need to incorporate education for sustainable development (ESD) into the teaching profession, both in-service and pre-service, with the aim of increasing the number of ESD-competent teachers [16]. Thus, it is important for teachers to acquire this new knowledge and these new skills and orientations; otherwise, it will be impossible to cope with new environmental and socio-economic challenges [17]. In other words, teacher education is the fundamental tool for transformation to take place [18]. In this way, ESD should serve as a driver of the SDGs to reform society, empowering every individual in society and providing them with skills and competencies for lifelong learning to end the aforementioned drawbacks, involving present and future generations [19]. The aim is to achieve education centered on action, placing the student at the center of interactive learning in order to evolve towards fair, democratic, decarbonized, sustainable, and inclusive societies [8]; this approach includes the promotion of respect, peaceful coexistence, and equality through co-educational schools [20]. Accordingly, Aragonés González, in agreement with Heredero [21], explains that co-education is an educational model based on a mixed school whose main objective is to train students regardless of gender, leaving aside stereotypes and highlighting the positive aspects of each person. Therefore, to reach an individual's potential, a comprehensive education that promotes gender equality is needed [21]. If co-education is introduced and promoted from an early age, inequalities could be eliminated in the near future.

1.2. Social Dimension of Sustainable Development: Co-Education at School

Co-education is a cross-cutting content in the academic curriculum, which should be implemented at all levels and adapted to the diverse psycho-evolutionary characteristics of the students. Especially at the time that children begin to socialize and develop values, the aim is to promote an education that guarantees respect, coexistence, tolerance, and self-esteem [12]. For this reason, each of the subject areas of the school are responsible for analyzing the relationship between their contents and their potential cooperation with SD in general and with gender education in particular. It is essential that students become the protagonists of their own learning and educators guide the learning process

according to students' rhythms and abilities, moderating discussions and promoting critical thinking [8]. In this respect, legislation implements disciplines such as social and civic values [22], which reflect objective aspects to create citizenship rooted in values related to global responsibility, such as equal rights, respect, tolerance, consideration for diversity, respect for the environment, and all types of equality, including gender equality [23]. In some example studies, many school subjects aimed to implement SD in their classes in terms of environmental resources in natural sciences [24] or promoting ecological habits in plastic and visual education [25]. On the other hand, as far as the social dimension is concerned, in some cases, didactic interventions are carried out in the area of citizenship and human rights, which is related to social and civic values and aims to make students aware of the gender inequalities that exist today and the struggle that women have been waging for years to eradicate these inequalities to understand the concepts of patriarchy, equality, and co-education and to put the latter two into practice [26]. On the other hand, didactic units (DDUU) implement active methodologies, placing the students at the center of their own learning, such as cooperative play, with the recreation of real situations in which to integrate attitudes of equality [27]. In physical education, a lot of research has focused on how gender inequality is emphasized through pedagogical practice; therefore, identifying good practices is essential [28].

1.3. The Role of Physical Education in Gender Equality

When analyzing the subjects' curriculums with respect to their affinity to SD in order to develop the 17 SDGs at school, physical education (PE) stands out for its great capacity to contribute to the aforementioned goals. These are divided into 169 targets, 68 of which link sport to SD, as set out in the Sixth International Conference of Ministers and Senior Officials Responsible for Physical Education and Sport [29], and specifically related to physical education, there are 24 suitable goals to be implemented in the classroom [30]. Moreover, most PE teachers agree with the contribution of this subject with SDGs 3 and 4, but also with SDGs 5 (gender equality) and 16 in a secondary way [31,32]. Furthermore, as shown by Baena-Morales and González-Víllora [28], based on UNESCO, there are certain competencies that are related to the promotion of SD through PE, such as systems thinking, anticipation, normative, strategic, collaborative, critical thinking, and self-awareness. Therefore, PE and sport represent elementary rights for everyone to establish equal opportunities [33]. In addition, women's sport promotes the elimination of gender biases, and children who play sport achieve higher educational outcomes [34]. Therefore, PE and sport are means to promote peace, tolerance, respect, health, education, and social inclusion goals and to empower women and young people [35].

