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Coeducation and gender equality in education systems: a scoping review

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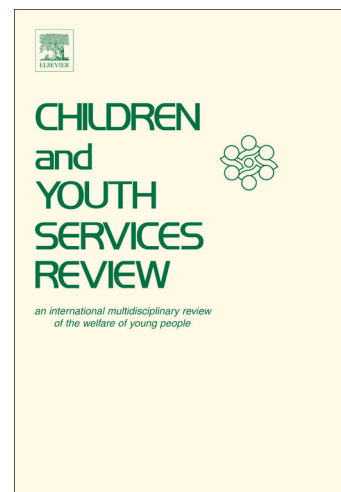Please cite this article as: M. Aragonés-González, A. Rosser-Limiñana, D. Gil-González, Coeducation and gender equality in education systems: a scoping review, *Children and Youth Services Review* (2020), doi: https://doi.org/10.1016/j.childyouth.2020.104837

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SCOPING REVIEW

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COEDUCATION AND GENDER EQUALITY IN EDUCATION SYSTEMS: A SCOPING REVIEW

Abstract

The purpose of this article is to analyse the typology of interventions that have been implemented to promote coeducation. We carried out a systematic selection process, which delivered 18 articles that were included into this Scoping Review. Our study found that there are still scarce experiences of coeducational interventions within the education system. Also, the study reveals how the coeducational interventions have focussed mainly on access, and how some forms of discrimination based on sex still thrives within classrooms by hidden curriculum. Thus, our study reflects the need to promote legislation reform based on the coeducational interventions as well as the necessity to promote specific teacher training in gender and equality.

Keywords: Scoping Review, Coeducation, Gender equality, Education policies, Compulsory education.

1. Introduction

1.1. The school as a socialization agent.

The school environment is the principal socialization agent in which the hegemonic models of society are reproduced and transmitted and, therefore, gender disparities (Simón, 2000). Gender is constructed within institutional and cultural contexts that produce multiple forms of masculinity, also schools are active players in the formation of gender identities (Connell, 1996).

Sexist stereotypes that persist in the school environment reinforce gendered cultural roles (male and female) through the language used inside the classroom and textbooks, as well as through the differentiated treatment that boys and girls receive depending on their gender. All of which hinders the promotion of gender equality to the point that some authors consider it to be one of the main deficiencies in education (Simón, 2010). According to Juliá (2016), the social composition of the school added to the behaviour of its components have a significant impact in widening the gender gap, understanding this as a difference between the way men and women are treated in society, or between what men and women do and achieve (Archer and Francis, 2006).

1.2. Gender Equality and Education

In 1979 the General Assembly of the United Nations adopted a global treaty enshrining women's rights: The Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW)[1]. The CEDAW placed particular attention on education. Since the 1970s, there have been numerous international and national declarations, action plans and projects, which were implemented as a means of raising awareness and educating on gender equality, with an emphasis on the social position of women and girls. Specifically, in its article 10.c. the CEDAW promotes the elimination of all stereotypical concepts about female and male roles in all stages of the education system. One of the tools put forward to achieve this goal is the endorsement of mixed and other forms of education that can contribute to achieving the aim, and in particular, the modification of textbooks and curricula and the adaptation of teaching methods.

Following many initiatives carried out to apply these principles, in 2015 world leaders agreed to work for a more egalitarian world and signed the UN resolution which

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[1] Instrument of ratification of 16th December 1983 of the Convention on the Elimination of all Forms of Discrimination Against Women adopted in 1979 in New York. Available at:
https://www.boe.es/buscar/doc.php?id=BOE-A-1984-6749

established the Sustainable Development Goals (SDGs)[2]. The fourth of these goals is achieving a quality education whereas the fifth refers to gender equality. The Goals stem from the idea that education can contribute to reducing inequality in general and improves gender equality in particular. In the same way, the UN blueprint for sustainable development considers that the empowerment of women and girls is a crucial factor to promote economic growth and social development.

Accordingly, authors such as Subrahmanian (2005) differentiate between two types of goals related to gender equality in education: those oriented towards gender parity (equal participation of boys and girls in all forms of education in accordance with their ratio in the relevant age groups in the population) and goals of gender equality (to guarantee equality in education between boys and girls).

Thus, as Wilson (2003, p. 2) argues, the conceptualization of gender equality in education must be understood 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). Therefore, education centres must integrate the principle of equality, increasing the participation of women and encouraging projects for the promotion and dissemination of the principle of equality (Rebollo et al., 2011).

1.2.1. Different models of intervention in the school system

There have been three distinct education methods throughout history, all of which coexist in the present: segregated, single-sex or differentiated schools, mixed schools, and coeducational schools. The term segregated or differentiated school is used to designate schools that separate students by sex based on supposed physical and psychological differences between boys and girls (González-Varas, 2013, p. 2). Mixed schools, on the contrary, refers to institutions in which boys and girls share the same spaces. However, this does not guarantee that the education is delivered in equal conditions, free of sexist barriers and behaviours (Mirabilia, 2011, p. 90). The third model, coeducational schools, entails a broader outlook compared to mixed schools and has as its central axis the

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[2] United Nations. Available at: https://www.un.org/sustainabledevelopment/es/objetivos-de-desarrollo-sostenible/

acceptance of the person, his or her capabilities and a positive perception of diversity (Mirabilia, 2011, p. 109).

Firstly, the definition of coeducational schools is based in the coeducation of women and men, or of blacks and whites in the United States of America in the 1960s (Riley, 2010; Uria, Leonet & Morales, 2019). Thus, "the synonym of mixed school, and the antonym of segregated school; a co-instruction or co-teaching" (Uria, Leonet & Morales, 2019, p. 63). In the United States, for example, Coeducation, as a mixed school, "had been the norm for most public schools throughout the 19th and 20th centuries" (Hughes, 2006, p. 6).

However, the debate concerning the advantages and disadvantages of each of these models remains open. For example, Mael (1988) considers segregated or differentiated schools as providing more potential for academic and attitude benefits to at least some students. Additionally, Jackson (2002) claims that, while only-girls' classes can have positive effects on girls, all-boys classes do not challenge masculine cultures intrinsic to schools and may even exacerbate them. More recently, Lahelma (2014) has also discussed the persistence of two parallel discourses since the 1980s in her country, Finland. On the one hand 'the gender equality discourse' and on the other, the 'boy discourse' which is related to the findings manifested in international education indicators that point to the fact that the educational level of male students descends in mixed contexts. Subirats (2010) suggests that these movements arise from claims in reference to a natural difference in the maturity process of boys' and girls' brains, as well as to the natural differences in behaviour and attitudes that curtail the development of both in mixed education environments. Another issue mentioned in these debates is the difference in academic performance.

