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Article

# Pre-Service University Training, Body Expression and Self-Concept

M. Rosario Romero-Martín <sup>1,\*</sup> and Daniel Caballero Juliá <sup>2</sup>

<sup>1</sup> Department of Musical, Plastic and Corporal Expression, Faculty of Health and Sports Sciences, University of Zaragoza; 22001 Huesca, España; rromero@unizar.es (M.R.R.M)

<sup>2</sup> Department of Musical, Plastic and Corporal Expression, University School of Teaching, University of Salamanca; 49029 Zamora; España; dcaballero@usal.es (D.C.J.)

\* Correspondence: rromero@unizar.es; Tel.: +34-974-238-422

**Abstract:** Body Expression (BE) has been defined in the past decades as a discipline within Physical Education (PE) with very particular characteristics and a strong emotional component. In this study, a programme of this discipline was applied to university Physical Activity and Sports Sciences (PASS) students from six consecutive academic years: three prior to and three during the pandemic. A pre-post design was used to determine how the BE programme affected the university students' self-concept (SC). To do so, a questionnaire with a multidimensional approach to this construct was administered, whose dimensions were closely related to the BE programme's characteristics. The results revealed significant improvements in the final SC, compared to the initial SC. Men reported lower SC values than women before the programme implementation, but higher at the end. Therefore, the change was larger in men, so the programme may have had an equalising effect between groups. It was also verified that the pandemic had particularly affected women.

**Keywords:** body expression; self-concept; pre-service training; physical activity; physical education; COVID-19 pandemic; emotions

## 1. Introduction

Education goals have evolved throughout history from almost exclusive attention to cognitive outcomes to greater concern about social and emotional outcomes. Nowadays, emotion plays a prevalent role. The multiple intelligences [1], the advancement of neuroscience and the findings of educational research from various knowledge areas have focused on emotional factors in education. In the field of physical activity (PA), previous studies have confirmed that certain types of motor practices trigger different emotions, and have described how this affects the emotional intensity experienced by the subjects [2], as well as their effect on different human being's aspects, such as the self-concept (SC).

### 1.1. Body Expression: Motor Expression

Body Expression (BE) is a discipline that studies motor expression, which combines expressive, communicative and aesthetic aspects. As such, it has been defined in the last few decades in Spain. After a long period during which it was considered a 'hotchpotch' [3] and acknowledging it continues to have a marginal role [4], its scope is now clearly defined and distinguished from other expression disciplines like dancing, mime, musical aerobic activities, aesthetic sports, etc., and its practice follows consistent internal logics.

Romero-Martín [5] defined it as the discipline which studies the organised forms of motor expression, based on a holistic body concept that promotes the creation of an own language through symbolisation and creativity processes. The practice intends to express or externalise feelings or ideas, as well as to develop motor communication and movement aesthetics. Its aims are to learn skills and to discover body meanings, but also to improve the well-being with one's own and others' bodies and to enhance personal development.

Everything seems to indicate that BE is associated with emotion through the situations generated during practice [6], contributing with its working techniques to the participants' psycho-emotional balance [7] and helping to build personal identity and autonomy by means of the symbolic game [8].

### 1.2. BE: Inhibition and its Potential Factors in PASS students

The nature of BE practice leads to certain challenges in the education context. Caballer, Oliver and Gil [9] verified in their study that teachers with experience in BE detected inhibition and refusal in the participants, which they attributed to the obstacles they found in their education and to a self-imposed protecting block. All this hinders the natural expression of emotions and generates a superficial BE experience, especially in those participants with limited knowledge of their own bodies. Bara [10] referred to these blocks as BE mediators.

One of the reasons that may influence inhibition and refusal is the lack of skills frequently shown by participants during this type of practice. In physical activity-specific literature, possessing motor skills was identified with physical achievements associated with efficacy, usually related to sports skills. In that context, self-efficacy as a psychological variable has been widely examined. According to Bandura [11], it consists in the trust in your own abilities to organise and execute actions that will solve future situations. Various authors agreed that having high self-efficacy has a positive influence on motivation and determines the amount of effort and persistence that a person puts into the activity performed [12]. In BE, the achievement lies in the ability to externalise or communicate feelings or ideas, and a low SC has a negative impact.

Additionally, the students of the Degree in Physical Activity and Sports Sciences (PASS), the population of the present study, usually have little experience in BE. In a wider context, the social imagery of this degree is more associated with sports movement than with expressive or aesthetic movement, reflected in the fact that many students report little efficacy or skills in this field. It is challenging to change these perceptions, which can be mainly achieved through determined support to students to help improve their self-efficacy, as proposed by Bandura [13].

Another reason may be the identification of these practices with female stereotypes, so gender reveals as an important variable when talking about BE. Related literature evidenced that motor expression activities are linked to gender stereotypes [14,15,16, 17] because they involve behaviours that have traditionally been associated with women, such as plasticity, aesthetics or creativity. By contrast, these are inhibited when sports practice is proposed [18], which is usually associated with male stereotype characteristics: strength, endurance and motor skills. The identification with the female generates initial refusal in individuals who like sports, mostly men, who become a major methodological challenge for teachers. Moreover, the study by Romero-Martín [5] revealed that gender was one of the key factors in inhibition in BE. Likewise, Durán, Lavega, Sáenz de Ocáriz, Costa and Rodríguez [18] confirmed the influence of gender on inhibition.

All the above can be summarised in the cycle 'fear + embarrassment + low skill perception + expectations → inhibition → refusal', which teachers should try to counter.



**Figure 1.** Proposed factor model that may explain students' initial behaviour

Romero-Martín [5] analysed the factors involved in this inhibition in university Physical Education students by examining the behaviours that hindered body expression and communication. Five factors that summarise the above were defined using qualitative techniques: (1) to be seen in public; (2) to be seen dancing in public; (c) physical contact due to physical, psychological or sex-role-related aspects; (4) to send messages that make us more well-known and vulnerable; and (5) lack of motor skills.

In short, the low self-perceived motor expression skills plus the embarrassment and fear of exposing their bodies and themselves due to multiple factors are part of a human being's SC construct. All this allows us to describe a model to understand the emotional lattice of BE practice.