Considering the UN establishment, equality between men and women is an elementary human right in order to live in a peaceful, prosperous, and sustainable world, on which there have been numerous advances in recent years despite the fact that today there are still stereotypes in which the male gender predominates over the female gender [36] Following the links that have shown that education could be a fundamental tool to end environmental, social, and economic problems, school PE could be a means to minimize gender inequality and prejudice [31]. According to the Manifesto for Equality and the Participation of Women in Sport, it is decreed that PA and the opportunities that sport offers are the weapon with which to overcome the stereotypes and prejudices that make it impossible for both men and women to develop according to their own expectations and potential and, likewise, PA promotes co-education in the educational and sporting environment with the participation, praxis, and incorporation of boys and girls in each of the activities. Alcalá and Garijo [32] also state that PE is essential for the creation of a competent, reflective, empathetic, and supportive student body, as activities are carried out in which cooperative, relational, and motivational work is required to increase equality between both genders. PE offers the opportunity to acquire values and skills such as equality, respect, solidarity, tolerance, housework, violence prevention, non-sexist PA, and mutual respect through co-education [37]. This is why teachers have a great responsibility, as they are in charge

of putting these resources into practice so that students can develop in a fair and equal environment for all in every aspect and so that gender equality is automatic [31]. It is also necessary for teachers, particularly PE teachers, to evaluate the learning that has been acquired in addition to tests that assess physical and sporting conditions [32]. Co-education seeks equal academic, professional, and social opportunities, where no human being has any disadvantage or barriers based on their gender. For this reason, thanks to PE, PA, and sport, the prejudices developed throughout history about female incapacity and male abilities are annulled, as they are reaffirmed by studies that show the almost non-existent differences in the ages included in PE [37]. Physical education is linked to several of the 17 SDGs and specifically with number five, gender equality, which through nine targets aims to "achieve gender equality and empower all women and girls".

1.4. Objectives and Hypotheses

In view of the above, it is considered that research on targets 4.5 and 5.5 of the SDGs could be contributed to from the perspective of PE. Since PE is a source that promotes gender equality, it is considered that by working on co-education with activities in a DDUU, the aim is to ensure that physical differences are not a reason for exclusion or inclusion in the different sports and trades, intervening in the socio-cultural factor, behavior and social responsibility and competencies and capacities (H1). It is also hoped that students will play and participate in group sports with mixed groups in order to influence the socio-cultural, relational, personal, and emotional variable (H2) and that they will be able to perceive any type of gender inequality, alluding to the body, emotions, and skills and abilities factor (H3). The aim is to verify whether a sequence of PE activities based on cooperation and co-education is a useful resource for making progress in terms of body stereotypes, social behavior, skills and abilities, emotions, affective expression, and social responsibility. Next, the aim is to evaluate the effect of a group sports intervention on the factors corresponding to the internalization of stereotypes and attitudes towards gender equality by PE students, as already mentioned above. Likewise, the aim is to assess attitudes on socio-cultural, relational, and personal aspects after such collective and heterogeneous sports participation. In this way, the aim is to end all forms of discrimination against all women and girls worldwide, to eliminate gender differences and prejudices in education, and to ensure equal access to all levels of education and vocational training to guarantee women's full participation and equal opportunities for leadership in political, economic, and public spheres and, in doing so, promote women's empowerment.

2. Materials and Methods

2.1. Design

The following section sets out the details of the representative study which was carried out in order to corroborate the hypotheses and objectives mentioned above, as well as to ascertain the position of PD pupils with regard to gender equality. This is a quasi-experimental intervention, carried out with a control group and an experimental group, with a pre–post measurement and a non-randomized allocation of the sample to these groups for the convenience of the pupils.

2.2. Participants

The sample of participating subjects was drawn from four classrooms in the sixth year of primary education at CEIP Padre Manjón (Elda, Alicante). The study was carried out with students with an average age of 11.5 $\pm$ 0.7 years. A total of 91 students (42 females) participated; 48 students belonged to the experimental group (22 females) and 43 belonged to the control group (20 females).

2.3. Procedure

For the development of this study, two of the four classes will be part of the control group, which will follow the normal PE routine. On the other hand, the other two will be

the experimental group, which will carry out the intervention proposal to be analyzed. As for the action put into practice, this is divided into three parts.

