







Attitude towards gender equality and coeducation among Secondary School teachers: a case study in Madrid, Spain

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Abstract

Introduction. In spite of the education reform and the introduction of mixed schools, there are

still obstacles to gender equality in Spain. Sexist attitudes and values continue to influence

personal development and career choices, limiting women's participation in many spheres. The

opinions, beliefs, ideas, conceptions, expectations and personal attitude of teaching

professionals exert a great influence on the students who perceive them, which calls for up-to-

date information on teaching staff's perceptions towards gender equality and coeducation.

Method. In this work, results from a survey distributed to 105 teachers in three Secondary

Schools in the Autonomous Community of Madrid are presented. The retrieved data was

analyzed by using parametric (ANOVA) and non-parametric (Kruskal-Wallis) tests.

Results. Significant differences were found among the respondents in terms of their views on

gender equality for the gender and gender*age factors, and for the gender and years of teaching

experience factors in the case of their perceptions about coeducation.

Discussion and Conclusion. Although the tendency toward a true status of equality was more

pronounced in women than in men, an adequate predisposition of the majority of teachers of

both sexes towards the achievement of a social equality model based on the promotion of peer

roles and coeducational practices was found. Teaching staff appears to be aware of the

importance of adopting policies and laws that favor effective and real equality between men

and women.

Keywords: gender equity; mixed education; Secondary Education; survey

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Attitudes towards gender equality and coeducation among Secondary School teachers: a case of study in the Autonomous Community of Madrid, Spain

Resumen

Introducción. A pesar de la reforma educativa y de la introducción de escuelas mixtas, todavía

existen obstáculos para la igualdad de género en España. Las actitudes y los valores sexistas

siguen influyendo en el desarrollo personal y en las opciones profesionales, limitando la

participación de la mujer en muchos ámbitos. Las opiniones, creencias, ideas, concepciones,

expectativas y actitudes personales de los profesionales de la enseñanza ejercen una gran

influencia en el alumnado que las percibe, por lo que es necesario disponer de información

actualizada sobre las percepciones del profesorado en relación con la igualdad de género y la

coeducación.

Método. En este trabajo se presentan los resultados de una encuesta distribuida a 105 profesores

en tres Institutos de Enseñanza Secundaria de la Comunidad Autónoma de Madrid. Los datos

recogidos se analizaron mediante el uso de pruebas paramétricas (ANOVA) y no paramétricas

(Kruskal-Wallis).

Resultados. Se encontraron diferencias significativas entre las personas encuestadas en cuanto

a su opinión sobre la igualdad de género para los factores de género y género*edad, y para los

factores de género y años de experiencia docente en el caso de sus percepciones sobre la

coeducación.

Discusión y **Conclusión**. Aunque la tendencia hacia una verdadera condición de igualdad fue

más pronunciada en las mujeres que en los hombres, se encontró una adecuada predisposición

de la mayoría de los profesores de ambos sexos hacia el logro de un modelo de igualdad social

basado en la promoción de roles paritarios y prácticas coeducativas. Los docentes parecen ser

conscientes de la importancia de adoptar políticas y leyes que favorezcan una igualdad real

entre hombres y mujeres.

Palabras clave: equidad de género; educación mixta; educación secundaria; encuesta

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Introduction

The conceptualization of gender equality in education must be understood not only as the right to education (access and participation), but also as rights within the education system (environment, processes and educational outcomes with gender awareness) and rights through education (significant educational outcomes that link education equality with broader processes of gender justice) (Aragonés-González, Rosser-Limiñana, & Gil-González, 2020).

Coeducation is a system of pedagogy in which the principle of gender equality and non-discrimination based on sex is applied. Coeducation means not establishing dominance relationships that subordinate one sex to another, but incorporating the realities and history of women and men on equal terms to educate on equality from the difference. This method of education overcomes the formal equality derived from mixed education (in which boys and girls are taught some curriculum, course or skill together in the same facility at the same time) in favor of a more real equality by applying the principle of gender equality and overcoming social stereotypes assimilated to differentiation by sex (Alvarez-Uria, Lasarte Leonet, & Vizcarra Morales, 2019).