### 1.3. Positive Effects of BE Practice

As previously described, we are referring to a motor practice with high emotional content which produces intense affective reactions [19], sometimes negative (fear, embarrassment) [4], especially at the beginning of the programmes [20].

Nevertheless, in addition to the emotional reactions mentioned, BE practice generates very positive experiences, reported by the students during and after the programmes [4]. It was confirmed that it made the students feel well with themselves and with others [21], the embarrassment decreased progressively and the level of social skills increased [22]. All these reactions produced personal satisfaction that affected the self-concept, as explained by Sonstroem, Weis, Sander, Sorensen, Stewart and Corbin (in Caballer, Oliver & Gil, [9], p. 2). Similarly, Sánchez [23] observed a relationship between BE and certain SC aspects, as shown by Lavega in his extensive work. Various authors highlighted the importance of implementing this type of practice since it provides the participant with information that allows them to know themselves better [24], due to its emotional intensity.

Consequently, it is deemed important to include BE in the educational system since it contributes to the improvement of students' SC [25]. Numerous studies based on the research by Shavelson, Hubner and Stanton [26] have yielded broad evidence in all fields of the influence of SC on PA practice in the past few years. SC has been associated with performance, but also with the attitude (persistence or withdrawal) towards physical activity practice and towards expectations [13], which affect the student's predisposition towards certain PA contents such as BE.

This emotional lattice influences SC just as SC determines the students' emotional reactions in a bidirectional process, possibly similar to the 'virtuous cycle' described by Correa et al. [27] (p.174), composed of SC and other factors. This is not a unidirectional, but a reciprocal or bidirectional causal relationship, as proposed by [28] for SC and academic performance.

#### 1.4. *Self-Concept, Multidimensionality*

SC is considered to be one of the most determining variables in personality, especially from a motivational or emotional point of view [29].

Shavelson, Hubner and Stanton [26], in a major work, defined SC as a person's perception of himself, which is "formed through his experience with his environment [...] and influenced especially by environmental reinforcements and significant others." Thus, "one's perceptions of himself are thought to influence the way in which he acts, and his acts, in turn, influence the way in which he perceives himself" (p. 411). Navajas [25], based on Bandura, referred to SC as the global view someone builds of themselves on the basis of their experience and the significant assessment others make of them and their behaviours. González-Pienda, Núñez, González and García [29] defined it as the image someone has of themselves depending on the integration of external and internal information, which is judged and assessed according to the individual's reasoning style about the significant aspects of that information, with a strong emotional component. In short, whether we talk about perception, image or global view of themselves, SC refers to the inner space an individual builds and rebuilds based on their own actions and how they make their perceptions of themselves fit with the information received from the context.

*Multidimensionality.* There is plentiful specific literature devoted to SC's internal structure. According to Pabago [30], there are two main models: one that understands SC as a global one-dimensional construct, and a multidimensional one composed of various structures that relate to different behaviour areas. Fdez-Zabala et al. [31] stated that multidimensionality had been broadly accepted since the 1970s, in agreement with Sanabrias-Moreno, et al. [32].

Based on this multidimensional perspective, Shavelson, et al. [26] developed a four-dimension model: academic, social, physical and emotional, which has been widely used by distinguished researchers, such as Harter [33], who focused on the educational aspect, and others. Starting from here, several authors have proposed other SC dimensions. For example, Goñi, Ruiz and Rodríguez [34] mentioned five dimensions: general, general physical, physical skills, physical fitness and physical attractiveness; while Fdez-Zabala et al. [31] defined eleven dimensions: academic-verbal, academic-mathematical, physical skills, physical fitness, physical attractiveness, physical strength, honesty, emotional adjustment, autonomy, self-realisation, social responsibility and social competence.

Due to all this, and considering that a person's SC cannot be seen but must be inferred [26], the different models have led to questionnaire proposals and research studies involving all or some of their dimensions (see [31], p.14). In particular, the physical dimension has been widely analysed in research about physical activity, the area our study belongs to. One of the most well-known proposals was made by Fox and Corbin [35], consisting in a four-dimension model: sports competence, physical fitness, strength and physical attractiveness. This is the basis of the Physical Self-Perception Profile (PSPP) questionnaire, extensively adapted and published.

Nonetheless, various authors pointed out that multidimensionality needs to be adapted to the specific situation's characteristics and they defended the importance of associating the concept with specific situations [26]. Therefore, SC's physical dimension as it has been previously defined by authors does not completely address our study subject. BE cannot be exclusively explained by Fox and Corbin's dimensions (sports competence, physical fitness, strength and physical attractiveness) or reduced to Blanco's [36] model's motor competence and physical attractiveness. By contrast, dimensions focused on affective-emotional aspects should be taken into account to explain how BE, as we have defined it, affects SC. Consequently, we needed to search for more specific models and questionnaires that match the BE construct's internal logic.

We found that the questionnaire proposed by Caballer, Oliver and Gil [9] contained dimensions that addressed aspects similar to the theoretical construct which is the basis

of the curriculum of the university course in which this study will be conducted. Therefore, this questionnaire was chosen to try to understand how PASS students' self-concept changed after the implementation of a one-semester BE intervention programme.

### 1.5. COVID-19 Pandemic and PA Practice

The present work proposed a six-year longitudinal study to analyse how the COVID-19 pandemic may have affected students' self-reported SC.

Starting in March 2020 and due to COVID-19, in-person lessons at Spanish universities were necessarily substituted by virtual sessions [37], including practical lessons. This was done thanks to the audiovisual means university and students put in place. In the following academic year (2020-2021), practical lessons were conducted on-site, with face masks and in half-sized groups that alternated with each other every other week. In the academic year 2021-2022, face masks were used during most of the programme and were removed towards the end. The pandemic seriously affected three academic years by dramatically changing students' social routines [37]. This was been confirmed in previous studies, which reported anxiety, depression and stress among the population [38]. Cadena-Duarte [39] (p. 50) stated that these confinement-related health issues may alter the perception of physical SC and psychological well-being. This influenced the development of behavioural, social and affective skills that consolidate through the interpersonal interaction process [37] since the possibilities of having physical contact, sharing ideas among groups, or learning collaboratively were reduced or disappeared, as well as other emotional aspects that are highly involved in body expression and communication. All in all, and with regard to SC, it seems logical to think that a change in the context conditions and between-subject habits will lead to a change in self-perception [30].