This section may be divided by subheadings. It should provide a concise and precise description of the experimental results, their interpretation, as well as the experimental conclusions that can be drawn. This intervention was carried out during the month of January 2022.

Stage 1. Initial assessment

The first part consisted of providing the students with an initial questionnaire prior to the start of the sessions in order to find out the starting point of each session and one questionnaire on the topic (Figure 1). All students were informed about the aims of the study. In the same way, their parents or legal guardians were also informed and signed an informed consent form for the transfer of data for scientific use. The study design respected the ethical aspects presented in the Declaration of Helsinki. This research was approved by the ethics committee of the University of Alicante with the code UA-2022-03-17.

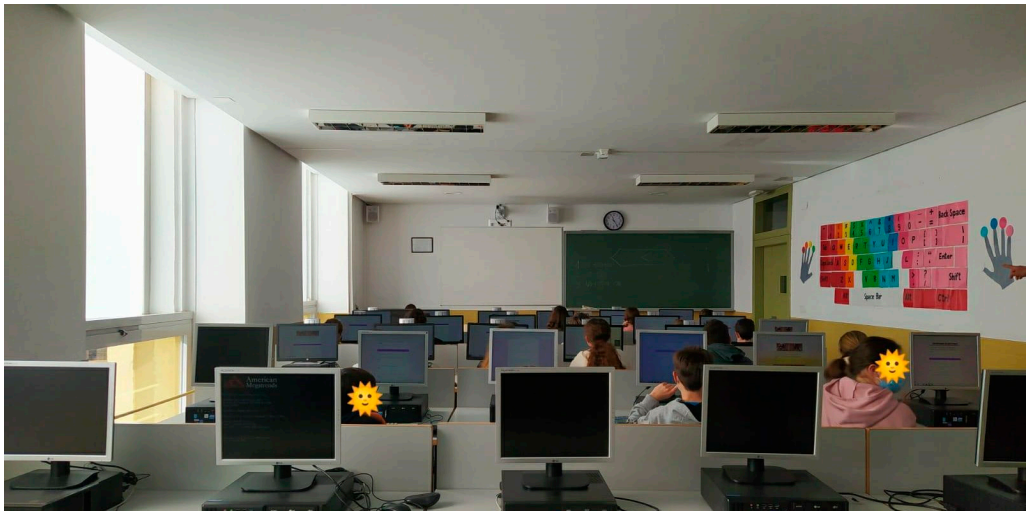

Figure 1. Providing the students with an initial questionnaire prior to the start of the sessions.

Stage 2. Intervention

After the elaboration of the questionnaire, four different sessions will take place. Each one of them has a specific purpose in order to achieve and confirm the objectives and hypotheses already proposed. In the first session, they will participate in games and work on the basis of a video showing the evolution of PE and sport throughout history and the participation of women in it. Secondly, the alternative sport "Colpbol" will be practiced. In the next class, the aim is to develop debate and consensus among the students after showing them two different materials, with the aim of choosing a sport or game for each resource and, subsequently, choosing to play one or the other individually. Finally, in groups, a co-operative and co-educational sport or activity is developed.

Stage 3. Final evaluation

Once the sessions have been carried out, the same questionnaire is used. This is used to observe what has been learned, whether all the objectives to be compared have been achieved, whether the students have modified their thinking thanks to the intervention of the DDUU, or, on the contrary, whether they maintain their judgment.

2.4. Instruments

As mentioned above, before and after the teaching intervention, the students were given a questionnaire. This tool is designed on the basis of two surveys but used in a complementary way.

2.4.1. Attitudes towards Gender Equality of Primary School Pupils

The first instrument focuses on a questionnaire on the opinions of primary school pupils regarding gender equality and attitudes towards gender equality among primary school pupils and is an adaptation of the one already developed by García et al. [38]. The validation values of the questionnaire are estimated through the calculation of Cronbach's alpha coefficient (0.81).