Dhindsa and Salleh (2018) deals with the impact of coeducational schools and single-sex boys schools and single-sex girls schools to changes in attitudes towards science, in this study they have reports "that students' attitudes toward science in all three schools were positive and similar" (Dhindsa and Salleh, 2018, p.903). According to this research, the results reported on gender variations in relation to interest in some scientific and technological topics that pose risks to society have had a negative impact on students attitudes toward science. This decline in attitudes toward science can be explained using the self-persuasion approach (the information processing model). Moreover, "gender

inequality in textbooks influences the development of learners' self-esteems, motivation towards the sexes and school subjects", "that gender imbalance in textbooks can be unfavourable to learners, especially to girls in the long term" (İncikabı and Ulusoy, 2019, p. 300). The role of teachers in minimizing the unpleasant experiences and poor performance outcomes is important and can contribute to changing students' attitudes toward science" (Dhindsa and Salleh, 2018, p. 903-906).

2. Theorical Framework

2.1. Conceptualization and goals of coeducation

Coeducation can be defined as "an intentional process of intervention through which the development of boys and girls is promoted on the basis of the reality of two different sexes aimed at a personal development and a common social construction and not in opposition" (Feminario de Alicante, 2002, p.14). Moreover, the authors of this study argue that coeducation is aimed at the complete development of the personality without genders constraints, correcting cultural and ideological sexism and women's social inequality.

Accordingly, Simón (2000) points out that coeducation is aimed at the "personal development and a common social construction, not in opposition" (p.34). Additionally, Bonal (1997) asserts that "to coeducate means to adopt and develop a series of pedagogical strategies that promote specific abilities and skills and ignore others, leaving aside gender stereotypes" (p.40).

2.2. Programme Development for the advancement of coeducation

Resulting from of the awareness of sexist violence and gender inequality as a social problem that must be eradicated, which arose years ago, a number of countries have been developing equality plans and have passed legislative reforms in education, directed at including equal opportunities in the curricula of the education system. Thus, "facilitating the emergence of egalitarian patterns of conduct in the early stages is a crucial aspect to establish a new social model based on equality and respect between men and women" (Pérez-Rodríguez, 2008, p.2).

The studies undertaken to assess the impact of coeducation emphasise the repercussions of the different types of interventions on the academic performance of the students and on the institutional climate which exists in each case. Others put forward more general

approaches to ascertain the need for the eradication of gender-based beliefs in pedagogy and sexist practices in schools, laying the foundations for the empowerment of girls.

Research and analysis of education from a gender perspective is essential to know and asses policies, programmes and strategies that are aimed at achieving equal opportunities in schools, as well as for the creation of new and innovative methodologies that allow the inclusion of coeducation in a more effective manner to achieve real equality.

The goal of this study is to analyse the types of interventions that have been implemented to promote coeducation and the real impact they have had, through a systematic review of the existent international scientific literature.

3. Method

The methodology used to achieve the objective of this study is the Scoping Review. This type of review provides a description of the volume and characteristics of the scientific literature available about a particular topic. According to Grant and Booth (2009), Scoping Reviews are "preliminary assessment of potential size and scope of available research literature" (Grant & Booth, 2009, p.101). In the Scoping Review a Research Question is specified initiating the methodological process. The specific question guiding this Scoping Review was the following:

What is the available scientific evidence concerning gender equality or coeducational interventions in the compulsory stages of education and what is their real impact on underaged people's beliefs and values related to gender?

3.1. Search strategy

Bibliographic searches were conducted using six electronic databases with the following timeframes: SCOPUS (1996-2019), Web of Science (1975-2019), ERIC (1966-2019), SOCIOLOGICAL ABSTRACTS y PSYCINFO (ProQuest) (1971-2019), JSTOR (1915-2019). The search strategy is shown in table 1. Also, the bibliography included in the articles were searched.

Table 1: Search Strategy

SCOPUS	(policy* OR program OR plan* OR program evaluation) AND (equality* OR gender equality* OR coeducation*) AND (social

	impact OR impact* OR evaluation*) AND (school* area OR school*) AND NOT university area
ERIC (PROQUEST), SOCIOLOGICAL ABSTRACTS (PROQUEST), PSYCINFO (PROQUEST)	TI ((policy* OR program OR plan* OR program evaluation) AND (equality* OR gender equality* OR coeducation*) AND (social impact OR impact* OR evaluation*) AND (school* area OR school*) AND NOT university* area) AB ((policy* OR program OR plan* OR program evaluation) AND (equality* OR gender equality* OR coeducation*) AND (social impact OR impact* OR evaluation*) AND (school* area OR school*) AND NOT university* area)
JSTOR**	All fields: ((plan* OR program*) AND (coeducation* OR gender equality*) AND impact* AND school* area NOT university* area
WEB OF SCIENCE	1# TS=(policy* OR program OR plan* OR program evaluation) AND TS=(equality* OR gender equality* OR coeducation*) AND TS=(social impact OR impact* OR evaluation*) AND TS=(school* area OR school*) NOT TS=university area 2# TI=(policy* OR program OR plan* OR program evaluation) AND TI=(equality* OR gender equality* OR coeducation*) AND TI=(social impact OR impact* OR evaluation*) AND TI=(school* area OR school*) NOT TI=university area

** Filter criteria: journals; sociology; education; feminist & women's studies

3.2. **Inclusion and exclusion criteria**

Studies will be eligible for inclusion if they satisfy the following criteria:

1) Scientific articles with no timeframe.

2) Studies conducted with primary data with a qualitative or quantitative design

3) Articles written in English, Portuguese or Spanish

4) Studies about gender equality in education and coeducation understood as a method of educational interventions based on the principles of equality and non-discrimination amongst sexes (Yugueros, 2015, p. 62), promoting individual development unhindered by gender prejudice.

5) Studies about coeducational interventions conducted in the compulsory stages of education.

6) Scientific articles about changes in the belief system related to gender in the infant population.

Studies will not be eligible for inclusion if they:

1) Are non-empirical studies: theoretical, revisions, editorials and letters to the editor.
2) Are studies about equality in a broader sense, but not specifically on gender equality in the compulsory stages of the education system.
3) Are articles related to mixed education without pedagogies oriented to gender equality.