Gender equality and women's empowerment was the third of eight United Nations Millennium Development Goals for 2015, and now has become the fifth of seventeen Sustainable Development Goals (SDGs) in the ambitious post-2015 development agenda (to be achieved by 2030). This goal (closely related to SDG number 4 on quality and inclusive education, and to SDG number 10 on reduced inequalities) focuses on eliminating gender disparities at all levels of education, with the goal of not only closing the gender gap in education, but also of increasing women's share of wage employment and ensuring women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life (UN General Assembly, 2015; United Nations, 2015). As noted by Kabeer (2010), it may be regarded as an intrinsic rather than as an instrumental goal, as it can be explicitly valued as an end in itself.

As part of the necessary efforts that need to be undertaken to achieve the five targets of this SDG, a clear picture of what is happening and good data are essential in order to monitor the progress made and to detect specific problems and bottlenecks that deprive girls and women of full and equal opportunities for education. Sex-disaggregated statistics for the various levels

of education, such as the ones presented in the World Atlas of Gender Equality in Education (Fiske, Unesco., & Collins Bartholomew Ltd., 2012) or in the UNESCO eAtlas for Education 2030 (UNESCO, 2016), and analyses of the participation status of women in higher education across the varying socio-economic and sociological backgrounds observed in different countries and regions, such as those recently compiled by Fontanini, Joshi, and Paivandi (2020) or Papa (2020), are particularly valuable. Nonetheless, understanding teachers' attitudes may also be regarded as an important aspect, provided that they play a key role in the change that needs to be driven, and because their expectations have a direct impact on students' performance (Garcia, Sulik, & Obradović, 2019; Wang, Rubie-Davies, & Meissel, 2018; Wells, Seifert, & Saunders, 2013).

In this line, a very active topic of research worldwide is related to the beliefs and attitudes of teachers on gender equality and coeducation, as evidenced by recent studies reported for Vietnam (Mai & Brundrett, 2019); Turkey (Idin & Dönmez, 2017; Sari, 2017); South Africa and Finland (Engelbrecht & Savolainen, 2017); Ireland, UK, France, Latvia, Italy and Spain (Fine-Davis & Faas, 2014); or Taiwan (Sinacore, Chao, & Ho, 2018), to name a few.

Other closely-related research line focuses on the relevance of acting on the education system at the early stages for the promotion of gender equality. A recent scoping review paper by Aragonés-González et al. (2020) offers a panorama of the existent international scientific literature on typologies of interventions that have been implemented to promote coeducation and the real impact they have had.

As regards the situation on gender equality in education in Spain, the European Institute for Gender Equality (EIGE), in its Gender Equality Index 2017 report, in which the progress and challenges in achieving gender equality across the European Union from 2005 to 2015 were examined, assigned a score of 68.3 out of 100 to Spain, which represents a drop of two positions from 2005 (European Institute for Gender Equality, 2018). Although the EIGE concluded that the situation had improved in the knowledge domain, it highlighted that gender segregation in study fields remained a challenge, stating that 48% of women tertiary students concentrate in the fields of education, health and welfare, humanities and arts (traditionally seen as 'feminine'), and pointing to issues of gender bias and stereotypes at a Secondary Education level. This entirely agrees with the analysis of coeducation in the Spanish education system recently conducted by Gallardo-López, García-Lázaro, and Gallardo-Vázquez (2020), and with

previous works on the topic by Abellán (2014); Aristizabal, Gomez-Pintado, Ugalde, and Lasarte (2017); Piedra de la Cuadra, García Pérez, Rebollo Catalán, and Ries (2011); Piedra and Caro (2010); Rebollo-Catalan, García Perez, Piedra, and Vega (2011); Romero Rodríguez and Lugo Muñoz (2014); Vega Caro and Piedra de la Cuadra (2009), among others.

Objectives

The aim of the work presented herein has been to analyze the perceptions of Secondary School teachers in the Autonomous Community of Madrid regarding gender equity/inequity and to gain insight into their attitude towards coeducation.