This questionnaire allows students' self-positioning, and thirty Likert-type items can be identified, where the number 1 means completely agree and 3 means disagree. These are divided into three dimensions, taking the theoretical perspective of gender:

- Socio-cultural level
- Relational level
- Personal level

2.4.2. Data Collection on the Internalization of Gender Stereotypes

The second instrument is called data collection on the internalization of gender stereotypes. This is classified according to Ortega [39] and is made up of twenty-two items, the dimensions of which are:

- Body
- Social behavior
- Competencies and capabilities
- Emotions
- Affective expression
- Social responsibility

This questionnaire enables students' self-positioning through dichotomous questions, so that to answer they must mark with an X in the "Yes" box if they agree or, on the contrary, mark "No". As established by Bravo and Moreno [39], this intervention instrument has been adapted by the contributions of other authors. Among them, Bonino's beliefs and imperative mandates, Freixas' feminine subjectivity, Bourdieu's morality as a study of gender identity, and Rebollo's [39] field of emotions stand out. The reliability of the instrument was estimated by calculating a Cronbach's alpha coefficient of 0.78, with a confidence level of 95.5% for the total number of items that make up the scale.

2.5. Data Analysis

Each of the continuous variables in the data set were subjected to a normality test (Shapiro–Wilk). The results were also subjected to a quasi-experimental study and a univariate statistical test for non-parametric samples, specifically the Mann–Whitney U test, to assess the differences between the groups (EXP vs. CON) on two occasions: pre and post intervention. The significance level was set at $p < 0.05$ on all occasions. The statistical programs Statistics Product and Service Solutions (IBM® SPSS® Statistics Version 24.0.0.0) (International Business Machines Corp., Madrid, Spain) and Microsoft Excel® in its 2016 version (Microsoft Corp., Redmond, WD, USA) were used. The results are based on students' negative, positive, and neutral responses to stereotypes and students' behaviors towards gender equality.

3. Results

3.1. Descriptive Analysis

The following table includes all the descriptive data of one of the instruments used for the collection of the results. In the pre-test control group, the highest scoring item is the second item of the personal factor: professions null for women, and the lowest is the last item: professions suitable for women. In the post control, the highest scores are the third of the socio-cultural factor: football, the fourth of the relational factor; relationships of boys, and the first of the personal factor: humiliating housework. In the experimental pre-test group, the highest is the second item of the personal domain: professions null for women,

and the lowest is the last one; professions suitable for women. As for the pre-experiment group, the highest rating is the third item of the socio-cultural domain: Football and the fourth item of the relational domain: relationships of boys, and the lowest is the ninth item of the first factor, i.e., equal football (Table 1).

Table 1. Descriptive analysis for the questionnaire on attitudes towards gender equality among primary school pupils.