3.3.   Data extraction and data analysis.

The search in the databases was conducted in February of 2019. 504 documents from all the databases used were identified as fullfilling the search criteria. From those 504 initial documents, 12 were excluded as they were not written in the languages required. From the titles and summaries of the remaining documents (n = 492), 458 were excluded due to a lack of relevance for our study, as they had no content pertaining to interventions regarding coeducation or gender equality in the field of compulsory education stages. Finally, a total of 34 full-text manuscripts were revised, of which 18 were included in the review, since the finally reviewed articles turned out not to be related to the inclusion criteria number four of coeducation definition (Yugueros, 2015).

One of the authors of the study conducted the first screening (M.A), after which doubts and controversies were reviewed and resolved by the other two authors (D.G, A.R). The authors (M.A., D.G) piloted the extraction of information protocol on 10% of the total sample. We obtained an 87% concordance. Related articles and bibliography of included articles were searched and consulted, but none were finally included. (n = 0 related articles).
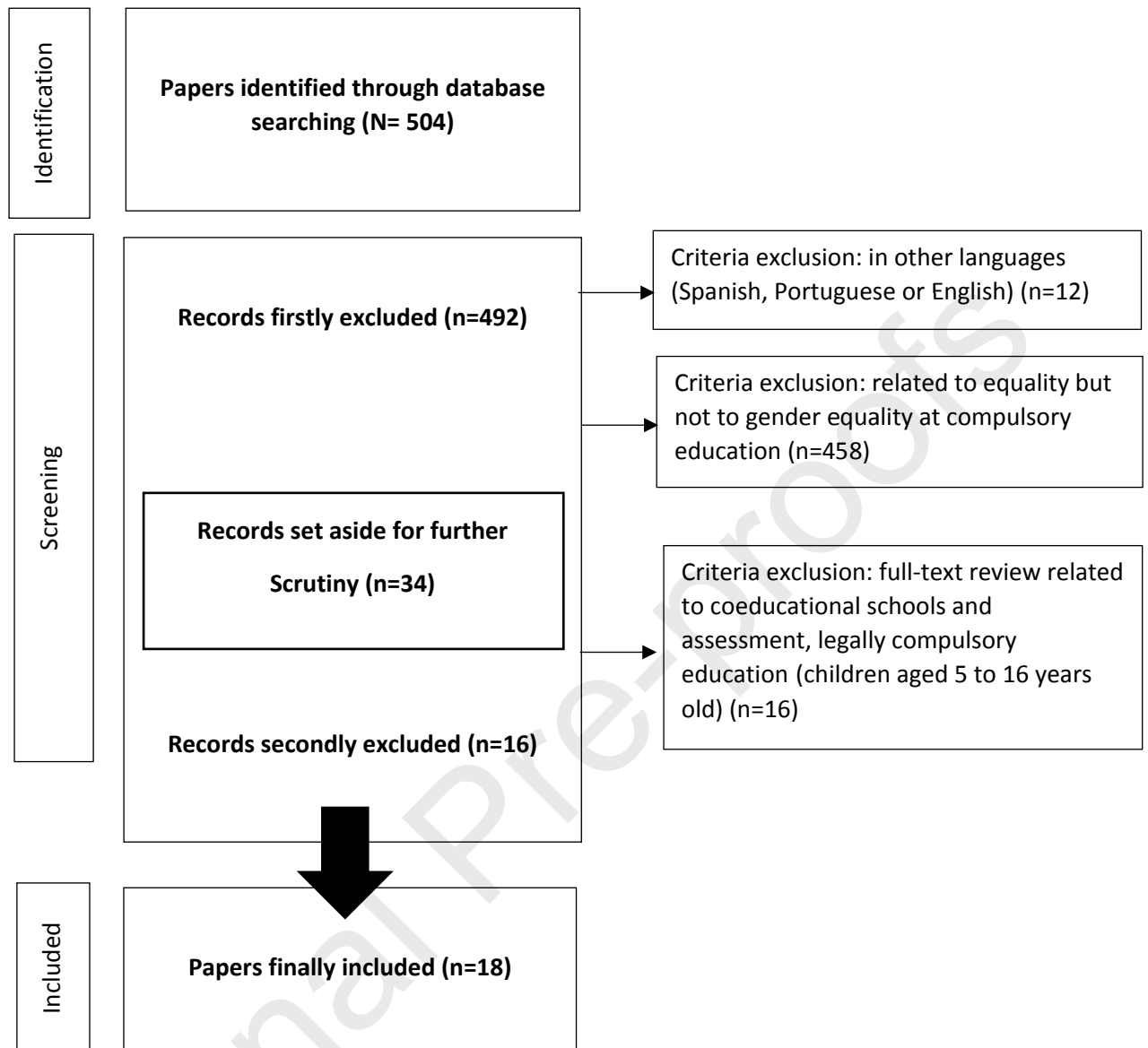
Figure 1: Review and Data extraction flow chart.

An *ad hoc* protocol was designed and applied to the articles included to extract information related to the variables outlined in the protocol:

1. Authors and date of publication.
2. Method and study design.
   2.1. Study design of the document: documents are classified by the design of the research conducted. The categories were: qualitative studies, quantitative studies, mixed studies (studies combining both designs) and observational studies.
3. Population.

3.1. Country in which the intervention took place: this variable describes the city in which the intervention took place in accordance with its country of origin.

3.2. Target Population: a variable which outlines the different categories defining age and sex of the participants.

3.3. Area of study: compulsory education institutions (primary and secondary stages).

4. Aim of the intervention.

5. Results:

5.1. Type of intervention focused on the aim of eliminating stereotypes between sexes, overcoming social disparities and cultural hierarchies between boys and girls (Red2Red Consultores S.L. and Instituto de la Mujer: Observatorio para la Igualdad de Oportunidades, 2007).

5.2. Assessment of the study: information within the documents on whether the study has been assessed, including the assessment of the impact, reflecting the changes in the children's gender beliefs.

Data were extracted by the author (M.A.) and later verified by the other two authors (D.G., A.R). Possible discrepancies were resolved through discussion between the authors of the study. The results are provided in the form of a narrative synthesis as outlined by the data extraction protocol and the identified variables. The narrative synthesis of this study consists in synthesizing the evidence (appraising the evidence, interpreting results) (Munn, Peters, Stern, et al, 2018).

