

Gender stereotypes and female schoolgirls' interest in exact and technological sciences

ABSTRACT

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This research aimed to investigate schoolgirls' interest in exact sciences and, consequently, their entry into scientific careers. In partnership with two public schools in the municipality of Cruz das Almas, located in the Recôncavo Baiano, we investigated several aspects guiding schoolgirls' interest in exact sciences using the ROSE (The Relevance of Science Education) questionnaire. Adopting the gender stereotypes perspective, we diagnosed those students' interest in exact and technological sciences and their intention to follow a scientific career. The study results indicated that those girls' interest in exact and technological sciences, regarding gender differences, were more noticeable, among the participants, during high school. Our results also revealed that when compared to the male students' interest, female students' interest decreased throughout the school years.

KEYWORDS: Stereotypes. Gender. Exact Sciences. Women.

INTRODUCTION

The idea to investigate the influence of gender stereotypes in schoolgirls' interest in exact and technological sciences originated from the following question: Why are there few women in scientific careers linked to the exact sciences area? In this study, the term gender refers to the man/woman traditional identification; however, we recognize the importance of a broad discussion about non-binary gender expressions. Studies carried out by Saitovitch *et al.* (2015) reported that despite the exponential increase in women taking over spaces that were previously considered men's spaces in society, the number of female researchers is still much lower than that of male scholars – mainly in the physics area – since the little representativeness of women became evident throughout advances in the career.

On the other hand, Corrêa (2010) sought to answer an intriguing question in her research: Why in education – particularly in the leadership of political and management processes – men still occupy higher positions and still outnumber women considering the predominance of female professionals in this area? (CORRÊA, 2010). That author observed that women's participation in society is historically and socially restricted and with limited access to leadership positions.

The inequality of opportunities between genders still permeates society in its different spheres: political, economic, and social. According to Bourdieu (2020), the social order tends to be dominated by men: a particular form of symbolic violence that underlies the social division of labor and the distribution of activities between the two sexes over the space structure, that is, the preexistence of spaces reserved for men and for women. The androcentric vision (CORRÊA, 2010) in which differences between men and women as ascribed to the biological sex, is legitimated by practices, that is, by the fact that their development resulted from the incorporation of certain prejudice against female individuals, which is instituted in the order of things.

The symbolic violence concept (BOURDIEU, 2020) sees the imposition of meanings as legitimate, aiming to dissimulate the power forces that support power. Symbolic power cannot be exercised without the subordinates' cooperation, and those are only subordinated because they build up power. Society is seen as a space where power forces generated by meanings and symbolism meet (and conflict). As pointed out by Arêas, Santana and Barbosa (2020), the symbolic world is the main medium through which domination, mainly male domination, is exercised, and it is the legitimator of the violence established in the physical sphere. According to *The Social Uses of Science* by Bourdieu (2004), in the scientific field, the more people occupy privileged positions in a social structure, the more they tend to preserve the structure and, consequently, their position.

Regarding the domestic sphere, investigations carried out by Jablonski (2010) on marriage between men and women revealed that women are in charge of the domestic chores and upbringing, and most of those women tend to qualify their husbands' participation in these activities as some kind of welcomed and cherished help. Even being aware of the inequality in the domestic work division, women do not regard this fact as a problem or a source of conflicts in their marriage, which shows the strength of the influence of traditional parental models when it comes to gender roles and the establishment of symbolic violence.

As for the political sphere, according to Scott (2012), gender provides a way of decoding meaning and understanding complex connections between the several forms of human interaction. When historians seek to understand the ways in which the gender concept is legitimated and build up social relations, they understand the gender and society reciprocal nature, and the contextually specific ways through which politics builds up gender, and gender builds up politics. As regards the academic sphere, Gomes, Carvalho and Rocha (2021) carried out a recent study on female representativeness in 40 years of the existence of the *Revista Brasileira de Ensino de Física* (Brazilian Journal of Physics Teaching). Their research reported that between 1979 and 1995, the numbers between men and women were practically the same, after that period, however, male authorship increased significantly, presenting six times more male researchers. That is, gender stereotypes also affect scientific production, and the scientific activity has a dominant gender, which (probably) contributes to the distancing of female scientists.

