
Analysis of gender equality training and commitment to studies of future teachers

Análisis de la formación en igualdad de género y compromiso con los estudios del futuro profesorado

对性别平等培训的分析和对未来教师研究的承诺

Анализ тренингов по гендерному равенству и заинтересованности в обучении будущих учителей

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Abstract

In recent years co-education has become a necessary pillar in forming a fair and equal society. Teachers are key agents for the development of gender equality and it is therefore considered necessary that they have the appropriate competences to do so. University education should be the basis of the gender knowledge that teachers will transmit in the future. The aim was to analyse whether future teachers were being trained in gender mainstreaming during their time at university and how committed they are to their studies.

The sample consisted of 442 participants from the Degrees in Childhood Education, Primary Education or Masters related to Education in Spanish universities. A socio-demographic questionnaire was administered with ad hoc questions to study age, gender and studies undertaken and some questions relating to their previous training in coeducation. The Sensitive Assessment for Gender Equality scale and the Utrecht Work Engagement Scale were also applied to analyse their commitment to their studies.

The results show that the participating students have not received training in coeducation before entering university. However, the majority, both boys and girls, are interested in receiving training in gender issues during their university studies and demand greater inclusion of this subject in their study plans. Likewise, the data indicate that satisfaction with their studies is proportional to their commitment to them.

Keywords: training, teachers, coeducation, university, studies.

Resumen

En los últimos años la coeducación se ha convertido en un pilar necesario para formar una sociedad justa e igualitaria. El profesorado es un agente clave para el desarrollo de la igualdad de género, por lo que se considera necesario que disponga de las competencias oportunas para ello. El objetivo fue analizar si el futuro profesorado estaba siendo formado en perspectiva de género durante su etapa universitaria y cuál es su compromiso con los estudios.

El diseño del estudio es descriptivo, transversal, ex post facto con una medición en un único grupo. La muestra estuvo compuesta por 442 participantes de los Grados de Educación Infantil, Primaria o Másteres relacionados con la Educación en universidades españolas. Se aplicó un cuestionario sociodemográfico con preguntas ad hoc para estudiar la edad, género y estudios cursados y algunas cuestiones relativas a su formación previa en coeducación. También se aplicó la Escala de Evaluación Sensible a la Formación en Igualdad del Género y la Escala Utrecht Work Engagement Scale para analizar el compromiso con sus estudios.

Los resultados muestran que el alumnado participante no ha recibido formación en coeducación antes de entrar a la universidad. Sin embargo, la mayoría, tanto chicos como chicas, sienten interés por recibir formación en materia de género durante su etapa universitaria y demandan mayor inclusión de la misma en sus planes de estudio. Asimismo, los datos indican que la satisfacción con los estudios es proporcional al compromiso con los mismos.

Palabras clave: formación, profesorado, coeducación, universidad, estudios.

概要

近年来, 男女同校已成为形成公正平等社会的必要支柱。教师是促进性别平等发展的关键力量, 因此他们被认为有必要具备相应的能力支持他们促进性别平等。大学教育应成为教师未来传授性别知识的基础。本文目的是分析未来的教师在大学期间是否接受过性别观点的培训, 以及他们对这项培训的承诺。

样本包括 442 名来自西班牙大学的幼儿教育、初等教育或教育相关硕士学位的参与者。我们对其发放了一份社会人口统计学问卷，其中包含一些特别问题，以研究年龄、性别和所进行的学业，以及一些与他们之前的男女同校培训相关的问题。性别平等培训敏感评估量表和乌得勒支工作参与量表也用于分析他们对学习的承诺。

结果显示，参与的学生在进入大学之前没有接受过男女同校的培训。然而，大多数男孩和女孩都对在大学期间接受性别培训感兴趣，并要求将其更多地纳入他们的学习计划。同样，数据表明其对学习的满意度与对学习的投入成正比。

关键词：培训、教师、男女同校、大学、研究。

Аннотация

В последние годы совместное обучение стало необходимой опорой для построения справедливого и равноправного общества. Учителя являются ключевым агентом развития гендерного равенства, поэтому считается необходимым, чтобы они обладали соответствующими компетенциями для этого. Университетское образование должно стать основой гендерных знаний, которые учителя будут передавать в будущем. Целью исследования было проанализировать, проходят ли будущие учителя подготовку по гендерной проблематике во время учебы в университете и насколько они заинтересованы в своем обучении.

Выборка состояла из 442 участников, получающих степень бакалавра в области воспитания детей младшего возраста, начального образования или степень магистра в области образования в испанских университетах. Была заполнена социально-демографическая анкета со специальными вопросами для изучения возраста, пола и пройденного обучения, а также некоторые вопросы, связанные с их предыдущей подготовкой в области совместного обучения. Шкала оценки чувствительности обучения к гендерному равенству и Утрехтская шкала трудовой активности также применялись для анализа их заинтересованности в обучении.

Результаты показывают, что участвующие в исследовании студенты не проходили тренинг по совместному обучению до поступления в университет. Однако большинство из них, как юноши, так и девушки, заинтересованы в получении тренингов по гендерным вопросам во время обучения в университете и требуют их более широко включения в учебные программы. Данные также показывают, что удовлетворенность учебной пропорциональна их стремлению к ней.

Ключевые слова: обучение, преподаватели, совместное обучение, университет, исследования.

Introduction

The quest to achieve gender parity is an essential right and, as such, is included in the 17 Sustainable Development Goals (SDGs) presented by the UN in its 2030 Agenda (UNESCO, 2015). Especially goal 5 "Gender equality", mentions the need to achieve gender equity, empowering women and girls (Sanabrias-Moreno & Sánchez-Zafra, 2021).

The search for real equality between men and women has become a social and political concern in recent years, but despite the social changes that have taken place, dealing with the concept of gender in the family and academic environment still involves great ignorance and concern. Beliefs about male and female roles have their origin

in the baggage of each person, depending on their sex, within the family, school or other social environments that are key in the preservation of sexist stereotypes (Sánchez-Torrejón & Barea-Villalba, 2019).