4. Results.

4.1. Methodological Characteristics.

The primary method employed in the reviewed studies is qualitative, with variability regarding the data collection techniques used. The studies analysed have used methodologies for the collection, revision, and analysis of education policy documents and their evolution. Specifically, studies based on data collection (Lameiras et al, 2006; Foulds, 2014; Lappalainen & Lahelma, 2016; Praz, 2006; Goel & Husain, 2018; Langsten & Hassan, 2018; Raza, Kabir & Rashid, 2019), review of curricula documents (Lappalainen & Lahelma, 2016; Gouvias & Alexopoulos, 2018), review of national policy documents (Lahelma, 2014), three-year study data collection (Flintoff, 2008) and data base PISA 2009 review (Julià, 2016) were found.

The semi-structured and structured interview has been utilized in 41% of the studies (Melis & Walker, 2016; Foulds, 2014; Jones, 2011; Lingard, Mills & Weaver-Hightower,

2012; Flintoff, 2008; Vanner, 2018; Gouvias & Alexopoulos, 2018). Participant observation is another frequent methodology employed in the studies, (Jones, 2011; Praz, 2006; Vanner, 2018), including the observation of assemblies and refectories (Lingard, Mills & Weaver-Hightower, 2012).

The scientific articles have assessed the impact education reform bills have had over the last years in countries such as Finland (Lappalainen & Lahelma, 2016; Lahelma, 2014) , Switzerland (Praz, 2006), Turkey (Melis & Walker, 2016), Kenya (Foulds, 2014; Vanner, 2018), South Sudan (Raza, Kabir & Rashid, 2019), United Kingdom (Lingard, Mills & Weaver-Hightower 2012; Flintoff, 2008), Unites States of America (Lingard, Mills & Weaver-Hightower, 2012) , Australia (Martino, Mills & Lingard, 2005), Uganda (Jones, 2011), Spain (Lameiras et al, 2006; De Greñu & Parejo, 2013), Greece (Gouvias and Alexopoulos, 2018), Egypt (Langsten & Hassan, 2018), India (Goel & Husain, 2018) and Austria (Martin & Lars,2018).

The target population of the studies includes students in both primary and secondary levels of education, between 10 and 16 years old. Studies with a more theoretical object of study have been analysed, one of them includes 19 curricula documents of secondary school education (MiniEd and NBE) (Lappalainen & Lahelma, 2016), whereas another includes documents dating back to the 1960s and covering international and Finnish Policy documents (Flintoff, 2008).

4.2. Types of intervention.

The studies which dates back the furthest is the one from Switzerland (Praz, 2006). A comparative study of two educational policies from 1830 and 1930 respectively. The study is a critical assessment of the inclusion of equal opportunities in education, specifically in catholic and protestant schools (Praz, 2006). Other analyses of education policies focus on Finland. These studies aim to analyse Finnish curricula documents to assess equality in education. These studies date as far back as 1970 and up to 2010 (Lappalainen & Lahelma, 2016; Lahelma, 2014).

With the aim to explore the perception of gender equality and civil responsibility among students for the assessment of educational policies, an assessment study was conducted on the impact of these educational policies based on gender in Kenya (Foulds, 2014; Vanner,2018). Similarly, countries like Uganda (Jones, 2011), South Sudan (Raza, Kabir

& Rashid, 2019), India (Goel & Husain, 2018), Egypt (Langsten & Hassan, 2018), Greece (Gouvias & Alexopoulos, 2018) and Turkey (Melis & Walker 2016) undertook studies critiquing the educational policies regarding equality of opportunities to improve girls' access to education (Jones, 2011), as well as research oriented to the detection of barriers and difficulties that girls encounter in the education system. Another analysis of gender equality educational policies, focussed on examining the politics of recuperative masculinity, has been conducted in both Scotland and the United States (Lingard, Mills & Weaver-Hightower, 2012). Ans assessment of the impact of the AustrIndia-4QOL project related to the Education for Sustainable Development (ESD) program initiated by UN, and it is based on a collaboration between students from schools in Austria and India (Martin & Lars, 2018).

An analysis of gender differences concerning literacy in different educational contexts can be seen in Julià (2016), who conducts a qualitative analysis in sixty countries using PISA's (Programme for International Student Assessment) databases, with the aim of furthering the knowledge regarding which elements at a supra-individual level can determine the gender gap in education. Also, Incikabi and Ulusoy (2019) conducts a cross-national study using PISA's and Global Gender Gap Index 2017 in order to show gender bias and stereotypes in Australia, Singaporean and Turkish mathematics textbooks (Incikabi & Ulusoy, 2019).

On the other hand, the most practical typology of intervention found is the "open access" strategy, on which gender equity is established and based (Flintoff, 2008, p.404). It is part of the School Sport Partnership Programme implemented in the compulsory stages of education including a particular focus on gender equity and active participation, (Flintoff, 2008), with the aim of contributing to assess the impact this policy has had.

Another typology of intervention for the promotion of coeducation was conducted through sexual education programmes and education of sexual-emotional diversity (Lameiras et al., 2006; De Greñu & Parejo, 2013). An example of this is the Coeducational Program for Psycho-affective and Sexual Development, 'Agarimos,' which was conducted in Spain in the 2003-2004 school year. The programme consists of two thematic blocks: Self-awareness and self-esteem, enhancing the development of personal identity and the overcoming of limitations of the sexed body, focussed around emotions, socio-affective relations, sexual behaviours and sexual health. The study, conducted in 2013, details a similar initiative, but with the participation of teachers,

families and students (De Greñu & Parejo, 2013). Another study explores the experience in Australia in 2005 which formed single-sex classes within coeducational schools, with the aim of promoting individual capabilities amongst students (Martino, Mills & Lingard, 2005).

4.3. Study Assessment.

The scope of the texts shows that the advances in the implementation of programmes oriented towards gender equality in schools are influenced by the social and cultural context of the region, as well as by family relations, economy and politics (Raza, Kabir & Rashid, 2019). As Melis &Walker (2016) note, education is important for the social development of girls and boys, but different forms of discrimination based on sex persist, negatively affecting girls' access, participation and social and professional development.

Studies as Julià (2016) clearly show that characteristics, such as belonging to a family different to the biparental or the educational level of parents affect the outcome in literacy. In other words, the data from the study highlight how social and school environment influence academic performance. (Julià, 2016, pp.54-55)

The analysis of cases like Switzerland (Praz, 2006) or Finland (Lappalainen & Lahelma, 2016, p.665) identifies the evolution this type of programmes have undergone since historical milestones such as the Convention for the Elimination of All Forms of Discrimination Against Women in 1979.