Due to all the above, we present a study on self-concept in relation to motor expressive-communicative activity practice in order to gain knowledge on how this factor behaves in PASS students. Consequently, the aims of this study were:

1. To analyse the influence of a BE programme on university PASS students' SC, and to reveal which SC dimensions are more strongly affected and how.
2. To study SC changes depending on gender.
3. To examine the effect the COVID-19 pandemic may have had on SC in a specific university context.

## 2. Materials and Methods

### 2.1. Design

A single-group, pre-post [40], quasi-experimental [41] study was designed to compare the results from a questionnaire administered before and after a Body Expression intervention programme. It was a quantitative study, both cross-sectional, because two measurements were taken from the same group of students in one academic year, and longitudinal, because the data from six consecutive academic years were analysed.

### 2.2. Population

La muestra, no probabilística, fue elegida por conveniencia [42] y por proximidad a la misma. Estuvo compuesta por los estudiantes del primer curso del Grado en CC de la AF y el Deporte (GCCAFD) de una universidad pública española, que cursando un programa de Expresión Corporal (EC) dieron su consentimiento para participar en el estudio. Correspondían a seis cursos consecutivos: tres anteriores a la pandemia (2016/2017, 2017/2018 y 2018-2019); y los tres afectados por esta (2019/2020, 2020/2021, y 2021-2022).

Los estudiantes matriculados y participantes de cada curso, en función de las variables pandemia y género se muestran en la Tabla 1.

**Table 1:** Students participating in the study

Year	Academic year	Affected by the pandemic	Participants		
			% Women	% Men	N
1	16-17	no	23,5	76,5	51
2	17-18	no	28,6	71,4	56
3	18-19	no	16,4	83,6	61
4	19-20	si	25,4	74,6	63
5	20-21	si	23,9	76,1	67
6	21-22	si	26,5	73,5	68
TOTAL			24	76	366

### 2.3. Instruments

The questionnaire Scale for Body Expression/Communication for university students [9] was administered. The authors followed the steps to validate the questionnaire: (1) Theoretical concept definition; (2) Instrument analysis (SDQ III, STAI, ISRA, MMPI, EPQR and MPS were reviewed); (3) Assessment by professionals (judge system, with eight experts from four Spanish regions with at least eight years of experience teaching BE at university); (4) First scale creation with 142 items divided into 6 factors; (5) Second analysis by the judges: the items with a between-judge agreement of 75% or above were accepted. As a result, the final scale was obtained. Subsequently, descriptive statistics and the corrected homogeneity index were calculated. In addition, internal consistency was determined through Cronbach's alpha. The six dimensions yielded values between 0.74 and 0.87, all higher than 0.7, the value usually established as valid. The total questionnaire reliability was 0.87.

An 8-point Likert-type scale was used, where 1 meant 'definitely false' and 8 'definitely true'. Direct and reverse items were combined to prevent answering trends. Finally, the dimensions (factors) and the corresponding items were:

- (1) A=Physical appearance, referred to physical attractiveness regarding beauty or body structure, among others (items 1, 5, 13, 20 and 26);
- (2) H=Body expression/communication skills, BE-specific skills and contents (items 3, 6, 15, 21 and 26);
- (3) E=Emotional, emotional control aspects: anxiety, nervousness, optimism, depression, tension and level of concern about things (items 2, 8, 9, 22 and 25);
- (4) P=Problem solving, individual's creativity to combine ideas, enjoy and be interested in inventing new ways of solving problems, pleasure in imagination and originality (items 16, 18, 23, 24 and 29);
- (5) M=Relationships with people of the same sex, ability to establish relationships with people of the same sex (items 4, 7, 10, 12 and 19); and
- (6) O=Relationships with people of the opposite sex, ability to establish appropriate relationships with people of the opposite sex (items 11, 14, 17 and 27). The reverse items were: 2, 5, 8, 9, 11, 12, 17 and 26.

In order to bring to light the questionnaire's adequacy to the course's curriculum, these two aspects are related in Table 2.

Para evidenciar la adecuación del cuestionario al programa de la asignatura, en la Tabla 2, se relacionan ambos aspectos.

**Table 2.** Correspondence between the questionnaire's dimensions and the intervention programme

Dimension	Intervention programme aspects
A=Physical appearance, referred to physical attractiveness regarding beauty or body structure, among other aspects	A specific BE aspect is addressed in the theoretical lessons: body models and own body image acceptance.

	With regard to the content block 'Static body', form composition is analysed and self-perception and acceptance of the own body are introduced, which constitute a course methodological line.
H=Body expression/communication skills, BE-specific skills and contents.	Developed through all learning activities.
E=Emotional, emotional control aspects: anxiety, nervousness, optimism, depression, tension and level of concern about things.	One content block is Feelings and sensitivity. We work on basic emotions and represented (acting) and felt (own) feelings.
P=Problem solving, individual's creativity to combine ideas, enjoy and be interested in inventing new ways of solving problems, pleasure in imagination and originality.	Preparing sequences and performances, both in groups and individually. Use of learning situations through discovery methodologies during practical lessons.
M=Relationships with people of the same sex, ability to establish relationships with people of the same sex	Given the low number of women and the different types of groups used in class, women are more likely to work with people of the opposite sex than men, and vice versa.
O=Relationships with people of the opposite sex, ability to establish appropriate relationships with people of the opposite sex.	

#### 2.4. Variables

The independent variable was the Body Expression intervention programme.

The dependent variables were SC and its six dimensions, considered as continuous variables: physical appearance, body expression/communication skills, emotional dimension, problem-solving ability, relationships with people of the same sex and relationships with people of the opposite sex.

The sociodemographic variables were gender and COVID-19 influence. Two groups were created regarding the latter: academic years prior to the pandemic and academic years affected by the pandemic.