The family is the first educational agent and its contribution to uproot stereotypes from childhood is indispensable. Families in the 21st century are facing a reality that differs from that of previous years, as it is now understood that it is logical for women to work for pay. However, in the past, women also worked, but mostly in the domestic sphere, taking care of the home and the children, without receiving any economic incentive and practically without recognition, since it was assumed that this was their mission because they were born women. The family must defend the fact that there is no work that belongs to men or women, but that in the bosom of the family everyone must collaborate. Likewise, the family as the main educational agent must be aware of the need to transmit to their descendants that the colors, toys, clothing or studies to be pursued, have no direct attribution to the biological sex with which one is born (Sanz-Gómez, 2019).

Likewise, the educational field is another of the main educational agents. Nowadays, education is immersed in a social context that presents constant changes and innovations, which requires that teachers have the relevant tools to train students capable of reflecting and critically analyzing their environment and the interactions that take place in it. Faced with these new challenges and social demands, teacher training is essential, understood as the processes and competencies through which teachers learn to analyze, understand and reflect on their professional and social work in their daily work in the classroom (Hortigüela et al., 2016; Hernández-Abenza, 2011).

In this regard, attention should be paid to the university institution as the one responsible for the gender training received by future teachers. It should be borne in mind that the university training period is a crucial stage for students who will have to face new situations and problems to which they may not be accustomed (Chacón-Cuberos et al., 2020). Training from this perspective is still a pending issue in many educational institutions, which means that stereotypes are often transmitted unconsciously through the hidden curriculum. This is why the role of teachers plays an essential role in promoting an education rich in values that is committed to coeducation as a way to put an end to differential behaviors, educating in an equitable manner at all levels and in all subjects (Otero-Gutiérrez et al., 2022).

From a pedagogical perspective, co-education refers to any educational process that consciously eliminates any inequality or discriminatory attitude based on sex, gender identity or gender, ethnicity, family or sexual diversity... always seeking to promote the integral development of students without any type of limitation or condition (Fernández et al., 2022). Coeducation is not limited to offering students a mixed education, an enunciative curricular content or using inclusive language out of commitment, which could remain a banal intention, but its work goes much further as it requires training and interest in promoting a curriculum adapted to current demands (Hernández-Prados et al., 2022). Coeducation addresses different aspects of the psychological dimension, such as the development of self-concept, peaceful coexistence between sexes or interpersonal communication. Teaching from the coeducational perspective does not therefore imply a theoretical content to be learned, but refers to attitudes and social structures as a key way for human development (Valdivia-Moral et al., 2015).

Being a teacher implies knowing that one educates by transmitting knowledge, but also values that must go towards global change in the face of discriminatory attitudes based on gender (Galé et al., 2019).

Faced with this need for change, Spanish educational legislation has been modified according to the challenges that society demands. It was not until 1990 with the entry into force of the Organic Law for the General Organization of the Educational System (Ley Orgánica de Ordenación General del Sistema Educativo, LOGSE) when the term "coeducation" appeared for the first time defined as a tool to seek equality between boys and girls in the educational center (Sánchez et al., 2021). Nowadays, the educational law currently in force, Organic Law 3/2020 amending Organic Law 2/2006 of May 3 (Ley Orgánica de Modificación de la LOE, LOMLOE), further qualifies the importance of this approach and indicates that gender equality should be promoted through coeducation at all educational levels in order to promote equality between men and women, the prevention of gender violence and affective-sexual education (Instituto Asturiano de la Mujer, n.d.). In this sense, it should be added that RD 861/2010 of July 2, 2010, which improves and modifies RD 1393/2007 of October 29, 2007, indicates that university degrees related to education should include training content on gender equality and prevention of violence. However, this is still not contemplated in many of the teaching guides of the university subjects taught in the degrees that prepare future teachers (Sánchez-Torrejón & Barea-Villalba, 2019).

Several studies have already been interested in checking the degree of involvement of the gender perspective (GP) in the curricula of future teachers and the results have not been very encouraging. A study carried out in the Faculty of Education of Alicante found that only 1/3 of the teachers involved in education degrees and master's degrees were involved in the incorporation of the GP and 78% highlighted the lack of preparation to incorporate these issues in their teaching work (Cardona-Moltó & Miralles-Cardona, 2022). Interestingly, another research conducted in 2019 determined that 53.6% of teachers who were active in educational centers considered it necessary to train students in gender in Childhood Education (CE) and Primary Education (PE), compared to 37.1% of university teachers who did not consider it so relevant (Sangustín & Moyano, 2019). This low training capacity, the insufficient interest in integrating coeducation in teaching and the little integration of gender in the curricula, keeps GP in a kind of teaching limbo that is left to the personal decision of each professional, with women being those who usually present higher rates of involvement in this regard (Ballarín-Domingo, 2017).

The commitment of teachers in their teaching work is adequately justified if we pay attention to the need to co-educate in order to form an egalitarian society free of stereotypes. But at the same time, it is equally important to pay attention to the individual commitment (predisposition and satisfaction) that future teachers present with their study plans and their future professional performance (Cachón-Zagalaz et al., 2018). Generally, determining what studies they want to pursue is usually a difficult and important decision to be made at an early age. Such a decision may be determined by family factors, economic factors, self-interest (vocation) or the influence of the media (Bravo-Torres, 2018).

Again with regard to GP and the choice of one degree or another, it should be noted that in recent years there has been a proliferation of research related to the representation of women in careers related to science, technology, engineering or mathematics, known as "STEM" subjects (science, technology, engineering and mathematics). The results show that women are underrepresented in such fields that are especially

considered masculine and that those who choose STEM-related positions often face negative experiences related to stereotypes that favor men (Casad et al., 2019). The gender gap in STEM fields is yet another reason why co-education is needed to eliminate the clichés associated with gender.