According to Bourdieu's (2004) logic, this also occurs in women's professional choices since women's distancing from the exact and technological sciences is related to several sociocultural factors. Over the years, the number of women in university courses in the field of exact sciences (also called hard science courses) has remained much lower than that of male students. As pointed out by Saitovitch *et al.* (2015), the development of skills and taste through the sexual division of toys, for example, might be an essential element for the choice of professional action in a person's adult life. Toys are linked to the binary logic of public and private spaces, girls are prepared to fulfill the social functions of mother and wife, take care of babies (dolls), do housework (stove, dishwasher, electrical appliance toy kits), and of themselves by using beauty products (make up kits, reading/listening to princesses' stories). According to D'Amorim (1997), the reinforcement of the gender stereotype, from physical characteristics, is partly due to the media work that values youth and beauty as desirable male characteristics, but that are essential for women to the same extent that intelligence, persistence, and skills are indispensable to men, and only desirable in women, who should preferably be polite, cult, and develop artistic abilities.

As an example of the sexual division of labor, in the current pandemic context, the Applied Economic Research Institute – IPEA, in partnership with the UN Women (United Nations) (ONU MULHERES BRASIL, 2020), carried out a study on the situation of vulnerability and risk of infection by the Covid-19 faced by domestic workers all over the country. Their results revealed that 70% of these professionals did not have a formal employment contract (ONU MULHERES BRASIL, 2020); and the precariousness of employment bonds and the type of work done by these professionals, in direct contact with people and their belongings/objects, represented the main factor exposing them to the virus.

This paper presents the results of an investigation carried out in two public schools in the municipality of Cruz das Almas in the Recôncavo baiano, as part of the Project called "Girls and young women from the Recôncavo Baiano in Science and Technology". Those students were divided into different age groups, depending on the school grade they attended at the time, and their interest in topics involving exact and technological sciences, that is, careers different from those reinforced by the gender stereotypes, was analyzed. For comparison purposes, male students were also included in the investigation.

THE PROJECT GIRLS AND YOUNG WOMEN FROM THE RECÔNCAVO BAIANO IN SCIENCE AND TECHNOLOGY

The Project Girls and Young Women from the Recôncavo Baiano in Science and Technology was created as an outreach project in the mid-2016, at the Center of Exact and Technological Sciences of the Federal University of Recôncavo da Bahia in the municipality of Cruz das Almas, state of Bahia. The project main aim was to investigate and raise the interest of schoolgirls studying in public schools in the municipality of Cruz das Almas in careers in the exact sciences area and attract them to scientific careers, incentivizing the students in the Center of Exact and Technological Sciences to continue their studies, becoming agents of scientific and technological development in the Recôncavo Baiano region.

The project activities are based on the search for equal opportunities of access to the exact and technological sciences. The objectives were designed aiming at disseminating sciences, through lectures in two public schools of the municipality of Cruz das Almas. In addition to stimulating the young students' interest in exact and technological sciences, the project aimed to raise the awareness of the school and university communities of women's role in society, to contribute with the elimination of gender stereotypes.