The path followed varies in rhythm depending on the countries. Whilst Lappalainen & Lahelma, (2016) state that in the year 2000 gender equality in Finland had already been assumed by society (p.65), studies conducted in Uganda (Jones, 2011), South Sudan (Raza, Kabir & Rashid, 2019), India (Goel & Husain, 2018) or Turkey (Melis & Walker, 2016), clearly point to the fact that, even if girls' access to education had been achieved, serious barriers that hindered their ability to attend regularly, whether due to for family responsibilities, marriages of school-aged girls, gender violence situations that generate fear, the location of the school as well as lack of transport or adequate health infrastructure were still prevalent (Jones, 2011, p.392). In 2007, the Kenya government published Kenya Vision 2030, within its curriculum review, values including school safety and non-discrimination will be prioritized (Vanner, 2018), but gender violence situations are still

identified in schools of Kenya. In addition, gender disparity has decreased, but it persists in rural areas (Goel & Husain, 2018).

Another aspect of the dominant patriarchal culture, affecting the broader society, and of the obstacles to advancing gender equality in schools is that of textbooks (Gouvias & Alexopoulos, 2018; Passolunghi, Rueda-Ferreira, & Tomasetto, 2014; İncikabi & Ulusoy, 2019), despite the different education reforms in favour of equality, we can still observe sexist stereotypes, such as the generic male form, images of female bodies performing tasks or chores typified as female or images of men typified as masculine (Foulds, 2014, p.668). The classroom can be a place that supports the formation of gender bias and stereotypes (Incikabi & Ulusoy, 2019; Passolunghi, Rueda-Ferreira, & Tomasetto, 2014). The study of Incikabi and Ulusoy (2019) shows that mathematics textbooks provide explicit (mathematical knowledge) and implicit information (cultural values) for the learners and teachers (Passolunghi, Rueda-Ferreira, & Tomasetto, 2014). According to their findings, Singaporean, Australian and Turkish mathematics textbooks have "unbalanced gender representation" (Incikabi & Ulusoy, 2019, p. 310). "Social roles in mathematics textbooks across the countries have more variation for men than for women, traditional female and male roles are represented in all textbooks" (Incikabi & Ulusoy, 2019, pp. 310-311).

Some studies highlight the wider presence of experiences that focus on recuperative masculine policies in the last years (Lingard, Mills & Weaver-Hightower, 2012, p.417). An example of this is the 'boy discourse', related to the observation that the academic performance of the male student body descends in coeducational contexts (Lahelma, 2014). Thus, experiences emerge such as the creation of single-sex classes within coeducational contexts in order to promote the needs and capacities of boys and girls separately. Studies that analyse these experiences show that "mixed classes achieve better preparation and academic and social results" (Martino, Mills & Lingard, 2005, p.246). Also, the study of Dhindsa and Salleh (2018) shows that attitudes toward science are similar in both coeducational schools and in single-sex schools. Therefore, studies show us that gender differences are influenced by the school and social environment where teachers and parents have influence on the professional expectations of students (Dhindsa & Salleh, 2018; Passolunghi, Rueda-Ferreira, & Tomasetto, 2014).

A review of the programmes focussed on specific education fields, for example sexual education, reveal the overcoming of sexist attitudes, as well as the improvement of the knowledge acquired in the topics addressed, control of emotions and the promotion of attitudes oriented at more gender equality. More than 90% answered affirmatively to the satisfaction questionnaire (Lameiras et al., 2006, p.200). The programme contributed to improving the relations within the classroom in addition to the teachers' motivation (Lameiras et al., 2006). Additionally, the study carried out by A. Flintoff (2008) shows how a Sports School Program encouraged equal participation and inclusion, by having boys and girls cooperate without sexist prejudices.

Lahelma (2014) suggests that gender awareness is needed in all levels of education. This entails the awareness of the social and cultural differences, inequalities, which should be incorporated in the education practices, as should the belief that these practices can change. Therefore, experiences of gender equality in education show how co-educational or gender equality objectives are achieved when targets related to deconstructing traditional gender roles, that the school transmits through the hidden curriculum, are incorporated. As Lappalainen & Lahelma (2016) point out, "equality can be learnt" (p.661). Moreover, Julià (2016) states that "the more gender equality in society, the less difference there will be in the results of girls compared to boys" (p.46).

The studies reveal a lack in "the specific training of teachers in feminist and gender equality theory for the application of coeducational interventions" (Lahelma, 2014, pp.181-182) and the questioning of sexist stereotypes (Martino, Mills & Lingard, 2005; Lameiras et al, 2006). Consequently, gender constructions and the importance of teacher should be inquired into, because the influence of the teaching staff is evident when creating educational changes from the perspective of coeducation (Martino, Mills & Lingard, 2005; Incikabi &Ulusoy, 2019).

5. Discussion

The evaluation of coeducational interventions has primarily focussed on access, motivation, expectations, visualization and the reinforcement of stereotypes and teacher training. The study reveals that the scientific evidence on coeducation is scarce. However, inequality and forms of discrimination based on sex still exist regarding access to education and within the classrooms (De Greñu & Parejo, 2013; Melis & Walker, 2016;

Raza, Kabir & Rashid, 2019; Incikabi & Ulusoy, 2019; Passolunghi, Rueda-Ferreira, & Tomasetto, 2014).

Inequality is a problem that can be prevented through education; thus, gender equality is an individual and educational asset. However, "the classroom can become a place that support the formation of gender bias and stereotypes that stress boys are superior and more competent than girls (Incikabi & Ulusoy, 2019, p. 299)". Moreover, education in gender equality has centred more on work and professional skills rather than social and coeducational (Lappalainen & Lahelma, 2016).

One recommendation for improvement is to further a feminist social and gender equality consciousness for the practice of coeducation (Lahelma, 2014). "Learners' reactions to gender representations in textbooks are not observed directly due to implicit nature of hidden curriculum material" (Incikabi & Ulusoy, 2019, p. 312).