#### 2.5. Procedure

The study began with the administration of the questionnaire proposed by Caballer, Oliver and Gil [9] at the beginning of each of the six academic years examined (pre-measurement). To do so, right before the beginning of the lessons, the students were sent a link to a Google form through Moodle platform. In the form, they were advised that, if they accepted, it would be used for teaching and research purposes, and that it was anonymous, so it would not affect their marks. Subsequently, the Body Expression intervention programme was implemented as previously described and the same questionnaire was administered again at the end (post-measurement).

The BE programme consisted in a course of the Degree in PASS taught in the second semester of the first year taking into account some aspects proposed by Zulaika Isasti [28] to improve SC. It was composed of 6 credits (60 in-person hours) distributed into 15 hours of theory, 40 hours of practice and 5 seminars in small-sized groups.

The practical contents were: (1) Disinhibition and group building; (2) Body and self-knowledge; (3) Movement qualities; and (4) Feelings and sensitivity.

The methodological axes the course was based on were: (1) progress towards disinhibition; (2) progression from self-knowledge to expression and communication; (3) progression towards group integration and cooperation; (4) evolution from directed proposals to autonomous work and self-regulation; and (5) evolution from execution to creation capacity. Furthermore, the teaching intervention in class was focused on creating an expression space [42] that was integrating, promoted respect, participation and acceptance of differences, and respected individual abilities. Affective feedback was used and students' previous ideas and pre-conceptions about the topic were used as a basis.

The types of activities conducted in the practical lessons included [5]: (1) Sensitivity and disinhibition (to foster the sense of belonging to the group, to lose fear or embarrassment upon contact, to show their non-sport or non-athletic motor skills, to generate an environment where individuals feel safe and confident to release their creativity and learn

for personal development); (2) Becoming aware of the expressive, communicative and aesthetic possibilities of movement; (3) Representation and symbolisation (ability to recreate or interpret feelings and ideas, either real or imaginary); (4) Movement qualities (discovery of the factors determining the motor expression action according to von Laban [43]; and (5) Acknowledgement of the gesture as a cultural fact [44].

Formative and continuous assessment was applied through peer-assessment, self-assessment and hetero-assessment techniques and using various means so that every student could be assessed according to their particularities. A means of assessment was a group performance creation, exhibition and assessment which served as the reference social situation [45].

For the remote sessions, the teacher prepared an audiovisual document (Windows PowerPoint) with theoretical explanations, links to videos, articles or other materials, and proposals of physical practice that every student should individually perform and record. Then they would send their videos and pictures for the teacher and/or other students to review.

The set of goals, competencies and contents were maintained during the six academic years, and the methodology underwent usual basic and also specific adaptations in the years affected by the pandemic.

### 2.6. Data Analysis

A MANOVA biplot [46], also known as canonical biplot [47], was used for data analysis. This technique was designed in order to graphically represent the results of multivariate variance analysis in a reduced space. In this analysis, the dependent variables played the role of continuous variables, while the groups were the regression variables. MultBiplot software [48] was used. One-way and two-way analyses were applied in this study, depending on the SC pre- and post-measurement values, gender and the presence or not of the COVID-19 pandemic.

The graphical representation consisted in drawing the directions of maximum separation between groups on a bi-dimensional plane with the intention to reveal the differences between them, as well as the dependent variables (SC dimensions) that caused such differences. The graphical elements and their meaning were as follows:

1. *Circles*: they represent every group of analysis determined by the variables. The centre is the mean (M) and the radius is the level of confidence estimated through a univariate test (SD).

2. *Vectors*: they represent the variables (questionnaire dimensions); the arrow-head points in the direction of the maximum value. The angle defined between vectors is directly proportional to the correlation between variables. The vectors not only indicate the directions of maximum separation between groups, but also provide an estimation of the group mean values. Thus, groups (circles) located in the vector direction (the arrow pointing at positive variable values) will present higher mean values than those groups that are close to the origin or even on the negative vector values.

3. *Distance between circles*: the longer the distance between circles, the larger the difference between the groups they represent.

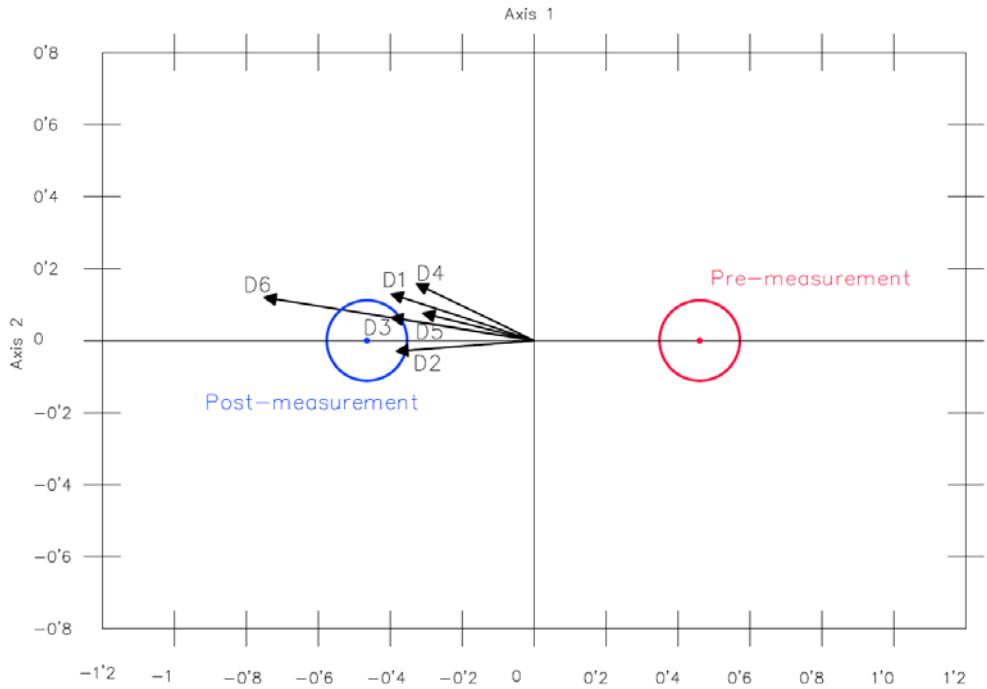
4. *Significant differences between groups*: to calculate them, two circles are projected over the continuation of a specific variable (vector). If the circles do not overlap, this means that there are significant differences between the two groups in that variable.