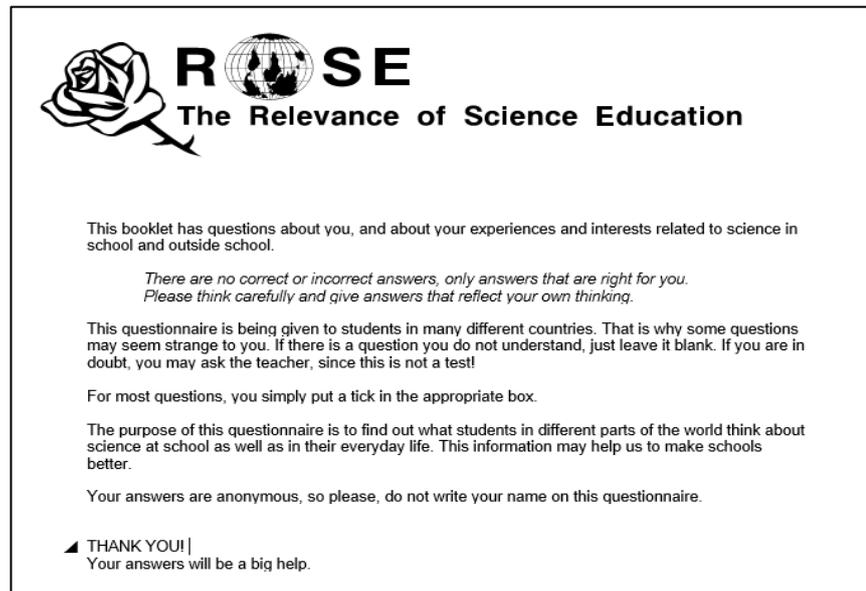
METHODOLOGY

To achieve the main aim of this research, namely, to investigate schoolgirls' interest in exact and technological sciences, we adopted a comparative approach, for considering it the most suitable to the study, due to its specificity. This method is used in comparisons aiming to verify similarities and explain differences. According to Gil (2008), Piaget's work in the field of the children's intellectual development, provides relevant examples of the use of the comparative method.

With this purpose, the project activities started with the application of some questions of the ROSE (The Relevance of Science Education) questionnaire. This questionnaire is applied to 15-year-old students in several countries aiming to confirm hypothesis, understand patterns, and establish trends in sciences teaching. The questionnaire use aimed at analyzing public school students' interest, mainly female students' interest, in subjects related to professional careers in the areas of exact and technological sciences.

Due to the large number of questions, this research selected some of them so as not to demotivate students and require more time than that destined by school managers to apply the questionnaire in the classroom. In addition, the questions were translated into Portuguese, to make it easier for the students to do the task. Figure 1, below presents the questionnaire opening text.

Figure 1 – Image of the ROSE questionnaire presentation page.



Source: ROSE (2023).

The ROSE questionnaire opening text translated into Portuguese is below:

Este livreto tem perguntas sobre você e sobre suas experiências e interesses relacionados às ciências na escola e fora dela. Não há respostas corretas ou incorretas, apenas respostas certas para você. Por favor, pense com cuidado e dê respostas que reflitam seu próprio pensamento. Este questionário está sendo entregue a estudantes em muitos países diferentes. É por isso que algumas perguntas podem parecer estranhas para você. Se houver uma pergunta que você não entende, apenas deixe em branco. Se tiver dúvidas, pergunte ao professor, pois não se trata de um teste! Para a maioria das perguntas, basta marcar a caixa apropriada. O objetivo deste questionário é descobrir o que os alunos em diferentes partes do mundo pensam sobre ciências na escola, bem como em sua vida cotidiana. Essas informações podem nos ajudar a tornar as escolas melhores. Suas respostas são anônimas, então por favor, não escreva seu nome neste questionário. Muito obrigada! As suas respostas nos ajudarão muito (ROSE, 2023).

The ROSE questionnaire selected questions were applied on 26th and 28th September 2016 in two public schools in the municipality of Cruz das Almas – these schools *Centro Educacional Cruzalmente* and *Colégio Estadual Landolfo Alves de Almeida* (hereinafter referred to as School 1 and School 2, respectively) took part in the project. School 1 provides elementary education and youth and adult education (EJA - *Educação de Jovens e Adultos*), while School 2 provides high school education and youth and adult education (EJA). The school grades investigated have more than one class in both schools. However, due to the school availability and the duration of this outreach project that was one semester only, the questionnaire was only applied in one class of the 8th grade of elementary school, one class of the 2nd grade of high school, and one class of the 3rd grade of high school. The 9th grade of elementary school and 1st grade of high school were not investigated due to the reasons presented above. In addition, we decided to work with the 8th grade because it was the most distant from the 2nd and 3rd grades, thus creating the possibility of covering a larger time interval between the grades investigated, that is, we could compare the perception of students closer to the

initial years of elementary school to those in the final years of high school. The data of each of the participant schools is presented below (Chart 1)

Chart 1 – Number, school grade, and age of the students participating in the research.

Schools	School grade	Students' age	Number of female students	Number of male students	Total number of students
School 1	8th grade	Between 14 and 17 years old	15	18	33
School 2	2nd grade	Between 15 and 20 years old	19	7	26
School 2	3rd grade	Between 17 and 20 years old	18	8	26

Source: The author (2016).