 Thus, a need for a revision of the education system from a feminist standpoint, which means teaching with practical examples of teaching for social justice to argue for a transformative curriculum that challenges existing inequity in social, educational, and economic relations. This feminist standpoint is clear necessary in order to inform legislation directed at the inclusion of coeducation in the education process (Lahelma, 2014; Lappalainen & Lahelma, 2016; Melis & Walker, 2016; Jones ,2011; Melis & Walker, 2016; Lingard, Mills & Weaver-Hightower, 2012). Education policies should shift towards an improvement in school settings with the aim of increasing the expectations, equity and motivation of girls (Lingard, Mills & Weaver-Hightower, 2012; Julià, 2016; Vanner, 2018). In doing so, "the gender gap, as well as the social class gap, can be reduced in the education system" (Julià, 2016, p.55).

School absenteeism of girls implies that the opportunity of access to knowledge is stalled by external socio-cultural barriers in some countries (Jones, 2011; Melis & Walker, 2016; Raza, Kabir & Rashid, 2019; Goel & Husain, 2018; Langsten & Hassan, 2018; Vanner, 2018). "Girls need a communitarian, family and institutional structure that empowers them and offers real equal opportunities" (Jones, 2011, pp.410-411).

In addition, a need to recognise the emergence of traditional masculinity recuperation practices is imperative in order to "address them through effective measures to promote equality in education and society" (Lingard, Mills & Weaver-Hightower, 2012, p.418).

Therefore, a clear coeducational paradigm is required that explains gender equality theoretically enabling a practical and coherent application (Foulds, 2014).

Schools should be places that provide coeducational pedagogies or interventions, but we can still observe discrimination in the classroom (Incikabi & Ulusoy, 2019; Passolunghi, Rueda-Ferreira, & Tomasetto, 2014). Along with De Greñu & Parejo (2013), a participative teaching body is needed, as well as the implication of other educational agents (non-formal education) such as families, to guarantee the efficacy of education actions.

Coeducational interventions should be more prolonged in time and possess a gradual character. In other words, they should start at the first years in school in order to alter the socialization process, creating equal relations and identities (Lameiras et al., 2006; Gouvias & Alexopoulos, 2018). The implementation of actions in the education field is required to improve "sexual and equality education, as well as concrete and specific legislation that promotes integral, solid and real sexual education", provided with the appropriate resources and means (Lameiras et al., 2006, p.201).

According to the studies, the revision of activities based on gender stereotypes is complicated given the complexity that a qualitative study on social beliefs entails (Silva-Peña, 2010). The complexity arises from the limited timeframe needed for the analysis of a structural pattern, in other words, "a set of organized qualities which characterise a social construction as is gender" (Navarrete, 2004, p.283).

The literature identified during the Scoping Review suggests that the educational reforms are determined by the influence of the dominant culture of each region, since we have articles from different cultural contexts (Melis & Walker, 2016), revealing a difference in how the inclusion of the concept of gender is included and how it has been understood and evolved in each sociocultural system. Legislation in the different education systems has evolved to include equity but has mostly failed to integrate a feminist and intersectional approach. As Praz (2006) notes, there are no coeducational pedagogical practices or interventions in them. Education equality has continued to evolve to this day, a time in which mixed schools are a significant majority in the international context.

Coeducational initiatives have been implemented with 10-year-old boys and girls (Lameiras et al, 2006; Flintoff, 2008; Martino, Mills & Lingard, 2005; De Greñu &

Parejo, 2013), initiatives in which gender identity is already adapted to the predominant social norms (Bandura & Walters, 1990). Coeducation questions traditional gender identities, but to do so we must intervene at the initial stages of education.

The studies reveal the importance of teachers in the development of students' identities and the lack of teacher training for the implementation of coeducational interventions (Martino, Mills & Lingard, 2005). Teachers' treatments of traditional roles using gender messages while teaching and traditional roles representation in compulsory textbooks (hidden curriculum) have influence on children gender role development (Incikabi & Ulusoy, 2019). Consequently, "these factors with a long history do not allow a change in gender bias" (Incikabi & Ulusoy, 2019, p. 312). In conclusion, the practical and political implications of this study suggest the need for teacher training in gender equity and the need for a review of legislation for the inclusion of effective coeducational practices (Lameiras, M et al, 2006).

5.1. Strengths and limitations of the study

This study constitutes the first revision of the inclusion and impact of gender equality in educational policies and programmes on an international scale. Previous studies of interventions and policies analysis have focussed on the increase of girls' access to the education system, whereas this study explores the global impact of these actions and the need to improve coeducational interventions. Furthermore, the study highlights the importance school and teachers in particular play as a system which shapes the identities and attitudes of boys and girls. Many children are raised in educational and family conditions less than ideal (conditions such as poverty, bullying or gender-based violence). Situations such as these can inhibit the intellectual, social and emotional development of children, which interferes with them to reach their full potential as adults (Zolkoski, S. M., & Bullock, L. M., 2012, p. 2295). The implication of the article is due in the importance of analysing the different educational policies and practical interventions within the classroom to improve them. In other words, knowing the practices of improving equality in classrooms, we can identify limitations and improvements for future action plans.

Schools represent the ideal context to overcome sexist stereotypes and prejudices (Suberviola-Ovejas, 2012, p.65). Therefore, this study can contribute to furthering the knowledge about coeducation as a intervention for the promotion of gender equality.

The strict procedures included in the data extraction have assured the validity of the study. We must mention that certain relevant information may not have been identified in the search, for example information in other databases not consulted or non-published information or grey information.

However, the databases consulted were adequate and we identified all studies published in scientific journals through our search in six multidisciplinary social sciences databases. We did not take into account studies conducted in other languages other than Spanish, English and Portuguese. Finally, the heterogeneity of the studies regarding the methodological design and objectives implied an added difficulty to the data summary.

4.2. Conclusions

In conclusion, evidence reveals the relevance of acting on the education system at the early stages for the promotion of gender equality. Schools have the capacity to carry out actions to transform the value-system they transmit, identify and analyse gender inequality and modify the academic contents to avoid women invisibility in history and sexist stereotypes. Current legislation has included these indications, but an actual implementation is evidently lacking. There are barriers such as not possessing easily applicable methods in the classroom and the lack of adequate teacher training, given the complexity of the matter at hand. All these issues lead the path to future research on the topics raised.

Appendix A. Supplementary data

Table 1. Summary of Included Studies.

