Gender roles in study choices

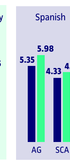
In our society erroneous stereotypes and beliefs exist which tend to consider women more competent in subjects associated with languages and men in the fields of science and technology. These gender stereotypes influence men and women's academic motivations and explain the vocational segregation observed in study and occupational choices.

1 Gender gap in self-concepts of ability

Difference between self-concepts of ability and actual grades

Scientific and technological subjects

Non-scientific and technological subjects



Boys Girls AG Actual grades from 1 to 10 SCA Self-concept of ability from 1 to 7 (Data source: Sáinz, 2016)

Girls consider themselves less competent in subjects traditionally related to scientific and technological fields, despite obtaining comparable or even higher grades than boys.

2 Academic motivation of girls and boys

Transition to secondary education stages

Evolution of interest in Math and Catalan

Transition from primary education to compulsory secondary education (CSO)

Transition from compulsory secondary education to high school (Bachillerato)

Boys Girls Intrinsic motivation scale from 1 to 7 (Data source: Sáinz & Prat, 2016)

The evolution of interest in math and Catalan is influenced by gender roles. Girls' interest in math decreases both in the transitions from primary to compulsory secondary education and from compulsory secondary education to high school. Instead, boys' interest in math increases when they move from compulsory secondary education to high school.

3 In which subjects do boys and girls excel? The opinion of secondary students

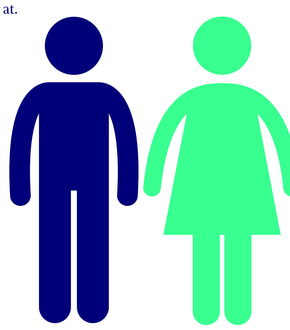
In five workshops at a secondary school in Barcelona, we asked 2nd and 3rd year compulsory secondary school students which three subjects they thought girls were better at, and which three subjects boys were better at.

The three subjects most mentioned for boys:

Physical Education **30.4%**

Technology **21.7%**

Math **17.4%**



The three subjects most mentioned for girls:

Visual and Art Education **26.1%**

Social Sciences **17.4%**

Natural Science **14.5%**

The subjects the pupils mentioned as the ones they thought boys and girls were better at are different.

4 Reasons why secondary students considered that girls and boys are better at different subjects

(Of the three most mentioned subjects)

Intellectual skills and personality characteristics

Evaluation of the subject and social referents

Technology

- Boys have more skills for math and logical thinking.
- Boys are better at mastering this subject because it is more about inventing.
- Boys like do-it-yourself and electricity, they are always playing.
- It is a more practical, entertaining, simple and relaxed subject.

Physical education

- Boys like sports more than girls and practice it more often.
- Boys are more interested in their bodies and are more active.
- Boys are more competitive.
- In this subject there is no need to think.
- Physical Education teachers are mostly men.

Math

- Boys think faster and are better at numbers.
- They are better at practicing.
- Because of Einstein.

Social Sciences

- Because girls are very good at memorizing.
- Girls understand history and are more interested in it.
- Girls pay more attention in class and obtain higher grades than boys.
- Girls are more cultured.
- In this subject you need a good memory for history.

Visual and Art Education

- Girls are more creative and have more imagination than boys in Visual and Art Education.
- Girls are more perfectionist and like everything to be neat and tidy.
- Girls are better at art and drawing.
- This subject is easier.

Natural Science

- Girls have a better memory and retain the formulas better.
- Girls study more and are more applied than boys.
- Girls are more organized.
- Girls are skilled at Physics and Chemistry.
- In this subject you have to study more.
- Because of Marie Curie.

5 Educational intervention proposals

- Prevent male and female students from having a negative and false perception of their own abilities in different subjects. Specifically, it is important to counteract the trend among girls to underestimate their math skills.
- Encourage collaborative work in mixed-gender groups at primary and secondary school, and highlight the value of diversity in opposition to sexist clichés.
- Disseminate broad information on the diverse social applications of technologies and exact sciences, as well as social sciences, arts and humanities and life sciences, beyond the stereotyped image of these professions.
- Improve academic advice and occupational guidance from a gender perspective, in order to prevent sexist bias in decision making and promote resources for boys' and girls' empowerment in disciplines which run counter to traditional gender roles.
- Design interventions in secondary education (when major changes and processes of social influence occur) in order to deal with the value that students, families and teachers place on the different disciplines in relation to gender roles.
- Tackle academic sexism and stereotyped ideas about occupations from an earlier age involving children, families and teachers, in order to prevent stereotypes becoming so influential in boys' and girls' motivation towards subjects traditionally associated with men and women.

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