Below, we present part of the questions applied to the students in the participant schools (Chart 2). For this article, we selected only four questions from the ROSE questionnaire, that is, only those that were linked to exact sciences and higher education as a way of investigating the target group, which includes male and female students, for comparison purposes. Question 1 was chosen to investigate specifically those students' interest in exact sciences. Question 2 aimed to verify their knowledge (or lack of it) about scientists' lives, that is, verify the degree of visibility of women scientist from the schoolboys' and schoolgirls' standpoint. Question 3 addressed their interest in completing higher education in general, taking into consideration male and female sex. Finally, to investigate the schoolgirls' interest in topics related to health sciences, question 4 verified their level of interest in careers that involved the study of illnesses and that were linked to taking care. According to Bourdieu (2020), women tend to believe that they are better in humanities and health areas, for instance, in detriment of exact sciences, which determines their action in female and male spaces in the job market and reinforces the current sex division, indicating professional choice as a gender determination in most cases.

All questions helped to investigate professional career related interests of male and female students from the schools involved in the project. The collection of those students' answers occurred through meetings held in both schools on 26th and 28th September 2016 during class hours, in the morning and afternoon. On both occasions, the research author accompanied the undergraduate students that received scholarship and those that were voluntary in the project, who were in the Bachelor of Exact and Technological Sciences Course of the Federal University of *Recôncavo da Bahia*.

Chart 2 – Part of the ROSE questionnaire questions applied to students in the participant schools.

Questions	Answers
Question 1	Are you interested in learning about rockets and satellites?
Question 2	Are you unaware of a scientist's routine?
Question 3	When considering your future: Are you sure you are going into higher education?
Question 4	Are you interested in learning how to treat cancer?

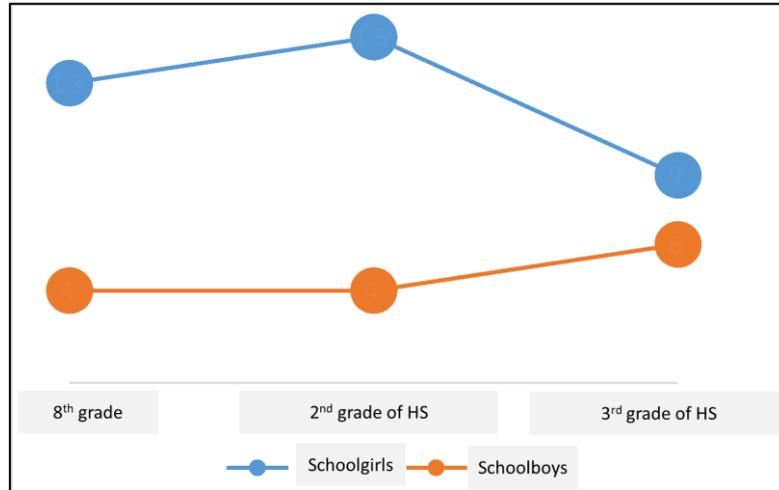
Source: Adapted from ROSE (2023).

To promote the visibility of women's presence in the exact sciences area, during the development of the outreach project and after the questionnaire had been applied, a lecture was given by a professor in the mathematics area from the Federal University of Recôncavo da Bahia in the participant schools. The lecture started with the History of Women in Sciences, mainly in mathematics, and their struggle in the pursuit of knowledge since up to the mid XVIII century women had no access to it. However, despite these hurdles, some women did not give up and developed a significant role in human history. Next, the professor presented her research area to the students, and addressed the problems faced in academic life such as the fact that in the mathematics course, she was one of the few women to thrive in an environment that was predominantly occupied by men. Students were attentive and receptive throughout the activities, mainly the lecture, and were surprised by the cases of women who had to fight hard to reach their position in exact sciences. Students' questions were mainly related to the problems faced in the personal and academic life by the professors of the Federal University of Recôncavo da Bahia who were in their school.

RESULTS AND DISCUSSIONS

When evaluating Question 1, we obtained the graph shown below (Figure 1), which shows that from a total of 15 female students (8th grade) over a half answered that they were interested in learning about rockets and satellites, while from a total of 18 male students, only 4 expressed that interest. On the other hand, when verifying these answers in high school (3rd year), we observed that from a total of 18 female students, only half answered to be interested, while from a total of 8 male students, over a half of them showed interest in those topics. Therefore, we verified a decrease over time in the female students' interest in learning about how rockets and satellites work, while male students' interest increased. With their advancement in the school grades and their age, the schoolgirls' loss of interest might have been influenced by the imposition of gender stereotypes.

Figure 2 – Answers obtained to Question 1 about students’ interest in learning about rockets and satellites.