Method

Instruments

In accordance with the proposed goals, descriptive research is presented (García Sanz & García Meseguer, 2012) framed in a quantitative approach. Specifically, a case study has been carried out in which a survey has been used to collect data in the secondary schools that have collaborated to this work.

The questionnaire used in the study was developed by Díaz-Pines Sendra (2005) as part of the 1st Gender Equality in Education Plan sponsored by the Autonomous Community of Andalusia (Spain), aimed at diagnosing the reality of Secondary Schools in terms of gender equity/equality. The survey consisted of two sections, one focused on the teaching staff's attitude towards gender equality and the other aimed at assessing their perspectives about coeducation. The former (test I) included 30 questions and the latter (test II) consisted of 16 questions. All questions had to be answered according to a Likert scale, from 1 to 5, in which 1 indicated "entirely in disagreement" and 5 corresponded to "entirely in agreement". Three additional multiple-choice questions were added to the original questionnaire in order to retrieve basic information on the participants: gender, age and total number of years of teaching experience.

In the first section of the survey, questions 1-3-4-5-6-8-9-11-13-14-15-16-17-18-19-22-25-26-27-28-29-30 were sexist (e.g., "womanhood and responsibility are antagonic concepts" [tr.]), whereas questions 2-7-10-12-20-21-23-24 were not (e.g., "the biological characteristics of each of the sexes are not discriminatory determinants" [tr.]). The assessment was conducted

according to the scale shown in Table 1, so that the highest scores always corresponded to the least sexist attitudes.

Table 1. *Points assigned to the answers in the first section of the survey.*

Sexist questions		Non-sexist questions		
Answer	Points	Answer	Points	
1	2	1	-2	
2	1	2	-1	
3	0	3	0	
4	-1	4	1	
5	-2	5	2	

In the second section of the survey, the points of each answer were added, in such a way that if the sum was in the 48-80 interval, the attitude was regarded as 'very positive', expressing willingness to work on coeducation; if the sum was in the 16-47 range, an 'average' attitude was inferred, pointing to increasing awareness; and if the sum was lower than 16, it was ascribed to a 'negative' attitude and to a lack of awareness of the need to work on this matter in the school.

Procedure

The survey was distributed to the teaching staff of three Secondary Schools in Madrid, Spain (viz. I.E.S. Villarejo de Salvanés, in Villarejo de Salvanés; I.E.S. Anselmo Lorenzo, in San Martín de la Vega; and I.E.S. Ana María Matute, in Velilla de San Antonio) by the Head Teachers through the intranet email service, and was administered via Google Forms (http://bit.ly/genderequalitycoeducation) in May 2019. The three secondary schools are medium-size bilingual centers, with 485, 686 and 618 enrolled students (excluding those pursuing A-levels), and with 48, 59 and 55 full-time teachers, respectively.

Data Analysis

The statistical analysis of the data was conducted with IBM Statistical Package for the Social Sciences (SPSS) software (Armonk, NY, USA). To analyze potential differences among groups taking into consideration the effects of multiple factors and their interactions, when parametric assumptions were verified (test I), a multiple-way ANOVA (MANOVA) was performed, using Tukey's HSD (honestly significant difference) *post hoc* test for multiple pairwise comparisons. Otherwise, Kruskal-Wallis non-parametric test was chosen, using

Conover-Iman test with Bonferroni correction for the multiple pairwise comparisons. To examine the reliability of the proposed questions, Cronbach's alpha was calculated for the two sections.

Results

Profile of survey respondents

One hundred-and-five members of the teaching staff filled out the form. Basic information on their gender, age and years of teaching experience is summarized in Figure 1.