	Control (n = 43)		**Experimental (n = 87)**	
	Pre	**Post**	**Pre**	**Post**
Factor 1. Socio-cultural				
Household chores	2.93 (0.3)	2.81 (0.5)	2.79 (0.5)	2.78 (0.5)
Clothing and color	2.93 (0.3)	2.89 (0.4)	2.89 (0.4)	2.92 (0.4)
Football	2.91 (0.4)	2.98 (0.1)	2.92 (0.4)	2.97 (0.2)
Games	1.16 (0.5)	1.11 (0.3)	1.14 (0.5)	1.10 (0.3)
Protection	2.26 (0.8)	2.65 (0.6)	2.45 (0.7)	2.61 (0.6)
Childcare	2.86 (0.5)	2.72 (0.6)	2.82 (0.5)	2.66 (0.7)
Equal domestic chores	1.07 (0.3)	1 (0)	1.07 (0.3)	1.05 (0.3)
Driving	2.86 (0.5)	2.81 (0.5)	2.75 (0.6)	2.75 (0.5)
Equal football	1.05 (0.3)	1.02 (0.2)	1.07 (0.3)	1.02 (0.15)
Gender equality	1.09 (0.4)	1.11 (0.4)	1.12 (0.4)	1.07 (0.3)
Factor 2. Relational				
Social relations	2.19 (0.7)	1.95 (0.8)	1.94 (0.7)	1.84 (0.7)
Male strength	2.80 (0.5)	2.86 (0.4)	2.8 (0.5)	2.76 (0.5)
Girls' relationships	2.91 (0.3)	2.91 (0.3)	2.9 (0.3)	2.87 (0.3)
Boys' relationships	2.95 (0.21)	2.98 (0.2)	3 (0.2)	2.97 (0.2)
Male leadership	2.81 (0.4)	2.84 (0.4)	2.84 (0.4)	2.80 (0.5)
Male violence	2.77 (0.4)	2.81 (0.5)	2.58 (0.7)	2.72 (0.6)
Female confidence	2.74 (0.5)	2.77 (0.5)	2.70 (0.5)	2.68 (0.5)
Weakness	2.93 (0.3)	2.87 (0.5)	2.94 (0.2)	2.86 (0.5)
Disrespecting female opinion	2.67 (0.6)	2.81 (0.4)	2.59 (0.6)	2.69 (0.6)
Verbal violence	2.77 (0.4)	2.88 (0.3)	2.64 (0.6)	2.74 (0.5)
Factor 3. Personal				
Humiliating domestic chores	2.90 (0.4)	2.98 (0.2)	2.94 (0.3)	2.94 (0.3)
No professions for women	2.98 (0.1)	2.93 (0.3)	2.96 (0.3)	2.91 (0.3)
Female dress	2.91 (0.4)	2.93 (0.3)	2.89 (0.4)	2.89 (0.4)
Maintaining economy (male)	2.88 (0.3)	2.80 (0.5)	2.85 (0.5)	2.78 (0.5)
Housework (women)	2.93 (0.3)	2.88 (0.3)	2.89 (0.4)	2.76 (0.6)
Motherhood and family	2.53 (0.7)	2.70 (0.6)	2.48 (0.7)	2.55 (0.7)
Non-sexualized toys	1.19 (0.6)	1.19 (0.5)	1.24 (0.6)	1.23 (0.6)
Respected choice of play	1.28 (0.7)	1.58 (0.9)	1.44 (0.8)	1.74 (0.9)
Male advantages	2.87 (0.5)	2.58 (0.6)	2.69 (0.6)	2.59 (0.6)
Professions suitable for women	1.02 (0.1)	1.05 (0.2)	1.02 (0.2)	1.05 (0.2)

The following list shows the total descriptive data of the second questionnaire used to collect responses. It can be seen that in the pre-test control group, the highest scoring item is the first item of competencies and capabilities: technical tasks (male), and the lowest is the fourth item of affective expression: competitive attitudes (male). In the post-test control group, the first, second, and sixth competencies and capabilities items are the highest scoring: technical tasks (men), organizational tasks (women) and technical VET for boys and the third emotions item is the lowest: resolving conflicts by fighting. In the pre-experiment group, the sixth item of competencies and capabilities stands out again as the highest rated: Technical VET for boys and the fourth item of affective expression as the lowest, i.e., competitive attitudes (male). As for the post-experiment group, the highest rating is again the factor of competencies and capabilities with the fifth item: social VET for girls, and for the lowest rating, the third item of affective expression stands out: woman capable of consoling (Table 2).

Table 2. Descriptive analysis of the data collection questionnaire on students' beliefs.