For years it has been believed that this difference in the representation of men and women in different fields of knowledge is due to the assumption that there are certain gaps in the innate abilities and skills with which men and women are born. However, studies carried out in recent years have confirmed that these are not biological issues, but that it would be the social construction and differentiated behavioral models that have been acquired over the years that lead to the choice of some studies or others depending on gender (Martín-Rodrigo, 2018). For example, professional stereotypes tend to represent women as social beings who care, please and interact, which can be reflected in the profile of students, mostly women, who generally study CE and PE degrees (Sanabrias-Moreno et al., 2020). However, boys are considered to be more agile minds for calculus, computing or management (Reinking & Martín, 2018).

Schools are a direct reflection of the society that originates them, so education should focus on the detection, critical analysis and eradication of structural inequality between boys and girls, since the roots of inequalities are the origin of a multitude of manifestations that end in violence, fear, silence and submission (Otero-Gutiérrez et al., 2022).

It follows from the above that the educational institution, with special relevance in this case to the university institution, is a key pillar to end gender stereotypes, offering students a broad, open and rich in diversity imaginary to promote the breaking of gender barriers that still persist in many areas of the social sphere. As a consequence of the above, it is proposed that future teachers are currently being trained in coeducation at the university stage.

Objective

The aim is to analyze whether the future teachers of Childhood Education (CE), Primary Education (PE) and Masters related to education (MAS), are being trained in gender equality during their university studies, as well as to study their level of commitment to these studies. On the other hand, the aim is to compare both variables according to the degree taken and the sex of the participating sample.

Methods

Participants

The study presented is a descriptive, cross-sectional, ex post facto study with a single group measurement. The sample of this study consisted of 442 university students (308 females and 134 males) selected by convenience. All of them were studying for a Degree in Childhood Education (n = 92), a Degree in Primary Education (n = 263) or a Master's Degree related to education (n = 87). Among the students in the Childhood Education Degree, 7 males (7.6%) and 85 females (92.4%) participated; in the Primary Education Degree 101 males (38.4%) and 162 females (61.6%) and in the Master's

Degree 26 students (29.9%) and 61 female students (70.1%). The mean age of the participants was 21.72 years (± 3.77).

Instruments

- **Sociodemographic questionnaire:** To analyze the sex, studies and age of the participants. In addition, several ad hoc questions related to gender training were posed with different answer options: "Have you received training in coeducation at any educational level before entering university?", "Does your family environment contribute to eradicating gender-associated stereotypes?", "Do you know if in your university there is any plan aimed at addressing gender equality?" and "Are you in favor of teaching coeducation in the educational environment?"
- **Scale of "Evaluación Sensible a la Formación en Igualdad del Género" (ESFIG),** elaborated by Miralles-Cardona et al. (2020). It consists of 16 items that are grouped into three dimensions: incorporation of GP in curricula (items 3, 4, 5, 6, 9, 10 and 11), institutional sensitivity to the application of gender equality policy in the centers (items 1, 2, 7, 8 and 12) and awareness of gender-related inequalities in instructional processes (items 13, 14, 15 and 16). An example item is "The faculty of education has adopted a proactive approach to gender equality". The response scale is Likert-type with 6 response options, where 0 is "Strongly disagree" and 5 is "Strongly agree" It has been decided to eliminate item 4 for having too high a kurtosis (Curt > 4.00). The reliability of the scale and of the factors after the elimination of this item was .813 for the total scale, .891 for the factor Gender in the Curricula, .772 for the factor Institutional Sensitivity and .859 for the factor Awareness of Gender Inequalities.
- **Utrecht Work Engagement Scale (UWES-S),** originally created by Schaufeli et al. (2002), of which there is a validation in Spanish by Belando et al. (2012). The revalidation of the latter by Cachón-Zagalaz et al. (2018) has been used, as it is oriented to university education students in Spain. This latest version consists of 15 items that are divided into two factors: willingness to study (items 2, 3, 4, 5, 6, 7, 10 and 11) and study satisfaction (items 1, 8, 9, 12, 13, 14 and 15). An example of an item is "I am persistent in my studies". A 5-point Likert-type scale is used, where 0 is "Strongly disagree" and 4 is "Strongly agree". The reliability of the total scale is .902, that of the Predisposition factor is .863 and that of the Satisfaction factor is .837.

Procedure

First, a questionnaire was developed in Google Forms linking the instruments mentioned above (sociodemographic questions and ESFIG). The link to this questionnaire was sent to professors, subject coordinators, undergraduate and postgraduate coordinators of different Spanish universities, together with a document explaining the purpose of the research and the indications for completing the questionnaire. At the beginning of the survey, the objective of the study was explained and the anonymity of the responses of all participants was guaranteed.

The research complied with the ethical requirements of the Declaration of Helsinki, developed by the World Medical Association (WMA, 1964), adopted by the 71st WMA General Assembly (online), Cordoba, Spain, October 2020.

Data analysis

Data analysis was performed using the SPSS 24.0 statistical program (IBM corps., Armonk, NY, USA). The descriptive values, central tendency and dispersion were calculated and the reliability of the factors was checked using Cronbach's alpha in order to verify whether the scale can be used successfully in the selected sample. On the other hand, for data analysis, cross tables, independent samples T-test, correlations and ANOVA were used. For the latter analysis, the post hoc test (Bonferroni) was also used to determine intergroup differences.

In the EFIG scale, as regards skewness and kurtosis, the range ± 2.00 and ± 4.00 respectively (Schmider et al., 2010) was used as valid, all the items presented an acceptable distribution except item 4, which was eliminated because it showed a high kurtosis. The corrected homogeneity index (IHc) also presented acceptable values, all being above .200 (Kline, 1995).