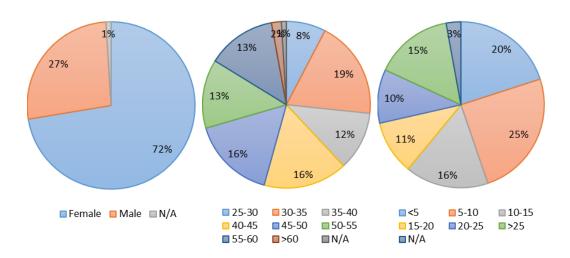


Figure 1. From left to right: distribution of the participants (n=105) as a function of gender, age and years of teaching experience. N/A stands for not available (no answer).

Reliability assessment

Cronbach's alpha values for the two sections of the survey were higher than 0.90 (0.971 and 0.993, respectively). Although this points to a high degree of internal consistency, it also suggests that some items in the survey designed by the Autonomous Community of Andalusia were redundant and that the test length could have been shortened.

Attitudes towards gender equality

In this section of the questionnaire (test I), scores obtained by the participants ranged from 0 to 59, with a mean value of 38.9 and a standard deviation of 11.6. The three-way ANOVA showed significant differences for the gender and gender*age factors (see Table 2).

The *post hoc* comparisons of means as a function of aforementioned two factors are presented in Table 3 and Figure 2, respectively.

Table 2. Results from three-way ANOVA (type I sum of squares analysis) for test I.

Factors	DF	Sum of squares	Mean squares	F	Pr > F
Gender	1	917.055	917.055	8.645	0.005
Age	7	370.329	52.904	0.499	0.832
Years of teaching experience	5	737.388	147.478	1.390	0.241
Gender*Age	6	2370.716	395.119	3.725	0.003
Gender*Years of teaching experience	5	317.458	63.492	0.599	0.701
Age*Years of teaching experience	16	2500.151	156.259	1.473	0.141
Gender*Age*Years of teaching experience	3	320.931	106.977	1.008	0.395

DF = degrees of freedom; F = F critical value; Pr > F = p-value for F statistics

Table 3. Results of Tukey's HSD test for gender factor in test I: analysis of the differences between the categories with a confidence interval of 95%.

Gender	LS means	Standard error	Lower bound (95%)	Upper bound (95%)	Groups
Male	34.000	2.134	29.767	38.233	A
Female	40.707	1.304	38.120	43.293	В

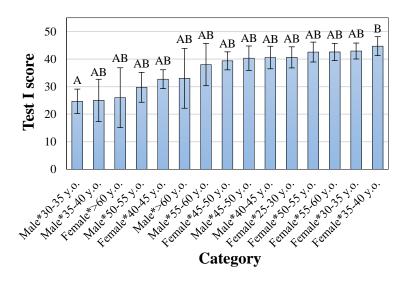


Figure 2. Test I scores as a function of the gender*age factor. Categories labelled with the same uppercase letters are not significantly different at p < 0.05 by Tukey's test.

Male teachers obtained significantly lower scores in terms of their attitude towards gender equality (ca. 6 points lower than their female colleagues on average), which suggests a more sexist frame of mind. When the age factor was also taken into consideration, it could be observed that the lowest scores (indicative of more sexist attitudes) corresponded to males in their thirties (n=8), with scores lower than 25 points, while the highest scores were attained by women in the same age range (n=24), with an average of almost 45 points. An unexpected result was the low score for females older than 60, but it may be discarded as an outlier, provided that there was only one response in this category.

Attitudes towards coeducation

In this part of the questionnaire (test II), scores were in the 34-76 interval, with a mean value of 61 and a standard deviation of 7.5. The non-parametric statistical analysis showed significant differences for the gender and years of teaching experience factors. Groups according to Conover-Iman test for these two factors are presented in Table 4 and Table 5, respectively.

Table 4. Summary statistics and multiple pairwise comparisons using the Conover-Iman procedure for the gender factor in test II.

Gender	Minimum	Maximum	Mean	Std. deviation	Mean of ranks	Groups
Male	34.000	75.000	58.750	8.258	42.446	A
Female	41.000	76.000	61.813	7.126	55.567	В

Table 5. Summary statistics and multiple pairwise comparisons using the Conover-Iman procedure for the years of teaching experience factor in test II.