## 3. Results

First, the results obtained from the one-way analysis will be presented, followed by the two-way analysis results. Due to space limitations, the general graphs will be shown and, in some cases, also particularly interesting projections.

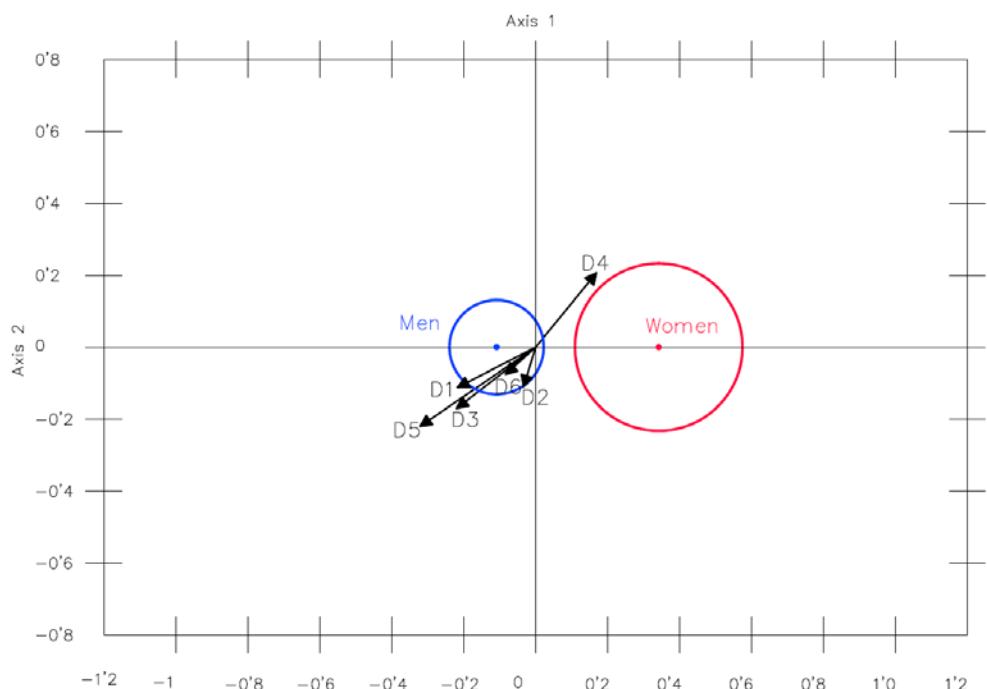
### 3.1. One-Way Analysis

*SC pre- vs. post-measurement.* The MANOVA biplot shown in Figure 2 reveals significant differences between SC pre- and post-measurements. As can be seen, all the dimensions examined presented this difference, the post-measurements being higher than the pre-measurements.



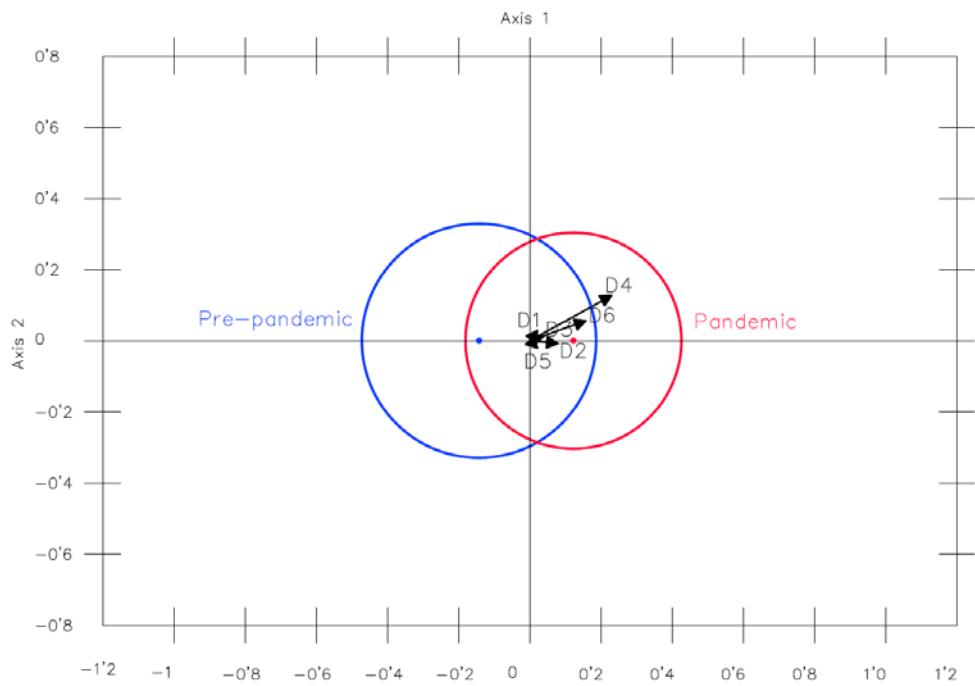
**Figure 2.** Pre- vs. post-measurement

*Gender.* Likewise, in general, significant differences were observed between men and women (Figure 3). On the whole, men presented higher values than women, except for dimension 4 (Problem-solving), where women scored higher. Nevertheless, after projecting the groups, these differences were found to be only significant at the 95% level in variables 1 (Physical appearance) and 5 (Relationships with the same sex).



**Figure 3.** Gender

*Pandemic.* With regard to the pandemic effect, Figure 4 reveals no significant differences between the academic years that were studied *before and during the pandemic* when they were analysed without controlling for other factors.

**Figure 4.** Before and during the pandemic

### 3.2. Two-Way Analysis

In this section, we present several analyses that take into account the effect of the interaction of two factors (ways) on SC dimensions, as well as on the groups under study in this research.

By doing so, even though the one-way analysis did not yield significant differences between groups in some cases, the combination of factors will help us better explain the behaviours observed.