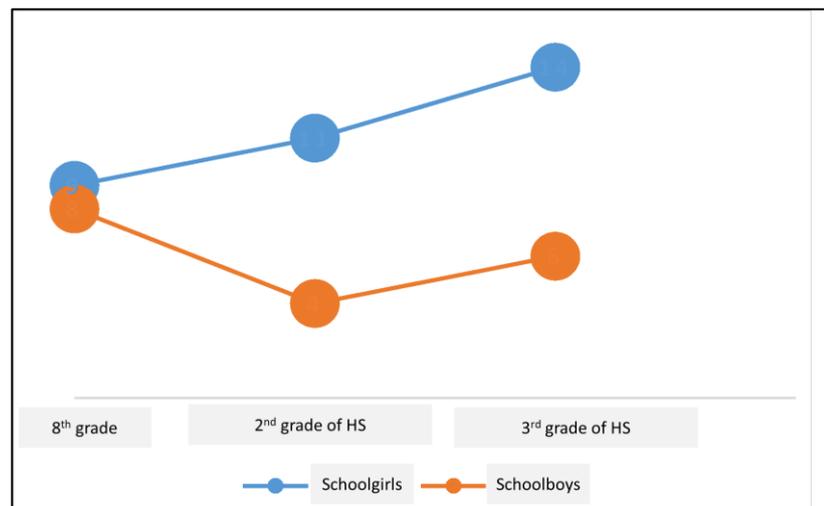


Source: Research data (2016).

In 2013, The Third Regional Comparative and Explanatory Study – (TERCEIRO, 2013) carried out at the Latin American Laboratory for the Evaluation of Education Quality recorded the participation of 15 countries and 195,752 students. In Brazil, the results revealed that in the fourth grade of elementary school, schoolgirls tended to show better performance than boys in mathematics, with a difference of less than 15 points. However, in the seventh year of elementary school, the scenery changed, and schoolboys showed a better performance than the girls, with over 15 points, which is in agreement with the findings of this research.

When evaluating the answers to Question 2, we obtained the graph shown in Figure 3. In a quite homogeneous manner, in all grades investigated, among male and female high school students, we noticed that over half of them were unaware of a scientists’ routine. We believe that the lecture given by the professor scientist in the mathematics area contributed to raise schoolgirls’ interest in exact sciences, given the number of questions asked to the professor about the academic career of a female scientist.

Figure 3 – Answers obtained to Question 2 about lack of knowledge of a female scientist’s routine.

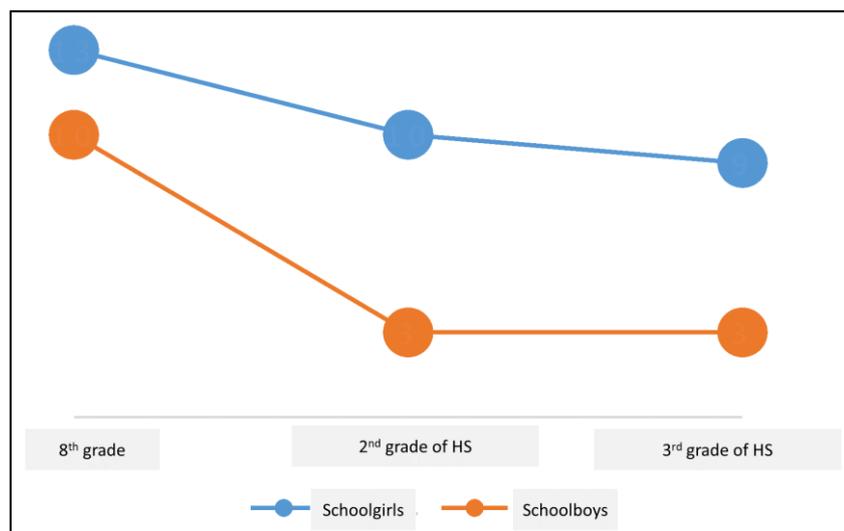


Source: Research data (2016).

The low visibility of female scientists in exact sciences favors the lack of knowledge about female scientists' routine by schoolchildren. According to the study carried out by Bezerra and Barbosa (2016), the percentage of female full members in the Brazilian Academy of Sciences, from different scientific areas, shows that women still have low representativeness even in areas such as health, where female undergraduate students are currently the majority. For those authors, the data analysis referring to the research productivity grant holders in the medicine and physics areas revealed that the percentage of women with productivity grant, at different levels, has been fixed in around 10% for a decade.