Experience (years)	Minimum	Maximum	Mean	Std. deviation	Mean of ranks	Gro	ups
10-15	46.000	67.000	55.529	5.702	27.912	A	
<5	48.000	72.000	60.714	6.994	50.357	A	В
>25	41.000	70.000	61.941	6.694	55.971	A	В
20-25	49.000	74.000	62.273	7.030	56.227	A	В
5-10	34.000	76.000	62.038	8.906	57.442		В
15-20	51.000	74.000	64.636	6.169	69.136		В

Regarding the impact of gender, the mean rank value for males (group A) was 42.4 ('average' attitude), 17% lower than that of female respondents (group B, with a mean rank value of 55.6, associated with a 'very positive' attitude). Concerning the years of teaching experience, statistically significant differences were observed between the teaching staff with 10-15 years of experience (with a mean rank value of 27.9, corresponding to an 'average' attitude) and the teachers with 5-10 and 15-20 years of experience (with mean rank values of 57.4 and 69.1, respectively, pointing to a clear willingness to work on coeducation).

Discussion and conclusion

In view of the results presented in previous subsection, our findings would be in good agreement with those reported by Vega Caro and Piedra de la Cuadra (2009) for 324 teachers from 19 centers in the province of Sevilla (Spain). The authors found that all the participants showed a certain awareness and disposition towards the culture of equality, although women manifested positions that were more favorable to coeducation and equality promotion, while male positions were more ambiguous or indefinite.

In the studies on attitudes carried out by Rebollo-Catalan et al. (2011) and Romero Rodríguez and Lugo Muñoz (2014) for different schools in Seville (as part of TEON XXI project), it was also observed that the most favorable attitudes towards equality came from the group of female teachers, concluding the need to continue with equality measures and teacher training of Secondary Schools. When the same questionnaire was distributed among teachers from secondary schools in Murcia, another province in southern Spain, the results again denoted a generally positive attitude of teachers towards the implementation of coeducation in their classrooms, although differences according to sex were perceived too (Abellán, 2014; Azorín & Sánchez, 2014).

Searching for an origin for coeducational positions, Piedra and Caro (2010) analyzed the influence of the policy of the autonomous communities on the construction of the gender culture by comparing the perspectives of Physical Education teachers of Andalusian and Madrilenian educational centers. Using the School Doing Gender/teacher (SDG/t) scale, no significant statistical differences between the professors of both communities were detected.

Nonetheless, the authors noted that teachers from Andalusia (which had a more developed legislation at the time of the study and in which coeducation training was compulsory) obtained higher scores that those from Madrid (who would show a more adaptive positioning).

The favorable attitudes of younger teachers (35 years old and with 5-10 years of experience) may be ascribed to the fact that, in their childhood, they benefited from the first gender actions with institutional support (1988), and subsequently, along their undergraduate university education, from Spain's Fourth Plan for Equality, 2003-2006 (Zufiaurre, Pellejero Goni, & Weiner, 2016). In terms of their education, very few of the teachers born before 1990 could meet the gender strategies focused on persuading teachers and schools about the value of co-education and identifying value perspectives as largely male-defined. "1995-2000/2004 was a period of reversal in that, as education became increasingly bureaucratized, gender policy-making went into decline. The broader national gender strategy broke down and new hierarchical structures were inserted into schooling, employment and social life" (Zufiaurre et al., 2016). This would tentatively explain the attitudes of teachers with 10-15 years of experience, which were less favorable.

An intriguing question would be the origin of the eagerness to work on coeducation of the oldest and more experienced teachers. It may be presumed that they are scholars who were educated in their childhood in mixed schools (arising from the General Education Law of 1970) who, as teachers, in a generalized way, are in favor of co-education. In the pioneering study of Moreton (1946) it was already indicated that: "Those old scholars educated at mixed schools strongly supported coeducation, while those from single-sex schools were almost equally divided for and against". Thus, a combination of several factors may have contributed to gender-favoring co-education attitudes: having a majority of women among the teachers (relevant as role models for female students), a certain ideology inspired by the revolution of 1968 in some of the older teachers, the State Plans for Equality, and the new autonomic educational policies.