Table 1

Descriptive statistics of the EFIG

	M	SD	Asym	Kurt	CHI
1. The faculty of education has taken a proactive approach to gender equality.	3.61	.927	-.987	2.125	.394
2. The faculty applies the current equality regulations.	3.66	.869	-.749	1.742	.370
3. Gender training is a necessary condition for learning to educate in equality.	4.34	.908	-1.715	3.600	.457
4. Including a gender perspective in teacher training is essential to combat sexism.	4.32	.955	-1.900	4.468	.514
5. Gender issues are just as important to my training as those relating to other differences.	4.12	1.025	-1.541	2.957	.557
6. Diversity of sexual identities should receive greater attention in the curriculum.	3.98	1.114	-1.285	1.614	.563
7. My curriculum includes the development of competencies to educate in gender equality.	3.53	1.151	-.752	.303	.481
8. The gender perspective receives sufficient attention in the subjects.	2.79	1.304	-.291	-.436	.241
9. Gender should be integrated into teaching on a mandatory basis.	3.93	1.118	-1.410	2.387	.600
10. All subjects in the curriculum should be taught with a gender perspective.	3.69	1.236	-1.075	.951	.558

11. There should be at least one compulsory subject on gender equality in the curriculum.	3.82	1.264	-1.169	1.035	.540
12. Teachers are sufficiently sensitized to gender issues.	3.01	1.217	-.386	-.283	.200
13. Teachers tend to have higher and more demanding expectations of students than of female students.	1.83	1.501	.523	-.693	.412
14. Students receive more attention from faculty than female students.	1.51	1.446	.782	-.330	.420
15. The achievements of female students are often downplayed.	2.05	1.542	.248	-1.045	.409
16. Students' achievements are attributed more to their effort than to their ability.	2.46	1.633	-.060	-1.159	.422

Note. M= Mean; SD= Standard deviation; Asym = Asymmetry; Kurt = Kurtosis; CHI = Corrected Homogeneity Index

In the Commitment to Studies scale, as regards skewness and kurtosis, the range ± 2.00 and ± 4.00 respectively (Schmider et al., 2010) was used as valid, all items presenting an acceptable distribution. The corrected homogeneity index (CHI) also presents acceptable values, all being above .200 (Kline, 1995).

Table 2
Descriptive statistics of the Commitment to Studies scale

	M	SD	Asym	Kurt	CHI
1. My studies present new challenges.	3.24	.791	-1.167	1.996	.555
2. I am immersed and focused on my studies.	2.94	.891	-.849	.803	.712
3. I am persistent in my studies.	3.06	.836	-.835	.842	.667
4. I can continue to work on my studies for long periods of time.	2.86	.945	-.683	.004	.662
5. When I get up in the morning I feel like going to school.	2.05	1.087	-.174	-.579	.538
6. Even when things are not going well, I continue to study.	2.70	1.023	-.720	.008	.478
7. I am strong and energetic in my studies.	2.74	.950	-.517	.076	.690
8. I learn new and interesting things in my studies.	3.04	.852	-1.045	1.588	.566
9. My studies make sense.	3.13	.892	-1.131	1.308	.603

10. When I am studying I forget everything that is going on around me.	2.10	1.080	.066	-.680	.518
11. I “get carried away” by my studies.	2.14	.969	.012	-.304	.576
12. My studies are stimulating and inspiring.	2.64	.936	-.606	.283	.653
13. I am proud of my studies.	3.18	.849	-1.103	1.436	.620
14. When I am absorbed in my studies I feel good.	2.58	.994	-.513	.062	.513
15. Time flies when I’m working.	2.82	1.037	-.732	-.083	.496

Note. M= Mean; SD= Standard deviation; Asym = Asymmetry; Kurt = Kurtosis; CHI = Corrected Homogeneity Index

Results

Table 3 shows the results of comparing the ad hoc questions with the sex and studies of the participants. Regarding the first of the questions, 69% of the students (N = 305) state that they did not receive training in coeducation before entering university, compared to 31% (N = 137) who did. In the comparison by sex and studies, the results are similar among all parties, although women and master’s students stand out slightly for having received less training in coeducation before university. Regarding the second question, 65.2% of the respondents (N = 288) agree with the idea that the family environment contributes to eradicating gender stereotypes, these percentages being similar when compared according to sex or studies. The third question indicates that the majority of university students (67.2%, N = 297) do not know if there is a gender equality plan at their university, with no major differences being found with respect to sex, but with respect to studies, where CE students stand out for a greater lack of knowledge (81.5%, N = 75). From the last question, the idea that most of the subjects (84.4%, N = 84.4%) are in favor of teaching coeducation in the educational environment is extracted, this percentage being slightly higher in women than in men (86% vs. 80.6%).

Table 3

Ad hoc questions compared by sex and studies

		N (%)	Male N (%)	Female N (%)	CE N (%)	PE N (%)	MAS N (%)
1. Have you received training in coeducation at any educational level prior to entering the school/ universidad?	No	305 (69%)	84 (62.7%)	221 (71.8%)	59 (64.1%)	179 (68.1%)	67 (77%)
	Yes	137 (31%)	50 (37.3%)	87 (28.2%)	33 (35.9%)	84 (31.9%)	20 (23%)

2. Does your family environment contribute to the eradication of gender stereotypes?	Disagree	67 (15.2%)	27 (19.4%)	41 (13.3%)	10 (10.9%)	46 (17.5%)	11 (12.6%)
	Neither agree nor disagree	87 (19.7%)	25 (18.7%)	62 (20.1%)	16 (17.4%)	54 (20.5%)	17 (19.5%)
	Agreed	288 (65.2%)	83 (61.9%)	205 (66.7%)	66 (71.7%)	163 (62%)	59 (67.8%)
3. Do you know if your university has a plan to address gender equality?	Yes, there is	141 (31.9%)	43 (32.1%)	98 (31.8%)	15 (16.3%)	97 (36.9%)	29 (33.3%)
	Does not exist	4 (.9%)	2 (1.5%)	2 (.6%)	2 (2.2%)	1 (.4%)	1 (1.1%)
	I do not know	297 (67.2%)	89 (66.4%)	208 (67.5%)	75 (81.5%)	165 (62.7%)	57 (65.5%)
4. Are you in favor of teaching coeducation in education?	No	5 (1.1%)	3 (2.2%)	2 (.6%)	2 (2.2%)	3 (1.1%)	0 (0%)
	Yes	373 (84.4%)	108 (80.6%)	265 (86%)	76 (82.6%)	221 (84%)	76 (87.4%)
	I am not trained to respond at this time	64 (14.5%)	23 (17.2%)	41 (13.3%)	14 (15.2%)	39 (14.8%)	11 (12.6%)

Note. CE: Childhood Education; PE: Primary Education; MAS: Masters

To analyze the relationship between gender and the results of the EFIG and the Study Commitment Scale, a Student's t-test was performed (Table 4). Statistically significant differences were found in the Gender in Study Plans factor in favor of women [$t(1, 440) = 4.903, p \leq .01$], with a MD = .444. Similarly, statistically significant differences were found in both factors of Commitment to Studies. With regard to Predisposition [$t(1, 440) = 2.836, p \leq .01$], females are the ones who score higher, with a MD = .202. In the case of Satisfaction with studies [$t(1, 440) = 2.759, p \leq .01$], females are the ones who again present higher values, with a MD = .183.