Author(s) and date of publication	Study Design and Method:	Target Population (age/school grade and sex)	Country of the study	Objective(s)	Typology of the intervention/study	Primary results of the study	Study and impact assessment on the social beliefs concerning gender	Conclusions and recommendations
Martino, Mills & Lingard 2005	Qualitative study: *Descriptive analysis of life histories and experiences*	1 school. Schools years 6 and 7. Age: 10-12 years old	Australia	Assessment of the impact of the coeducational single-sex school	Coeducational intervention in single sex classes to promote girls' and boys' capabilities separately	Separation of classes according to sex, provides boys with an emotional literacy and the creation of bonds. However, it does not imply a pedagogy that questions and reflects on the teaching of new masculinities	A critical vision is not taught regarding gender roles, instead traditional masculinities are reinforced. The trust created in the classes leads to a paternalistic form of education, relation. Mixed education is more favourable for students and a need for teacher training in gender equality is apparent	Need to inquire in the construction of gender identities and the increase of teacher training in gender equality for the implementation of effective coeducational interventions Teachers have a strategic role in the gender reform (and equality)
Lameiras, M et al, 2006	Qualitative study: session diaries, document analysis and global assessment and satisfaction questionnaire	92 students of 1 ESO (11 years old) (42 boys and 50 girls) Average age: 11.98	Spain	Qualitative assessment of the implementation of a coeducational programme for the psycho-affective and sexual development and to determine the degree of satisfaction of the students with the programme, identifying practical implications	Sexual education coeducational programme	The programme contributed to the improvement of the relations within the classroom and the social and communication skills	The students improved their knowledge regarding the topics of the programme, control of emotions and the attitudes towards more gender equality. More than 90% of the students answered positively to the satisfaction questionnaire	Implement actions in the education sphere to improve sexual education in the young population and explicit legislation to promote a solid, integral and real education with the necessary resources
Praz 2006	Qualitative study: *Data collection. Observational participation*	Schools of Fribourg and Vand villages: 2053 children (1333 boys and 1020 girls) Age: 15 years old	Switzerland	Evaluate the differences and influence in the implementation of gender equality in education within catholic and protestant ideologies	Critique of the incorporation of equal opportunities in education in catholic and protestant schools since 1860 until 1930	The evolution of women's access to education is the same in both religions. The ideological beliefs have influenced the educational policies and its practices	Gender equality is focused in the access to education, but coeducational pedagogical practices do not appear. The assessment is unsatisfactory regarding the inclusion of gender equality as gendered stereotypes are repeated and reproduced	Education is a necessary condition for democracy and progress

Flintoff 2008	Qualitative study: *Three-year study data collection, Interviews*	6 Secondary schools. Age: 11 to 16 years old	United Kingdom	Assess the impact of sports school based on participation and gender equality	School Sports Programme in compulsory stages of education based on gender equality (coeducation) and active participation	An active and equal participation is promoted in the sports both individual and collective	Total inclusion without discrimination based on sex in all activities. Through the 'open access' strategy equal opportunities are established for all children. Through the egalitarian participation dominant gender discourses can be changed	Politics must be oriented towards the transformation of the dominant gender culture to promote equal opportunities in education
Jones 2011	Qualitative study: *Semi-structured interviews Questionnaires. Focus group discussion. Observational participation*	15 girl students of secondary school	Uganda	To learn about gender-equitable educational opportunities	Critique of education policies regarding equal opportunities for the improvement of girls' access to education (coeducation introduction)	Social barriers persist which impede girls' education	During menstruation periods girls do not attend school due to the lack of hygienic and sanitary products. The attitude of the teaching staff is impregnated of gender prejudices the underrate female students because of their sex regarding their professional education. The existence of sexual abuse and gender violence hinders girls' access to school. School absenteeism due to house chores is high amongst girls	Girls need a communitarian, family and institutional structure through programmes and an education policy that empowers women and offers real equality of opportunities. The need of an education reform which deals with the day to day problems female students have in the social and school spheres
Lingard, Mills & Weaver-Hightower 2012	Qualitative study: *Data collection. Observation of assemblies and refectories. Interviews. Questionnaires. Case study*	2 schools. All belonging to 8th grade Age: 13 years old	Scotland and the United States	Examine the politics of recuperative masculinity in education.	Analysis of education policies concerning gender equality	The boy category is influenced by the social and educative atmosphere. The effects of the hegemonic masculinity recuperation education politics are observed	Effects on the school of the dominant patriarchal culture are manifest. The assessment reveals the need to recognise the practices of recuperative masculinity in order to intervene and promote equality	Education political strategies need to be more inclusive of gender equality in a more comprehensible way and applicable to the educational reality of children
De Greñu & Parejo 2013	Qualitative study: Historical-theoretical. *Organization of debate groups. Student investigation with indicators elaborated ad hoc. Participation degree*	Secondary Education	Spain	Study the omitted contents in the traditional teaching related to equality, promote the critical analysis of information in the media and give importance to the contents related to equality	Psycho-pedagogical intervention: programme directed to the promotion of equality and respect of affective-sexual diversity in secondary education	Need to count on the teaching staff to guarantee the success of training actions and the participation of other education agents (non-formal education) such as family, or other social agents	Limitation due to the impossibility of showing the assessment on the application of this new programme model in education centres. No commitment or implication of the education centres. Discrimination persists in the classroom	Need that schools, families and society join efforts for a common goal, related to the implementation of education programmes that promote gender equality. Schools can provide the training necessary and the pedagogical experience