From the discussion above, the main take-home message is related to the differences in the attitude of male and female teachers. On the basis of existing research results, it seems reasonable to infer that male teachers seem to have less sensitivity toward the issues of gender than female teachers, and that female scholars are more favorable to coeducation and equality promotion. This suggests that awareness and training in coeducation of male teachers should be a key aspect in the processes of socio-educational change (Aristizabal et al., 2017; García Pérez, Sala, Rodríguez, & Sabuco, 2013), since the teaching staff (and by extension the hidden curriculum that this group transfers to its students) is the mirror at which the students look and by which the students are influenced. In this direction, from the works of Anguita Martínez (2011), Gray and Leith (2004) and Gallardo-López et al. (2020), the initial and permanent training of male teachers in equality is well-established as a guiding principle to fight against inequalities. For the development of an inclusive and coeducational education from a gender perspective, efforts in several directions are needed (Abellán, 2014; Pérez, 2008; Permuy Martínez, Villar Varela, & Méndez-Lois, 2018), related to: distributed leadership; a (co)education project; co-responsibility; collaboration *vs.* competitiveness; cooperative learning; creation of co-educational inter-center networks; design, implementation and evaluation of improvement plans; participation in congresses and forums on issues of coeducation and educational inclusion, etc.

In line with this later point, and although not directly assessed in our survey, some implications may be drawn in connection with the usefulness and influence of the coeducation campaigns and strategies for implementing gender equality carried across the Spanish education system in the last decades. In view of the results of the survey, the policies on gender equality must be maintained. In fact, as noted in the introduction, the recent EIGE inform (European Institute for Gender Equality, 2018) was not as optimistic as UNESCO's report from 2012 (Fiske et al., 2012) in terms of Spanish trends in gender parity. It will be interesting to see whether current legislation and policy implementation, as the recent 'Educating for Equality' campaign (which distributed guidebooks for teachers as well as for students at primary, secondary and tertiary level to more than 50,000 educational establishments in Spain (https://www.educandoenigualdad.com/)) can succeed in changing the attitude about gender equality and coeducation.

Future lines of work

An interesting aspect that may deserve further study would be the area of knowledge (subject) taught by the participants. In a study conducted by Piedra de la Cuadra et al. (2011) in public and private schools in Andalusia, the authors detected that the attitude of physical education teachers (386 out of 1469 participants), significantly differed from those of their colleagues, with an adaptive positioning towards the change for the former as compared to a lean towards education for the latter. They concluded that physical education teachers, and

especially male teachers, would need gender education so to acquire sensitivity and to bring their knowledge up to date.

Another relevant factor would be the influence of the teaching stage and even of the grade levels. Nonetheless, it is worth noting that, while significant differences were found for the age and area of study factors, Togrol and Onur (2000) did not find statistically significant differences for the grade levels.

In addition, the external and internal context of the centers may also be explored, following the guidelines provided by Díaz-Pines Sendra (2005).

Conclusions

The main conclusion of the study is that -in general terms- there is an adequate predisposition on the part of teachers of both sexes towards the achievement of a social equality model based on the promotion of peer roles and coeducational practices, which evidences the existence of positive attitudes for the construction of a culture of gender in the school based on the principle of equity. However, the tendency toward a true status of equality was more pronounced in women than in men, since in most cases they responded by honoring a greater awareness of sexist aspects suggested by the scale of attitudes towards coeducation, which further suggests the need for greater involvement in the improvement of this subject.

The results obtained indicate that the teaching staff is aware of the importance of adopting policies and laws that favor effective and real equality between men and women. Therefore, they prefer to work in educational centers whose schooling is of a mixed nature, as well as using coeducational materials in the teaching and learning process. The majority of the participants is committed to coeducation in the classroom, an idea behind which lies an attitude contrary to sexism and what it entails (sexist jokes, sexist language, etc.) and in favor of gender equality work in the daily work of their teaching praxis and in their man-woman relationships.

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