Items	Control (n = 43)		Experimental (n = 87)	
	Pre	Post	Pre	Post
Factor 1. Body				
Male attractiveness	1.88 (0.3)	1.88 (0.3)	1.89 (0.3)	1.87 (0.3)
Female attractiveness	1.98 (0.2)	1.91 (0.3)	1.95 (0.2)	1.92 (0.3)
Female appearance and beauty	1.81 (0.4)	1.91 (0.3)	1.80 (0.4)	1.86 (0.3)
Factor 2. Social behavior				
Bold behavior (male)	1.84 (0.4)	1.86 (0.4)	1.81 (0.4)	1.80 (0.4)
Discreet behavior (female)	1.88 (0.3)	1.88 (0.3)	1.89 (0.3)	1.79 (0.4)
Factor 3. Competencies and skills				
Technical tasks (men)	2 (0)	1.95 (0.2)	1.99 (0.1)	1.92 (0.3)
Organizational tasks (women)	1.91 (0.3)	1.95 (0.2)	1.86 (0.4)	1.92 (0.3)
Arts careers for girls	1.91 (0.3)	1.84 (0.4)	1.91 (0.3)	1.87 (0.4)
Science careers for boys	1.98 (0.2)	1.93 (0.3)	1.95 (0.2)	1.93 (0.3)
Social vocational training for girls	1.93 (0.3)	1.93 (0.3)	1.93 (0.2)	1.95 (0.3)
Technical vocational training for boys	2.37 (3.1)	1.95 (0.2)	2.15 (2.1)	1.94 (0.3)
Factor 4. Emotions				
Crying is ridiculous (men)	1.95 (0.2)	1.93 (0.3)	1.97 (0.2)	1.94 (0.3)
Crying is normal (women)	1.84 (0.4)	1.72 (0.5)	1.73 (0.4)	1.66 (0.5)
Resolving conflicts by fighting	1.44 (0.5)	1.67 (0.5)	1.53 (0.5)	1.55 (0.5)
Resolving conflicts through dialogue	1.37 (0.5)	1.74 (0.4)	1.37 (0.5)	1.60 (0.5)
Factor 5. Affective expression				
Showing affection	1.98 (0.2)	1.91 (0.3)	1.88 (0.3)	1.89 (0.3)
Holding hands	1.95 (0.2)	1.95 (0.2)	1.90 (0.3)	1.93 (0.3)
Woman are able to comfort	1.60 (0.2)	1.74 (0.4)	1.43 (0.5)	1.52 (0.5)
Competitive attitudes (male)	1.35 (0.5)	1.74 (0.4)	1.41 (0.5)	1.62 (0.5)
Tendency to love (woman)	1.47 (0.5)	1.77 (0.4)	1.46 (0.5)	1.76 (0.4)
Factor 6. Social responsibility				
Supporting the economy (men)	1.93 (0.3)	1.91 (0.3)	1.95 (0.2)	1.91 (0.3)
Housework and family (female)	1.95 (0.2)	1.88 (0.3)	1.89 (0.3)	1.85 (0.4)

3.2. Comparative Analysis

After examining the Shapiro–Wilk normality test, it was observed that all the dependent variables were significant ($p < 0.05$), with the exception of one, the personal variable post, which was normal. For these reasons, a non-parametric analysis was carried out, which is demonstrated by the Mann–Whitney (Table 3) and Wilcoxon tests (Table 4).

The first test is the Mann–Whitney U test, and it is used to establish comparisons between groups. In this case, the experimental and control groups. A descriptive analysis was carried out for the questionnaires. Data collection took place on the internalization of gender stereotypes and the attitudes towards gender equality of primary school pupils in the pre- and post-phase for both groups, at a significance level of 0.05. After analyzing the test statistics and focusing on significance, it can be seen that there is hardly any difference between the two groupings.

However, the dependent variable relational pre and relational post and emotions and affective expression post have a significance lower than the named amount, so in such circumstances, dissimilarities were found between the two groupings. After observing the average range, the highest figures can be seen in the control group of students.

This was followed by the Wilcoxon signed-rank test, in which the possible alterations produced between the pre and post of each group could be studied. In other words, it makes an intra-group comparison.

To perform this, the test statistics were observed, where all the dependent variables, except for three, were not significant as they were greater than the figure of 0.05. On the other hand, the social behavior of the experimental group and the emotions and affective expression of the control group were modified. In the former, a higher number of negative ranges were observed. The opposite is true for the other two groups, both of which have a higher number of positive ranges.

Table 3. Differences between the control and experimental groups on the initial and final measures for the gender attitude variables measured.

	Pre N = 91				Rank Average	
	EXP	**CON**	**Z**	**Sig.**	**EXP**	**CON**
Sociocultural	48	43	−0.088	0.930	46.22	45.76
Relational	48	43	−2.065	0.039	40.65	51.76
Personal	48	43	−0.803	0.422	44.00	48.23
Body	48	43	−0.573	0.566	44.88	47.26
Social behavior	48	43	−0.594	0.552	44.88	47.26
Competencies and skills	48	43	−0.996	0.319	44.04	48.19
Emotions	48	43	−0.126	0.899	46.31	45.65
Emotional expression	48	43	−1.807	0.071	41.41	51.13
Social responsibility	48	43	−0.966	0.334	44.42	47.77
Post N = 87						
Sociocultural	44	43	−1.869	0.062	39.35	48.76
Relational	44	43	−2.666	0.008	36.94	51.22
Personal	44	43	−0.599	0.549	42.43	45.60
Body	44	43	−0.078	0.938	43.85	44.15
Social behavior	44	43	−1.749	0.080	40.50	47.58
Competencies and skills	44	43	−0.028	0.978	43.94	44.06
Emotions	44	43	−2.659	0.008	37.18	50.98
Emotional expression	44	43	−3.483	<0.001	35.03	53.17
Social responsibility	44	43	−0.970	0.332	42.34	45.70

Table 4. Effect of group-sport-based interventions without gender bias for the experimental and control groups on gender attitudes in the experimental and control groups.