*SC pre- vs. post-measurement, gender.* New noteworthy results were obtained through the combination of the variables *pre-/post-measurement* and *gender* (Figure 5). From a *general point of view*, the figure shows that:

- (1) The distance between men pre-measurement and men post-measurement (quadrants 1 and 2) was longer than between women pre-measurement and women post-measurement (quadrants 3 and 4).
- (2) The post-measurement values were significantly higher both in men and women.
- (3) Consequently, the men post-measurement group presented the highest values.
- (4) The distance between men and women was shorter in the post-measurement than in the pre-measurement.

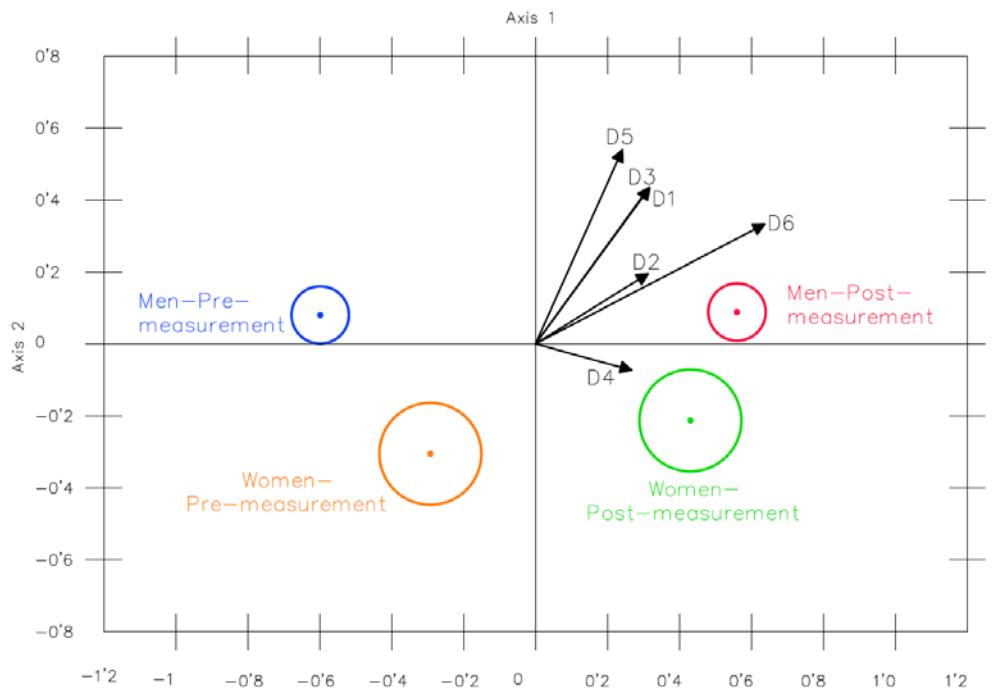


Figure 5. Men/Women + Pre-/Post-measurement

(5) In the pre-measurement, the largest difference in SC between men and women lay on dimension 4 (Problem-solving) (Figure 5a), where women presented higher values (as already seen in the one-way analysis). However, this difference completely disappeared in the post-measurement. By contrast, differences were found in the rest of the dimensions (Figure 5b), where they had not been observed before, with men showing higher values.

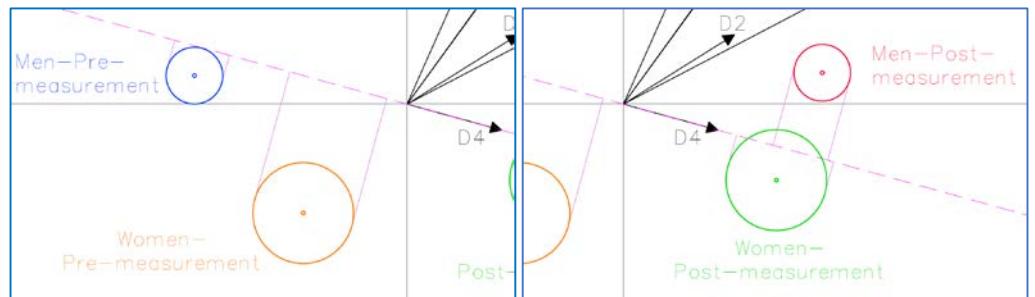
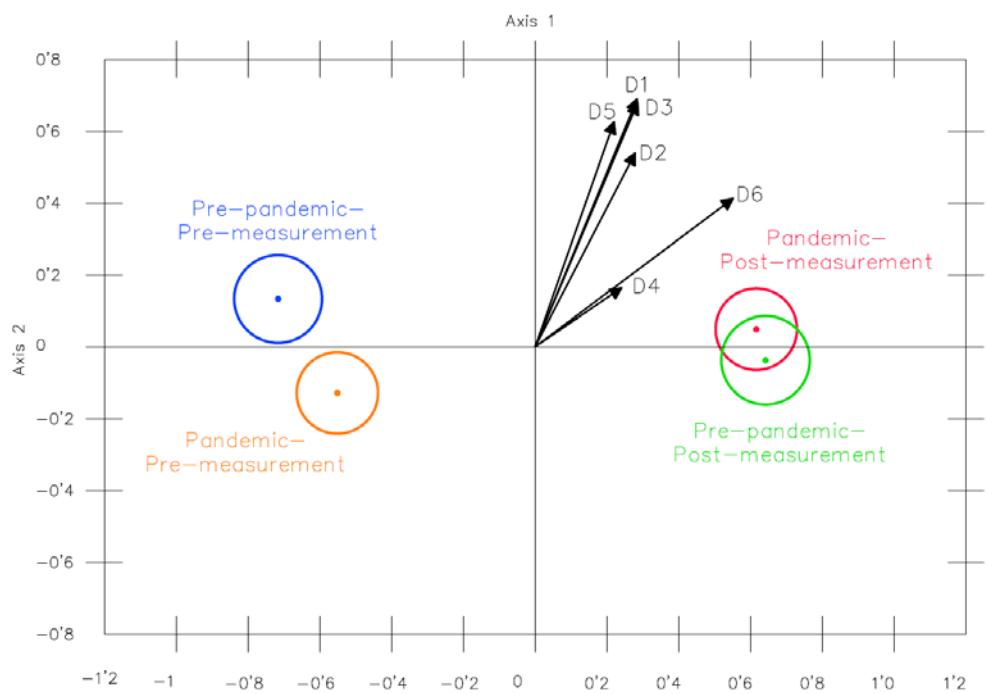


Figure 5 a y b. Zoom PRE-measurements on D4    Figure 5b. Zoom POST-measurements on D4

*SC pre- vs. post-measurement, pandemic.* The independent one-way analysis of the *pandemic* effect on students' SC did not yield significant differences between groups. By contrast, significant differences were found when the *pre-* and *post-measurements* were distinguished in the analysis (Figure 6).