As regards Question 3 (Figure 4): in elementary school (8th grade), we verified that over half of the female students did not know whether they are going to go into higher education; in high school (2nd and 3rd grades), the same occurred. Regarding schoolboys, we found out that in elementary school (8th grade) just over a half of them were not sure whether they would go into higher education; in high school (2nd and 3rd), just less than a half of them were in the same situation. In all grades investigated, the number of schoolgirls that answered to be sure that they would go into higher education was lower than the number of schoolboys.

Figure 4 – Answers obtained to Question 3 about students' intention of going into higher education.

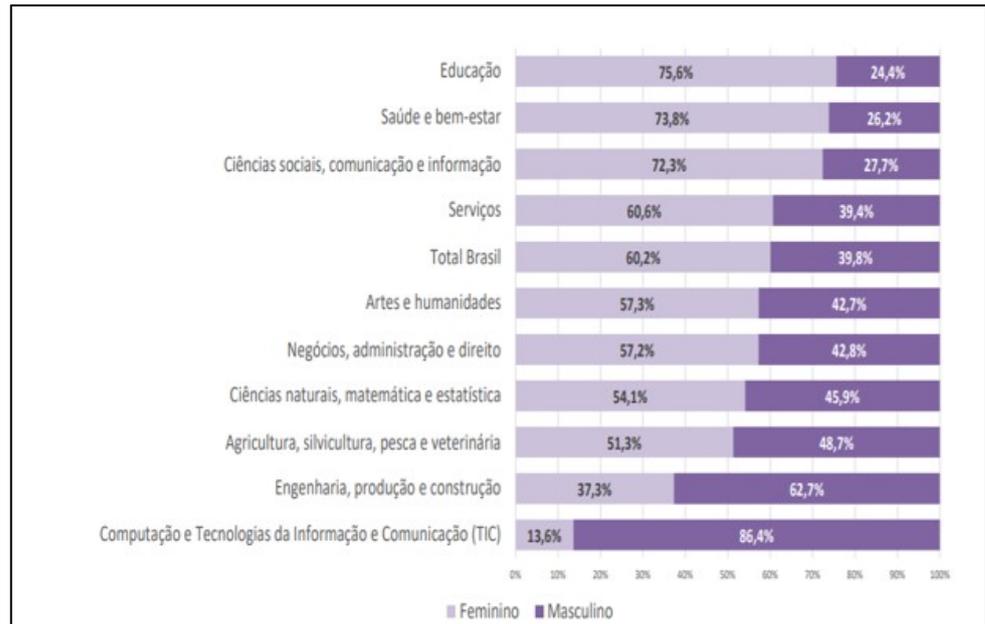


Source: Research data (2016).

These results (Figure 4) might have been influenced by cultural issues, which involve women's social position. According to Jablonski (2010), although marriage has always been a partnership between men and women, this typical arrangement of an era when women dedicated to household chores and their children upbringing while men left home to devote their time to their work and career, left deep roots regarding marriage ideals and gender roles to be played in society. Over the years, women representativeness in higher education and the scientific career has been considerably low since, according to Barreto (2014), the fact that female students outnumbered male students in Brazilian universities is a relatively recent event, considering that in 1956, they were 26% of the students enrolled, and in 1971, they were around 40%. With the advances resulting from the fight for gender equality, the current national scenery is progressively more inclusive for women. According to the Higher Education Census carried out by the Anísio Teixeira

National Institute of Educational Study and Research (INSTITUTO NACIONAL DE ESTUDOS E PESQUISAS EDUCACIONAIS ANÍSIO TEIXEIRA [INEP], 2019, p. 68), 57% of higher education students were women; the percentage of women concluding undergraduate courses in the humanities and health area is higher than the number of women concluding higher education courses in exact sciences (Figure 5). These results confirm the influence of gender stereotypes.

Figure 5 – Distribution of the percentage of undergraduate course conclusion according to the students' sex.¹



Source: INEP (2019, p. 68).

A relevant point is that the research was carried out in Cruz das Almas, a municipality of around 70 thousand inhabitants in the Recôncavo Baiano, whose students come from low-income families who live in the rural area of that municipality. This might have contributed to a decrease in their interest in going into higher education when they grew older (Figure 4). According to the Higher Education Census (INEP, 2019, p. 23), the number of people attending onsite higher education is lower in the Northern, Northeastern, and Midwestern regions of the country (Figure 6). This fact points out the need for further and deeper studies on regional issues associated with gender issues.