		Experimental			Control		
Factors		***N***	***Z***	***Sig.***	***N***	***Z***	***Sig.***
Sociocultural pre/post	Positive ranges	18	−1.210	0.226	11	−0.413	0.680
	Negative ranks	11			16		
	Ties	15			16		
Relational pre/post	Positive ranks	22	−0.326	0.744	17	−0.349	0.727
	Negative ranks	19			20		
	Ties	3			6		
Personal pre/post	Positive ranks	18	−0.083	0.934	12	−0.847	0.397
	Negative ranks	19			18		
	Ties	7			13		
Body pre/post	Positive ranks	7	−0.276	0.782	7	−0.295	0.768
	Negative ranks	9			8		
	Ties	28			28		
Social behavior pre/post	Positive ranks	11	−2.292	0.022	7	−0.226	0.821
	Negative ranks	5			7		
	Ties	28			29		
Competencies and skills pre/post	Positive ranks	9	−0.413	0.680	9	−0.600	0.548
	Negative ranks	8			7		
	Ties	27			27		
Emotions pre/post	Positive ranks	16	−0.530	0.596	9	−2.070	0.038
	Negative ranks	16			20		
	Ties	12			14		
Expression	Positive ranks	14	−1.550	0.121	10	−2.900	0.004
	Negative ranks	22			24		
	Ties	8			9		
Affective expression pre/post	Positive ranks	8	−0.626	0.531	5	−1.043	0.297
	Negative ranks	7			4		
	Ties	29			34		

4. Discussion

As the High Commissioner's Plan of Action for the 2030 Agenda decrees [40], sport occupies a fundamental place in contemporary societies, as it affects health, education, culture, gender issues, and integration issues. SD should therefore take this reality into account and use it to its advantage [41]. Equally, sport is inextricably linked to other human rights [35]. Therefore, the aim of this research is to examine the effects produced by a didactic application in PE to achieve the acquisition, by students, of a more prudent lifestyle through co-education, excluding any situation of discrimination against the female gender, eliminating prejudices between sexes, reinforcing equal access in the educational sphere, and guaranteeing the insertion of women in any environment, thus promoting their empowerment. Some previous studies supported in other areas have shown concern about this same issue, with them analyzing the responses of boys and girls separately. In this case, the results were compared between the experimental and control groups, who received different instructions, and on the variations caused in the pupils' responses in the pre- and post-intervention questionnaire. The data acquired showed that the control group only showed changes between the pre- and post-intervention analysis in emotions and affective expression, as the figures were significant ($p < 0.05$) and this is due to the fact that, as their name indicates, they have not had any teaching intervention; therefore, no changes can be seen in the rest of the variables. However, the same occurs with the experimental group; there are only variations between the data before and after the teaching intervention in social behavior, which, despite having a higher negative range, is a positive result. This may be due to the fact that the school carries out many activities, from the earliest age levels, on the same subject on which this study was based, gender equality, and a co-educational methodology was used. It is for this reason that, although the experimental group enjoyed the teaching practice, it was not something innovative for them and, as a consequence, a lot of differences were not observed. Likewise, it can be seen how the data of the dependent variables pre and relational and emotions and affective expression post are significant; therefore, there is a difference between the groups. In addition, the four variables coincide in that they belong to the control group; this is due to the fact that this group of students was intervened as the experimental group was. This study hypothesized that teaching performance would improve students' awareness of gender equality. According to the results obtained, it can be confirmed that, in part, the premises were not fulfilled, so this intervention is not adequate to improve the aspects already mentioned. According to the data obtained, the experimental group seemed to be more aware, compared to the control group, of social behavior and had less internalized gender stereotypes in sport, thus confirming H2.