Foulds 2014	*Qualitative study: Data collection of school books, data extrapolated, Structured close-ended interviews, Case study*	160 students in public centres. Standard Five and Eight students	Kenya	To get to know the perception of gender equality and the civic responsibility of students in order to assess the education policies	Assessment of the impact of the education policies based on gender	The images used in textbooks show stereotypes and prejudices based on gender roles	The exclusion of women is evident in the images of textbooks and the students' perceptions	A new coeducational paradigm is needed to explain gender equality from a theoretical standpoint in order to implement it in practical education policies
Lahelma 2014	Qualitative study: *Case study. Review of national policy documents. Multi-sited ethnographical and auto-ethnography methodology*	International and Finnish policy documents since 1960	Finland	Analise the evolution of gender equality in education	Analysis and assessment of the education system including gender equality	Equality plans and programmes of gender equality during the 1990s. In 2010 actions and objectives regarding gender equality were included in the design of education policies	Scarce gender conscience to fight the emergence of the 'boy discourse' and 'gender equality discourse' confrontation. Scarce training in coeducation for the implementation of coeducational pedagogies. Considers that education should promote women's social position in work	A social feminist conscience and gender equality awareness is required for the practice of coeducation. Need to improve education policies based on feminist and women studies to improve gender equality
Melis & Walker 2016	Qualitative study: *Semi-structured in-depth interview*	20 girl students in "8-year primary education" Ages between 11 and 14 years old. 5 teachers of the same grade	Turkey	To understand girl's experiences of schooling and teaching in a patriarchal system. To empower women and change policy	Research oriented to the detection of gender disparities and the barriers in the education system	Identification of the limitations girls endure regarding their access to school. Gender discrimination and a discriminatory social structure was observed in the curriculum	Persistence of different forms of gender discrimination regarding access to education. The education process is influenced by the social and cultural context, family relations, economy and politics	Need of a feminist framework to design the modifications of education policies in order to promote equality and girls' access to school
Lappalainen & Lahelma 2016	Qualitative study: *Data collection. Curricula documents review*	19 curricula documents of Secondary education (MinEd and NBE)	Finland	Analise curricular documents since the 1970s until 2010 to assess the presence of coeducation or gender equality	Curricula and education policies assessment based on gender equality	In the education legislative reforms gender equality is considered and promoted as an asset	Practical coeducational pedagogical practices do not appear in the education and equality reforms. Belief that gender equality has been attained and assumed by society since the 2000s within legislative and education texts	Education in gender equality is vague and has focused more on professional and labour skills rather than social and coeducational
Julià 2016	Qualitative study *Multi-level analysis. Review of data base PISA (Programme for International*	412.367 students (men 48.9% and women 51.1%)	60 countries	Further the knowledge in relation to which are the elements at a supra-individual level which	Analysis of gender disparities in literacy in different school environments	Women score higher in literacy than men. Belonging to a family different to the traditional biparental model has a negative effect in literacy outcomes. The	When a country is more egalitarian regarding gender, the gender gap in literacy increases favouring women. The school atmosphere and social capital of the school play an important role in explaining the	Education reforms are required to improve the school environment, increase the expectations and motivate students to invest in their studies

	Student Assessment) 2009	Age:15 years old		determine the education gender gap		educative level of the parents influences student results. Native students have better results than immigrant students	gender gap and the lower performance of boys in literacy	
Martin & Lars 2018	Mixed study: *pre- and post-test*	10 Indian students (7 girls and 3 boys) 22 Austrian students Age: 16	Austria and India	To explore the effects of a weeklong face-to-face collaboration in the final part of the AustrIndia-4QOL project	Assessment of the impact of the AustrIndia-4QOL project	78% of all students rated their country differently in terms of gender inequality	The collaboration between students from Austria and India leads to a change in the valuation of gender equality	The project had an unintended multiplier effect that led to deep reflections that rarely can be reached in a normal learning setting
Goel & Husain 2018	Qualitative studies: *Survival analysis, data collection from the Employment and Unemployment survey by the National Sample Survey (NSS) Office (68th Round, 2011–12))*	456,976 from 101,718 households (143,064 males and 137,676 females in rural areas and 90,728 males and 85,508 females in urban areas) Age: 7 to 60 years and above	India	To examine gender variations in retention at different levels of school education	A cohort-wise analysis of education attainments at the all-India level	The school completion rates have improved. The persistence of the gender gap in rural areas; in urban areas, girls are at par with boys. The gender gap is not higher among backward groups. The gender gap does not widen at higher grades	It is necessary to increase returns to education through policies which increase awareness about educating girls and benefits of late marriage, increasing accessibility of schools, and making them more girl-friendly	Need to look beyond schooling levels in order to understand how endowments and capabilities of society, along with female empowerment levels, change over time
Langsten & Hassan 2018	Qualitative study: *Data collection*	Data from the 1988 through 2014 Egypt Demographic and Health Surveys	Egypt	To assess progress in the Net Attendance Ratio and the Primary School Completion Rate.	Analysis of education policy concerning gender and socioeconomic equality.	Economic equity in educational attainment increased. Only children from wealthy families have achieved Universal Primary Education. Gender parity has been achieved	The attainment of poor urban boys has been stagnant	Research is needed to determine why some children never enrol in school and why there has been little progress in reducing drop out
Vanner 2018	Qualitative study: *case study, participant observation, individual teacher*	Two Standards 1–8 primary schools	Kenya	To explore the relationship between gender violence in schools and teaching	Analysis of education policy reform concerning safety and gender equity	The three commonly recognized elements of GVS – corporal punishment, bullying or peer victimization, and sexual violence and	The concrete acts of gender violence experienced by students at the school level are enabled by broader structural violence related to the social context	Need to focus more strongly on school safety, equity and need to support for student learning and move toward a holistic understanding of

	interviews, individual art-based student interviews and member-check interviews with teachers and students	(students and teacher staff)		and learning processes		harassment – were all prominently identified in the two case study schools		educational quality that focuses on individual development and minimizes student comparisons
Raza, Kabir & Rashid 2019	Qualitative study: *data collection from Early Grade Reading Assessment (EGRA)and Early Grade Mathematics Assessment (EGMA)*	2415 students across 112 in BRAC Non-Formal Schools[3]. Age: 6-11 years	South Sudan	To explore the level of basic education and models its determinants	Analysis of education policy concerning gender and socioeconomic equality	The male students score higher than female students	Persistence of different forms of gender discrimination regarding access to education	Gender and socioeconomic equity in education should be prioritized
Incikabi & Ulusoy, 2019	Qualitative study: Cross-national study and *document analysis.*	Mathematics textbooks series. Courses: 5 to 8 primary schools.	Australia Singapore and Turkey	To provide descriptive statistics about the number of male/female and gender-neutral characters in the textbook	Analysis of mathematics textbooks in relation to gender bias	There is an unbalanced gender representation in all sample mathematics textbooks. Total frequencies in textbook contents including no gender bias are under 9% for all textbooks. The results indicate that textbooks from all countries have more male contents	Gender imbalance in textbooks can be unfavourable for students, especially for long-term girls. This gender inequality in textbooks can also influence the professional choice of students	The development of long-term and versatile studies is necessary to eliminate gender stereotypes from textbooks

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Highlights

- Scoping review of 18 empirical studies concerning coeducational interventions in education systems.

- Identification of actions to improve the promotion of gender equality in the education systems in all academic stages, as well as legislative reform to support coeducation in education.

- The assessment of coeducational initiatives is related to access to the education system. Coeducational or gender equality promotion interventions focus superficially on the access and participation of both sexes.

- Educational legislation and teachers have an important role in education for gender equality to prevent inequalities such as gender violence and gender discrimination.