As can be observed in Figure 6, the *pre-measurement pre-pandemic* and *pre-measurement pandemic* groups were clearly separated. In spite of this, no particular dimension has been shown to have a differentiating effect. In other words, a global effect is observed, produced by the six SC dimensions.

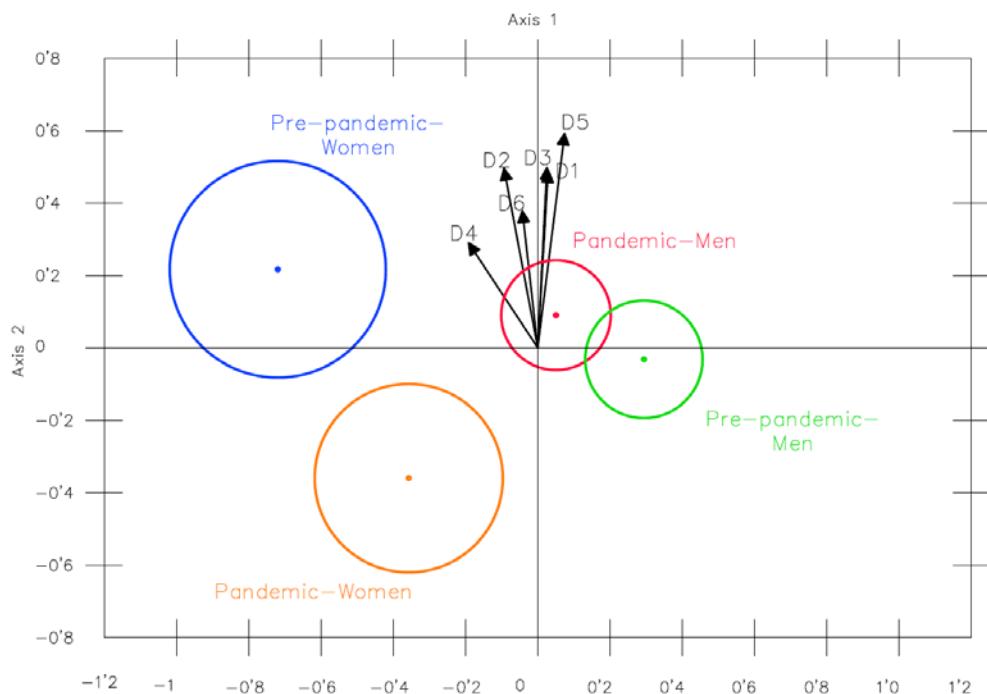
Nonetheless, the overlap of the *post-measurement* projections indicated that there were no differences between before and during the pandemic.



**Figure 6.** Before/During the pandemic + Pre-/Post-measurement

*Pandemic, gender.* When analysing the effect of the *pandemic* and *gender* variables (Figure 7), significant differences were found only in *women*, who presented higher values in the academic years prior to the pandemic. This can be concluded from the distance observed between the circles representing women (quadrants 2 and 3) and from the location of the *pre-pandemic women* group, closer to the higher values (arrowheads) of the different vectors.

When looking for the dimensions causing such differences in women, we found that the group projections on variables 2 (*Body expression/communication skills*), 4 (*Problem-solving*) and 6 (*Relationships with the opposite sex*) did not overlap, which can be interpreted as the presence of significant differences in these dimensions between the two periods.



**Figure 7.** Representation of pre-pandemic/pandemic groups *vs.* gender

#### 4. Discussion

##### *Summary of the Results*

As regards study aims 1 and 2, the results revealed that SC values were higher after the programme than prior to it, due to a joint effect of the SC dimensions. These improvements occurred both in men and women.

There were also differences regarding gender. These differences were initially very weak but, when distinguishing between pre- and post-measurements, it was clearly observed that women presented higher SC than men prior to the programme implementation, while the opposite occurred after its completion, meaning that men experienced a greater change.

Furthermore, men's and women's post-measurement values were closer to each other than the pre-measurement ones, so the programme may have had an equalising effect on SC between genders.

As regards the dimensions, a joint effect was initially observed, with D1 and D5 standing out slightly. Later, D4 was shown to play a relevant role, since it caused the higher value in women at the beginning of the programme and it was the only one not contributing to men's improvement at the end.

With regard to aim 3, related to the pandemic effect, the pre-pandemic groups showed higher SC values than the pandemic groups at the beginning of the programme. However, after the programme, no differences were observed between groups, which may be because the BE programme had an equalising effect on the groups' SC. Furthermore, these initial differences appeared because of women, so it can be stated that the difference between *before* and *during the pandemic* was a gender issue. The pandemic particularly affected women.

Based on the above summary of the results, they will now be discussed by aim.

##### *Aim 1: SC Evolution*

As regards SC, the study outcomes are deemed as very positive, considering that significant improvements were detected in the whole sample, with a global effect observed in the dimensions after the BE programme implementation.

In light of the results, the BE programme may have contributed to the SC improvement shown by students, possibly due to the important presence of affective and emotional aspects that are considered to be SC factors. Zulaika Isasti [28] stated that it is difficult to change SC if the experiences that subjects live contradict their self-perceived image. In any case, changes occur in certain aspects, but not in the SC in general.