In this sense, other research has also analyzed how gender stereotypes are internalized, with a generally positive result in favor of equality [38]. Despite this, they highlight adverse aspects on a socio-cultural level, as there are more children who responded in the affirmative and the perseverance of macho ideas in society, such as the idea that women perform domestic tasks better, that pink objects are for them, and that they should be under male protection. The same occurs in the intervention that was carried out in this case, as more sexist thoughts are perceived in this same variable by the control group. Going back to the data presented by Baena-Morales and González-Víllora [28], there is a greater tendency towards inequality in personal content, as there is generally a masculine way of thinking that has repercussions on women's relationships and motherhood. As in the study with the control and experimental group, these two also show an inclination towards such sexist beliefs. Next, in the relational variable, there are not so many differences between the responses of the boys and girls. On the contrary, in this research there is evidence that the control group thinks, to a greater extent, that boys are stronger, physically and mentally, and that girls are weaker. As far as Bravo and Moreno's analysis [39] is concerned, a higher percentage of internalization of stereotypes is obtained by male students. Just over a third of the subjects answered the questions related to the body positively, supporting physical and beauty stereotypes. The same is true of the results obtained in the study between the

control and experimental groups, as the responses of both groups affirm the internalization of prejudices regarding the body and also affective expression. Half of the students in Bravo and Moreno's analysis [39] confirm the existence of differences in social behavior depending on gender. Regarding competencies and skills, the students agreed that women are more able to study degrees related to the arts and social services, while men are more able to study science and technology. On the contrary, in the co-educational study of FE, in social behavior, competencies and skills, and responsibility, there are more students in the two groups, the experimental and the control, who do not show internalization of these stereotypes. Finally, with regard to emotions and social responsibility, the implementation of gender-related archetypes is also evident, both in the study by Bravo and Moreno [39] and in the study carried out in this research.

After this study, it can be concluded that the experimental group that received teaching intervention improved with respect to the control group, although not to a great extent. Despite the great promotion of gender equality at the school and despite having developed a co-educational intervention with the experimental group, the results are not as expected, since there is evidence of the permanence of some gender stereotypes. For this reason, it can be deduced that, to this day, our patriarchal society continues to affect, albeit indirectly, many people. Furthermore, it would be interesting to carry out future research on the different thoughts between the genders in order to check the level of empowerment or machismo between them. It is essential that this type of research is carried out, especially in this age range, as their socialization is increasing and should be egalitarian and peaceful. Moreover, they will soon want to go to school or work, and the acquisition of these gender differences may even influence their choice of future occupations. In addition, with regard to the limitations encountered throughout the intervention, it should be noted that the samples were acquired by convenience and not randomly. In addition, in the questionnaire, attitudes towards gender equality in primary school pupils, validation values were not found. Finally, it is worth mentioning that the objectives established during this final degree project were acquired maturely and gradually over time. Since it is a process of maturational development, the indicators of achievement will be established through the correct understanding and comprehension of the subsequent work carried out together with the students. In short, it is not a question of specific objectives merely based on a scale of items to be overcome at a specific moment, but of a process of reflection and maturation on the importance of the objectives and contents included in this project, so that the importance of the project is understood.

5. Conclusions

Education for SD is now incorporated into many schools and is being developed in almost all subjects. PE stands out as one of the main areas promoting gender equality. Therefore, with the development of a co-educational teaching proposal in PE classes, it would be possible to work on SDG targets 4.5 and 5.5. After comparing the analyses applied to the sixth-grade students, we found that the results of the experimental group, and therefore the knowledge acquired, were slightly more positive than those of the control group. The fact of encouraging the detection of any discriminatory situation in order to avoid gender inequality would explain, in part, the egalitarian capacity of the pupils. This study has shown how the intervention implemented with these pupils helps them to progress in their social behavior. On the other hand, it is not able, in its entirety, to meet all the objectives. That is to say, to improve the variables of competencies and abilities, emotions, affective expression, social responsibility, and the socio-cultural, relational, and personal aspects. After this intervention, the level of acquisition of gender stereotypes by the youngest children has been revealed. Education is the basis for change and, as Freire [42] said, we all have potential, but it is the educator who acts as an intermediary to bring about this transformation.

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