Table 4
Differences in means according to sex

	M	M		Levene's test for equality of variances		T-test for equality of means				
				F	p	t	df	p	MD	
Gender in the curriculum	3.980	Male	3.670	Equal variances are assumed	2.364	.125	-4.903	440	.000*	-.444
		Female	4.114	Equal variances are not assumed			-4.657			
Institutional sensitivity	3.319	Male	3.368	Equal variances are assumed	4.100	.043	.845	440	.399	.069
		Female	3.298	Equal variances are not assumed			.877			
Awareness of gender inequalities	1.96	Male	1.966	Equal variances are assumed	5.277	.022	.040	440	.968	.005
		Female	1.961	Equal variances are not assumed			.038			
Predisposition to study	2.572	Male	2431	Equal variances are assumed	.132	.717	-2.836	440	.005*	-.202
		Female	2.633	Equal variances are not assumed			-2.791			
Satisfaction study	2.946	Male	2.818	Equal variances are assumed	.847	.358	-2.759	440	.006*	-.183
		Female	3.002	Equal variances are not assumed			-2.675			

Note. M = Mean; F = Statistic T- student test; p: significance; df = degree freedoms; MD = Mean differences

For the analysis of means according to the studies studied by the participants (CE, PE and MAS), the analysis of variance test (ANOVA) and the Bonferroni post hoc multiple comparisons test were used (Table 5). Statistically significant differences were found

in the Institutional Sensitivity factor [$F(2, 439) = 15.302, p \leq .01$], with those in CE and PE scoring higher with respect to those in MAS, with $MD = .375$ and $.529$ respectively. Regarding commitment to studies, statistically significant differences were found in the satisfaction factor [$F(2, 439) = 7.284, p \leq .01$], specifically between CE and PE with a $MD = .228$ in favor of CE, and between CE and Master's with a $MD = .354$, again in favor of CE.

Table 5
Differences in means according to studies

		N	M	SD	ANOVA			Prueba post hoc Bonferroni			
					df	F	p	Studies	MD	p	d
Gender in the curriculum	CE	92	4.02	.949	2.439	.188	.614	CE ⁽¹⁾ – PE ⁽²⁾	.076 ⁽¹⁾	1.000	.08
	PE	263	3.94	.862				CE ⁽¹⁾ – MAS ⁽³⁾	.018 ⁽³⁾	1.000	-.02
	MAS	87	4.04	.952				PE ⁽²⁾ – MAS ⁽³⁾	.094 ⁽³⁾	1.000	-.11
Institutional sensitivity	CE	92	3.30	.881	2.439	15.302	.000*	CE ⁽¹⁾ – PE ⁽²⁾	.154 ⁽²⁾	.304	-.18
	PE	263	3.45	.730				CE ⁽¹⁾ – MAS ⁽³⁾	.375 ⁽¹⁾	.004*	.45
	MAS	87	2.92	.785				PE ⁽²⁾ – MAS ⁽³⁾	.529 ⁽²⁾	.000*	.69
Awareness of gender inequalities	CE	92	1.99	1.205	2.439	.314	.731	CE ⁽¹⁾ – PE ⁽²⁾	.007 ⁽¹⁾	1.000	.00
	PE	263	1.98	1.344				CE ⁽¹⁾ – MAS ⁽³⁾	.126 ⁽¹⁾	1.000	.05
	MAS	87	1.86	1.182				PE ⁽²⁾ – MAS ⁽³⁾	.119 ⁽²⁾	1.000	.09
Predisposition to study	CE	92	2.59	.728	2.439	.271	.763	CE ⁽¹⁾ – PE ⁽²⁾	.020 ⁽¹⁾	1.000	.02
	PE	263	2.57	.689				CE ⁽¹⁾ – MAS ⁽³⁾	.073 ⁽¹⁾	1.000	.09
	MAS	87	2.52	.692				PE ⁽²⁾ – MAS ⁽³⁾	.052 ⁽²⁾	1.000	.07
Satisfaction study	CE	92	3.15	.583	2.439	7.284	.001*	CE ⁽¹⁾ – PE ⁽²⁾	.228 ⁽¹⁾	.010*	.38
	PE	263	2.92	.610				CE ⁽¹⁾ – MAS ⁽³⁾	.354 ⁽¹⁾	.001*	.52
	MAS	87	2.79	.765				PE ⁽²⁾ – MAS ⁽³⁾	.125 ⁽²⁾	.335	.18

Note. CE=Childhood Education; PE=Primary Education; MAS=Master; M=Mean; SD= Standard deviation; df= Degree freedoms; p= significance; MD= Mean differences; F= Statistic T-Student test

Table 6 shows the results of the bivariate analysis performed using Pearson's correlation test. Due to the size of the sample, only correlations higher than ,300 are highlighted. The factor Gender in the Study Plans correlates positively with Satisfaction with the study ($r = .320$). Institutional Sensitivity correlates positively with Predisposition and Satisfaction with study ($r = .340$ and $r = 3.90$). The strongest correlation obtained was between the factors Predisposition and Satisfaction with studies ($r = .657$).