These results are in line with previous studies involving BE which analysed emotional factors that, as it has been shown, affect SC. Reigal [49] found improvements in state of mind thanks to BE work. Ruano [22] found that, after the implementation of a BE programme in university students, embarrassment decreased and social skills improved both in men and women, with greater changes in the latter. Durán et al. [18] confirmed that the use of psychomotor expression situations led to a reduction in negative mood states and, sometimes, an increase in the positive vigour-activity state. Rodríguez and Araya [50] observed significant differences in the variable inhibition-empathy-distrust in students like those from our study. Likewise, another study with university students revealed an increase in self-confidence and self-esteem after a body expression programme [50].

If providing an emotional environment is key to allowing feelings and disinhibition to emerge in order to improve SC, then BE seems to be a privileged activity. Romero, Gelpi, Mateu, Rovira and Lavega [17] verified it in their study with PASS students, where motor expression and games triggered the most intense positive emotions, confirming

that the variable type of activity predicted the relevance of the emotional experience to the student. Due to the above, we can say that the implemented BE programme probably had a positive influence on SC.

#### *Aim 2. Improvements Depending on Gender and their Causes*

In this study, both men and women showed improvements. At the beginning of the programme, men reported lower SC values than women due to the influence of dimension 4. By contrast, their values were higher at the end because the rest of the dimensions increased. Therefore, the improvement was larger in men.

One reason why men presented lower values at the beginning may be the little inclination of this group towards expressive content, since these practices are identified with female gender stereotypes such as plasticity, aesthetics or creativity, while male stereotype characteristics are strength, resistance or motor skills [18]. Various authors have discussed students' content preferences depending on gender. Alvariñas, Fernández and López [14] described that women felt identified with rhythmic and expressive physical activities. Blández, Fernández-García and Sierra [15] had previously reported that men's and women's preferences regarding sports practice were coming closer, although this was due to greater interest of women in traditionally masculine sports and not the other way around.

However, men presented higher values than women at the end of the study, showing a larger progression. This may be due to a lower level at the beginning because of various reasons such as limited previous experience in BE [5], lower inclination towards strongly affective contents or low perceived self-efficacy [11] in this type of motor task, aspects that may affect SC. As a consequence of all the above, the BE experience based on emotional tasks and respecting the student's timing may have caused, due to the presence of previously unexplored skills, a novelty effect [52] on men, which has been mentioned by several authors to explain the motivation to practise physical activity.

The values observed in men and women were closer at the end of the programme. This may be because the BE programme had an equalising effect on the SC dimensions examined, which respond to BE content's internal logic [53]. In particular, the data revealed that this coming together was the consequence of women's increase in dimension 4 (Problem-solving) and men's improvement in the rest of the dimensions. Dimension 4 is clearly related to tasks oriented to the creation of choreographies and performances, which were recurrent in the BE programme, like in Rial and Villanueva's [54] study. This suggests a greater development of these skills in women after the programme. Meanwhile, men reported significantly higher values in the other five dimensions: physical appearance (D1), expression and communication skills (D2), emotional control (D3) and the ability to build relationships with people of the same sex (D5) or the opposite sex (D6). This altogether revealed a greater effect of the programme on the male gender. If we consider the emotional aspects as SC factors, our findings are in keeping with the studies by Lavega [4,18,21,51], where men reported higher emotional intensity in general, and also in line with Esnaola and Goñi's [55] study, where men scored higher than women after the intervention. Besides, it was also confirmed that women did not stand out in dimension 3 (Emotional) despite the identification of the female stereotype with these aspects.

Having described all the above, this study is in agreement with Pena and Repetto [56] (2008), who suggested that, in order to avoid the effects of the regression towards the mean, independent studies per gender should be conducted, and also with Lavega, P., Lagardera, F., March, J., Rovira, G. and Araújo, P. C. [4], who recommended controlling for the variable gender, since the socio-emotional effects were different in men and women.

#### *Aim 3. Pandemic*

Our study revealed that the pre-pandemic groups presented higher SC values than the pandemic groups at the beginning of the programme. That is, it is likely that students have been affected by the confinement situation and restrictions. These results may be due to the presence of anxiety, depression and reaction to stress in the general population [38], which particularly affected adolescents (the group the participants of this study belonged to), who showed anxiety and depression symptoms affecting their emotional development and self-concept [37]. Such an effect on SC was also observed in Cachón et al.'s [32] systematic review, where several studies mentioned a decline in self-esteem during the confinement period; and in [39] study, where the participants, unavoidably isolated due to COVID-19, reported lower values in this psychological variable, partially because of changes in all their routines (social, family, work, etc.). Similarly, [57] conclude that confinement emergencies deteriorate the perception of physical self-concept and psychological well-being, especially affecting university students due to academic demands.

Furthermore, these initial differences appeared because of women, so it can be stated that the difference between before and during the pandemic was a gender issue. The pandemic particularly affected women. Therefore, our study revealed a gender gap, bringing to light that women affected by the pandemic faced BE courses with lower SC than those who did in the years prior to the pandemic. This agrees with Rodríguez, Garrido and Collado [58], whose study showed that 36.6% of the participants presented psychological distress, the psychological effect being stronger in youth and women. This proves the large psychological impact (p. 550) of COVID-19, which has been unequal among different population groups.

Nonetheless, the pre-pandemic and pandemic groups reported similar values after the programme completion. This may be due to an equalising effect of the BE programme on SC, considering the importance of the programme's affective factors and other characteristics on SC.

## 5. Conclusions

The study showed an improvement in all SC dimensions, possibly due to the influence of a BE programme focused on emotional aspects implemented with university PASS students.

Gender was a determining variable in SC.

The pandemic has particularly affected women; our study revealed that women affected by the pandemic started the programme with lower SC values than those who did in the years prior to the pandemic.

The different groups reached similar post-measurement values, due to an equalising effect of the BE programme, which focused on personal development, emotional well-being and respect for individual motor skills, and promoted respectful cooperation between opposite-sex individuals, as well as body expression and communication.

The questionnaire proposed by Caballer, Oliver and Gil (2005) has proved to be a valid instrument to examine SC dimensions that were aligned with BE, so it can be essential in future research.

After the previous studies analysed and the present research, an SC model related to BE is envisaged where emotional variables like fear, embarrassment, perception of expressive skills and expectations generate an inhibition process that produces the refusal of motor expression practice. Consequently, further research is needed in this line.

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