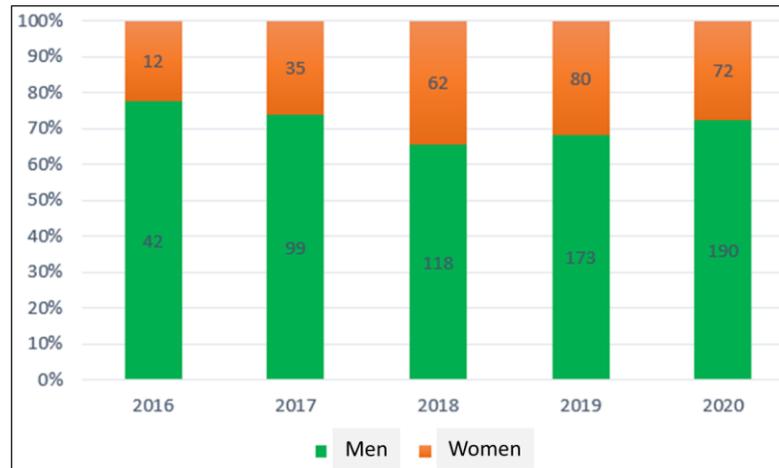
Figure 6 – Distribution of individuals enrolled in onsite courses in the federal education network.²

Região Geográfica	População de 18 a 24 anos 2019	Matrícula presencial na rede federal de educação superior				
		2009	2018	2019	Variação (%)	
					2009-2019	2018-2019
 Brasil	22.447.353 100,0	752.847 100,0	1.231.909 100,0	1.254.065 100,0	66,6	1,8
 Norte	2.267.631 10,1	91.263 12,1	144.868 11,8	144.659 11,5	58,5	-0,1
 Nordeste	6.401.677 28,5	239.561 31,8	376.830 30,6	384.032 30,6	60,3	1,9
 Sudeste	8.999.561 40,1	226.772 30,1	372.554 30,2	380.226 30,3	67,7	2,1
 Sul	3.008.968 13,4	120.644 16,0	209.820 17,0	213.273 17,0	76,8	1,6
 Centro-Oeste	1.769.516 7,9	74.607 9,9	127.837 10,4	131.875 10,5	76,8	3,2

Source: INEP (2019, p. 23).

Regarding the place where the project ‘Girls and Young Women from the Recôncavo Baiano in Science and Technology’ has been developed, it seems relevant to highlight that the number of students with active status in the Bachelor of Exact and Technological Sciences at the Federal University of the Recôncavo da Bahia has kept considerably a higher number of female active students according to the Activity Management Integrated System (2021) of that University in the last five years (Figure 7). This undergraduate course is a first cycle course, which includes a set of basic subjects that provide students with a solid knowledge of exact sciences, mainly mathematics and physics, and a set of formative subjects introducing essential knowledge of more specific areas in exact sciences (e.g., engineering, physics, and mathematics).

Figure 7 – Students with active status in the Bachelor of Exact and Technological Sciences course at the Federal University of the Recôncavo da Bahia.

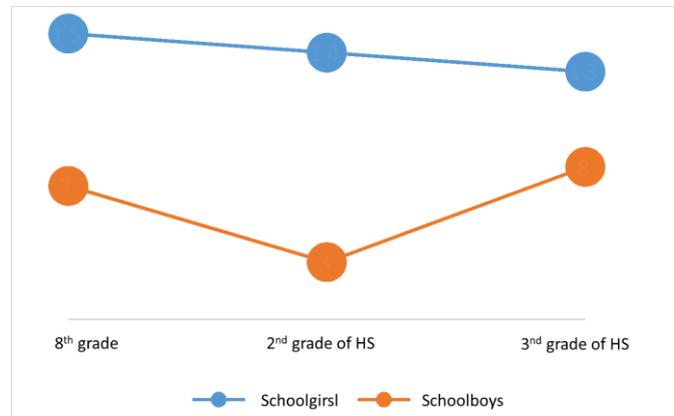


Source: Activity Management Integrated System (2021).