Table 6

Bivariate correlations between the studied factors and age

	1	2	3	4	5	6
1. Gender in the curriculum		.225**	.176**	.281**	.320**	-.056
2. Institutional sensitivity		1	.110*	.340**	.390**	-.133**
3. Awareness of gender inequalities			1	.063	.006	-.132**
4. Willingness to study				1	.657**	.062
5. Satisfaction study					1	.038
6. Age						

Discussion

From the results obtained in the self-developed questions, it can be seen that most of the participants have not been trained following a coeducational model. Data that coincide with the study by Heras-Sevilla et al. (2021), who determined that only one in three students has received training in coeducation. Sánchez-Bello and Iglesias-Galdo (2017) state that, despite the attempt to include coeducation in schools, coeducation is still deeply rooted: boys and girls share the same classroom, study the same contents and have the same opportunities to access university studies, but that some stereotypes still exist that make them choose some optional subjects or certain university degrees depending on the sex they are. Depending on the level of studies they are pursuing, master's degree students are the ones who report having been less educated following models based on gender equality. This idea can be understood because the concept of coeducation is being implemented progressively in schools, being now when more work is being done.

The second of the questions focused on the importance of families in eradicating gender stereotypes. 65% of the subjects agree that it is a very important educational agent to eradicate such inequalities. Bonelli (2019), in her work, reveals the importance of the family in this aspect, stating that there are certain facts that are still present in families today and that contribute to the continued presence of stereotypes, such as the distribution of household chores or the raising of children.

When asked about the knowledge of the equality plans of the university in which they have studied, the participants shed data on the lack of knowledge that they have about these plans. Sixty-seven percent of the university students reported that they did not know whether or not their university had equality plans. According to Organic Law 3/2007, or the Equality Law, Spanish universities (as public administration institutions) are obliged to develop gender equality plans, but the data obtained imply that students are unaware of them, so their usefulness is limited.

Regarding the last of the questions, it stands out that most of the participants are in favor of coeducation. There is only a small percentage of the subjects who did not respond affirmatively to this question, the main cause being lack of knowledge about this subject. Resa (2021) corroborates this idea, stating that teachers who do not identify the work of gender equality in the classroom as relevant are those who have not received the necessary training on this issue.

The percentages in all the sociodemographic questions did not show large differences between the sexes, which shows that the differences are becoming smaller and smaller. The idea emerges that both boys and girls are concerned about issues related to gender equality. The Youth in Spain 2020 Report (Instituto de la Juventud, 2021, p. 257) which analyzes youth attitudes towards gender equality shows that this is an issue that concerns all youth, but to a greater extent young women. While about 60% of men have a high degree of interest in this issue, the percentage of women is 80%.

With regard to the EFIG scale, the results show that the dimension that obtained the highest scores is the incorporation of GP in the curricula, which may indicate that they need more work on this issue throughout their studies. The study by Sanabrias-Moreno et al. (2020) confirms this idea, highlighting that, of the 240 credits that make up the PE degree at the University of Jaén, only 15.4% deal with gender or coeducation issues. A similar percentage is found in the CE degree, with 12.5% of the credits. In this same dimension, statistically significant differences have been found in favor of girls, which implies that they are more concerned about the incorporation of GP work in their study plans than boys. These data coincide with those obtained by Cardona-Moltó and Miralles-Cardona (2022).

The application of the scale of commitment to studies shows that women have a greater satisfaction and predisposition with their studies, in the same way as occurs in the study by Cachón-Zagalaz et al. (2018). Traditionally, studies related to the educational field (as is the case of those mentioned in this work) have been mostly chosen by the female sex (Sanabrias-Moreno et al. 2020), which may explain why they feel more comfortable within this type of degrees.

The results show that CE and PE students score higher than master's students on institutional sensitivity. This may be due to the fact that their studies last 4 years, while the master's degree usually lasts 1 year. During these 4 years of studies they can learn more about university policies on gender equality or meet more teachers involved in the teaching of coeducation, while the academic year of the master's degree is divided between classes in the faculty and internships in secondary schools, so they are only attending the university for a few months.

When analyzing student satisfaction with their degrees according to the studies they are pursuing, it stands out that CE students are the ones who show a higher rate of satisfaction with their degrees. The study by Cantón-Mayo et al. (2017) states that 98.4% of CE teachers have chosen this profession as their first choice because they have a clear teaching vocation.

When correlating the dimensions of the questionnaires used, it is found that there is a positive relationship between the concern that students have for the inclusion of gender in their curricula and the satisfaction they feel for the same. Similarly, when analyzing institutional sensitivity, a positive correlation is also observed with the satisfaction and predisposition of university students for their studies. This suggests that the future teaching staff is concerned about the inclusion of GP in their study plans and that they feel satisfied and predisposed to continue with their studies, because they see that they are being provided with tools to work on this subject in their future work. This data is important because their training in GP will be key for education in equality to really reach the classroom, allowing society to evolve in a more egalitarian way (Mina-Ballesteros, 2021). The strongest correlation found was between the dimensions predisposition and satisfaction with studies, as in the manuscript by Ardiles et al. (2020). It makes sense to think that the more students are predisposed to their

studies, going regularly to classes, participating in them and showing interest, the more satisfied they will be with their studies.

As a main limitation, it is worth mentioning the difference between the number of boys and girls, which is due to the fact that in Spain there are more females than males interested in pursuing education-related degrees.

Conclusions

The sociodemographic questions conclude that the majority of the participating sample has not received training in coeducation prior to their university studies, although they are in favor of teaching it at the different educational levels. Similarly, 65% of the subjects agree that their family environment contributes to the eradication of gender stereotypes. It is also concluded that most of them do not know if there is an Equality Plan in their university.

With regard to the sensitive evaluation of gender equality training, it is determined that women are the most concerned about the inclusion of GP in their study plans. Likewise, they are the ones who show the greatest predisposition and satisfaction towards them.

As for the results obtained according to the degree they are studying, it is affirmed that CE and PE students show a greater knowledge of the inclusion or absence of GP in the different subjects they are studying. Likewise, the study concluded that CE students are the most satisfied with their university studies.

In addition, it should be noted that concern for the incorporation of the subject of GP in the curricula of future teachers and its implementation in university reality correlates positively with the predisposition and satisfaction shown by students with their studies.

Training in gender equality is in continuous progress and the future teachers who will train the youngest students seem to be committed to this cause. However, although the university institution seems to be showing more concern than in previous years, there are still issues that go unnoticed by students, such as the Equality Plans proposed by many university institutions in order to train, detect and prevent gender violence or sexist harassment.

Conflict of interest

The authors declare that they have no conflicts of interest

References

Ardiles, R., Alfaro, P., Moya, M., Leyton, C., Rojas, P., & Videla, J. (2020). La inteligencia emocional como factor amortiguador del burnout académico y potenciador del engagement académico. *Revista Electrónica de Investigación en Docencia Universitaria*, 2(1), 53-83.

- Ballarín-Domingo, P. (2017). ¿Se enseña coeducación en la universidad? *Atlánticas. Revista Internacional de Estudios Feministas*, 2, 7-31 <http://dx.doi.org/10.17979/arief.2017.2.1.1865>
- Belando, N., Ferriz-Morell, R., & Moreno-Murcia, J. A. (2012). Propuesta de un modelo para la mejora personal y social a través de la promoción de la responsabilidad en la actividad físico-deportiva. *RICYDE. Revista internacional de ciencias del Deporte*, 29(8), 202-222. <http://dx.doi.org/10.5232/ricyde2012.02902>.
- Bonelli, A. N. (2019). Estereotipos de género transmitidos a los niños y niñas en la familia postpatriarcal. *Journal de Ciencias Sociales*, 12, 62-85.
- Bravo-Torres, G. (2018). Factores que determinan la elección de carrera profesional: en estudiantes de undécimo grado de colegios públicos y privados de Barrancabermeja. *Revista Psicoespacios*, 12(20), 35-48. <https://doi.org/10.25057/issn.2145-2776>
- Cachón-Zagalaz, J., Lara-Sánchez, A., Zagalaz-Sánchez, M. L., López-Manrique, I., & González-González de Mesa, C. (2018). Propiedades psicométricas de la Utrecht Work Engagement Scale en estudiantes de educación. *Suma Psicológica*, 25, 113-121. <http://dx.doi.org/10.14349/sumapsi.2018.v25.n2.3>
- Cantón-Mayo, I., García-Martín, S., & Cañón-Rodríguez, R. (2017). Construcción de la identidad profesional en los futuros maestros de infantil. *Infancia, educación y aprendizaje*, 3(2), 612-617.
- Cardona-Moltó, M. C., & Miralles-Cardona, C. (2022). Education for Gender Equality in Teacher Preparation: Gender Mainstreaming Policy and Practice in Spanish Higher Education. In J. A. Boivin & H. Pacheco-Guffrey (Eds.), *Education as the Driving Force of Equity for the Marginalized* (pp. 65-89). IGI Global.
- Casad, B. J., Franks, J. E., Garasky, C. E., Kittleman, M. M., Roesler, A. C., Hall, D. Y., & Petzel, Z. W. (2020). Gender inequality in academia: Problems and solutions for women faculty in STEM. *Journal of Neuroscience Research*, 1-11 <https://doi.org/10.1002/jnr.24631>
- Chacón-Cuberos, R., Ramírez-Granizo, I., Ubago-Jiménez, J. L., & Castro-Sánchez, M. (2020). Autoconcepto multidimensional en estudiantes universitarios según factores sociales y académicos. *Journal of Sport and Health Research*, 12(Supl 2), 107-116.
- Declaration of Helsinki Ethical Principles for Medical Research Involving Human Subjects. World Medical Association. (1964). <https://www.wma.net/wp-content/uploads/2016/11/DoH-Oct2013-JAMA.pdf>.
- Fernández, A., González, M., & Ruiz, M. A (2022). Utilidad de la práctica del jigger como recurso coeducativo y de transformación social. *Quaderns d'animació i Educació Social*, 35, 118.
- Galé, M. J., Garrido, B., Galdo, J. M., Clavero, N., Sanagustín, L., & Moyano, N. (2019). La coeducación, el camino hacia la igualdad de género. *Revista digital de educación del FEA-E-Aragón*, 26, 1-98.
- Hernández-Abenza, L. (2011). Experiencias de formación e innovación en educación infantil, primaria y secundaria. In J. J. Maquilón-Sánchez (Ed.), *La formación del profesorado en el siglo XXI: Propuestas ante los cambios económicos, sociales y culturales* (pp.1-19). Editum.
- Hernández-Prados, M^a. A., Gallego-Jiménez, M.^a G., Carbonell-Bernall, N., & Tude-la-Perera, G. (2022). La coeducación en los patios de primaria: una propuesta

- de transformación desde el alumnado. *Revista Atenea*, 525, 129-149. <https://doi.org/10.29393/At525-7CPMG40007>
- Hortigüela, D., Pérez-Pueyo, A., & Fernández-Río, J. (2016). Influencia de las experiencias vivenciadas por el alumnado en el desempeño de futuras competencias docentes. *Contextos Educativos*, 19, 25-41. <https://doi.org/10.18172/con.2742>
- Instituto Asturiano de la Mujer. (s.f). *Coeducación en la nueva Ley de Educación LOMLOE*. <https://iam.asturias.es/documents/269132/370594/Coeducaci%C3%B3n+en+la+LOMLOE.pdf/25a07134-3075-6ae6-1c17-2dcf49e4b044>
- Instituto de la Juventud. (2021). *Informe Juventud en España 2020*. http://www.injuve.es/sites/default/files/adjuntos/2021/03/informe_juventud_espana_2020.pdf
- Kline, P. (1995). *The handbook of psychological testing*. Routledge.
- Ley Orgánica 1/1990, de 3 de octubre, de Ordenación General del Sistema Educativo. *Boletín Oficial del Estado*, 238, de 4 de octubre de 1990. <https://www.boe.es/boe/dias/1990/10/04/pdfs/A28927-28942.pdf>
- Ley Orgánica 3/2007, de 22 de marzo, para la igualdad efectiva de mujeres y hombres. *Boletín Oficial del Estado*, 71, de 23 de marzo de 2007. <https://www.boe.es/eli/es/lo/2007/03/22/3/con>
- Ley Orgánica 3/2020, de 19 de diciembre, por la que se modifica la Ley Orgánica 2/2006, de 3 de mayo, de Educación. *Boletín Oficial del Estado*, 340, de 30 de diciembre de 2020. <https://www.boe.es/eli/es/lo/2020/12/29/3>
- Martín-Rodrigo, M. J. (2018). *Influencia de los estereotipos de género en la elección de estudios universitarios*. Comillas Universidad Pontificia. <https://repositorio.comillas.edu/xmlui/bitstream/handle/11531/31500/Leccion%20Inaugural%202018-2019%20final.pdf?sequence=1&isAllowed=y>
- Mina-Ballesteros, J. E. (2021). *Necesidades de formación de los y las estudiantes de carrera de Educación Inicial de la PUCESE para la aplicación de la coeducación* [Tesis Doctoral]. Pontificia Universidad Católica del Ecuador. <https://repositorio.pucese.edu.ec/handle/123456789/2748>
- Miralles-Cardona, C., Cardona-Moltó, M. C., & Chiner, E. (2020). La perspectiva de género en la formación inicial docente: estudio descriptivo de las percepciones del alumnado. *Educación XX1*, 23(2), 231-257. <https://doi.org/10.5944/educXX1.23899>
- Otero-Gutiérrez, G., Cárdenas-Rodríguez, R., & Monreal-Gimeno, M^a. C. (2022). Instrumentos para el análisis de la Coeducación en los centros educativos. *Revista de Estudios Socioeducativos*, 10, 213-226. <https://revistas.uca.es/index.php/ReSed/article/view/8655>
- Real Decreto 861/2010, de 2 de julio, por el que se modifica el Real Decreto 1393/2007, de 29 de octubre, por el que se establece la ordenación de las enseñanzas universitarias oficiales. *Boletín Oficial del Estado*, 161, de 3 de julio de 2010. <https://www.boe.es/eli/es/rd/2010/07/02/861>
- Reinking, A., & Martín, B. (2018). La brecha de género en los campos STEM: Teorías, movimientos e ideas para involucrar a las chicas en entornos STEM. *Journal of new approaches in educational research*, 7(2), 160-166. <https://doi.org/10.7821/naer.2018.7.271>
- Resa, A. (2021). La formación en igualdad de género en los grados de Educación Primaria. *Revista Electrónica Interuniversitaria de Formación del Profesorado*, 24(1), 13-27. <http://doi.org/10.6018/reifop.390951>

- Sanabrias-Moreno, D., & Sánchez-Zafra, M. (2021). Educación de la mujer. Evolución y actualidad. In J. Cachón-Zagalaz, A. J. Lara-Sánchez, F. Chacón-Borrego, & M. L. Zagalaz-Sánchez (Eds.), *Mujeres* (pp. 21-48). Aula Magna
- Sanabrias-Moreno, D., Sánchez-Zafra, M., Cachón-Zagalaz, J., & Lara-Sánchez, A. (2020). La coeducación en la formación del profesorado de educación infantil y primaria. In I. Aznar-Díaz, M.ª. P. Cáceres-Reche, J. M. Romero-Rodríguez, & J. A. Marín-Marín (Eds.), *Investigación e Innovación Educativa. Tendencias y Retos* (pp. 377-393). Dykinson, S. L.
- Sanagustín, L., & Moyano, N. (2019). Evaluación de la formación docente y actitudes hacia la pedagogía feminista en Aragón. *Revista digital de educación del FE-AE-Aragón*, 26, 24-27.
- Sánchez Torrejón, B., & Barea Villalba, Z. (2019). Hacia una escuela violeta: la formación inicial del alumnado de Educación Primaria en coeducación. *Tendencias Pedagógicas*, 34, 76-92. <https://doi.org/10.15366/tp2019.34.007>
- Sánchez, B., Álvarez, A., & Escribano, M. (2021). Logros y desafíos de la (co)educación: un camino violeta por recorrer. *Revista De Estudios Socioeducativos*, 9, 145-159. https://doi.org/10.25267/Rev_estud_socioeducativos.2021.i9.10
- Sánchez-Bello, A., & Iglesias-Galdo, A. (2017). Coeducación: feminismo en acción. *ATLÁNTICAS, Revista Internacional de Estudios Feministas*, 2, 1-6. <http://dx.doi.org/10.17979/arief.2017.2.1.1865>
- Sanz-Gómez, M. A. (2019). Coeducación en la familia. In M.ª. J. Galé, B. Garrido, J. M.ª. Galdo, N. Clvaero, L. Sangustín, & N. Moyano (Eds.), *La coeducación, el camino hacia la igualdad de género* (pp. 31-33). Revista Digital del Fórum Europeo de Administradores de la Educación en Aragón. <http://feae.eu/wp-content/uploads/2019/03/Forum-Arag%C3%B3n-26-3.pdf#page=31>
- Schaufeli, W. B., & Bakker, A. B. (2003). *Original: UWES – Utrecht Work Engagement Scale preliminary manual. Occupational Health Psychology Unit*. Utrecht University
- Schmider, E., Ziegler, M., Danay, E., Beyer, L., & Bühner, M. (2010). Is it really robust? Reinvestigating the robustness of ANOVA against violations of the normal distribution assumption. *Methodology*, 6(4), 147-151. <https://doi.org/10.1027/1614-2241/a000016>
- UNESCO. (2015). *Foro mundial de Educación. Declaración de Incheon. Educación:2030: Hacia una educación inclusiva y equitativa de calidad y un aprendizaje a lo largo de la vida para todos*. <https://bibliotecadigital.mineduc.cl/handle/20.500.12365/18066>
- Valdivia-Moral, P. A., Molero, D. M., Campoy, T. J., & Zagalaz, M. L. (2015). Pensamiento coeducativo del profesorado de educación física: propiedades psicométricas de una escala. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte*, 15(58), 269-288. <https://dx.doi.org/10.15366/rimcafd2015.58.005>