Finally, Question 4 of the questionnaire applied obtained the following results (Figure 8): in all school grades investigated, we verified that over half of the female students showed interest in learning about cancer cure, which might be related to professional careers in the health area that associate the professional activity with looking after people. On the other hand, in the 3rd grade of high school, all students (100%) answered to be interested in careers in the health area. The higher education census, carried out by the Anísio Teixeira National Institute of Education Studies and Research (INEP, 2019, p. 22) also revealed that 73.8% of the students concluding courses in the health area were women, while 26.2% were men. Therefore, the strength of gender stereotypes in women’s professional choice in their adulthood is noticeable.

In Brazil, 95% of the people who look after the elderly or ill individuals are women (HIDRATA, 2014, p. 64). In the COVID-19 pandemic context, a recent study (LAZARINI; RAMOS; ANDREOTTI, 2021) revealed that care management has gender, race, and social class, that is, who were the people responsible for cleaning, cooking, and caring those affected? Who looked after children, older and ill individuals, or other dependent people? Inside and outside the households, care was the activity that was never interrupted during the pandemic. Thus, for a more detailed study on the factors determining the low female representativeness in exact sciences, we would also have to take factors such as race and social class into account.

Figure 8 – Answers obtained to Question 4 about students’ interest in learning about the cancer cure.



Source: Research data (2016).

CONCLUSIONS AND IMPLICATIONS

In this article, we verified that schoolgirls’ interest in exact and technological sciences, regarding gender differences, was more noticeable among the investigated group in the high school grades. Apparently, girls lose interest in the exact areas when they get older and approach the end of their school years. Such inequality is a result of the androcentric structure (CORRÊA, 2010), which has been naturalized in the scientific and social fields, experienced in childhood, and reinforced by their families and school, peaking with the distancing of these girls from exact science areas. Schoolgirls’ (lack of) interest in the subjects involving exact and technological sciences is developed in childhood, when young children assimilate stereotypes, that is, boys are incentivized and provided with space to develop spatial abilities, while girls are led to believe that their main task in the world is to look after their house and family, rather than research, lead, or create anything (CORRÊA, 2010). Later in life, in high school, they meet mainly men teaching mathematics, sciences, and physics, and are very rarely exposed to references of women that outstand in these areas.

Although women represent half of the global population, they are very few regarding their representativeness in exact sciences. Women receive less recognition in the scientific field, as in physics, for instance. According to the Brazilian Academy of Sciences (ABC - Academia Brasileira de Ciências), women’s participation in the Nobel Prize is 1.85%. After Marie Curie was recognized, 60 years passed before another woman, the North-American Marie Goeppert-Mayer, received such award in 1963, along with two male colleagues. Over 55 years elapsed until the Nobel Prize awarded another physicist, the Canadian Donna Strickland, in 2018, who also divided the prize with two other male colleagues. However, there are no reports in the literature supporting the idea that women are less capable than men to thrive in exact science areas (ACADEMIA BRASILEIRA DE CIÊNCIAS [ABC], 2018).

Gender issues have been addressed in the UN debates. On 11th February, the International Day of Women and Girls in Sciences is celebrated since it was established in the UN General Meeting of 2015. Setting a specific day to celebrate the inclusion of women and girls in sciences is an opportunity to promote their

access to sciences, and a more egalitarian treatment, as well as women's and girls' participation in the area, according to the Gender Equality Guidelines (ORGANIZAÇÃO DAS NAÇÕES UNIDAS [ONU], 2023); the UN 2030 agenda lists gender equality and the reduction of inequalities as sustainable development objectives.

The National Council for Scientific and Technological Development (CONSELHO NACIONAL DE DESENVOLVIMENTO CIENTÍFICO E TECNOLÓGICO [CNPq], 2015), in Brazil in partnership with the Women Policy Secretariat, within the Woman and Science Program, from the *Science Pioneers* project, proposed to enable the history of research women that participated and contributed relevantly to the scientific development and qualification of human resources for science and technology in Brazil. Also, according to the CNPq (2015), the importance of recording the history (and trajectory) of Brazilian female scientists is to recognize that the female participation was (and is still) fundamental to knowledge. Pioneer female scientists opened the knowledge and power doors, regarding the former, each one of them played an important role in their area of knowledge. As for the latter, because they proved that women still do not make science fully, and that science cannot do without women's contribution. The dissemination of such history does not only produce models, but rather points to the ways opened by them. It ascribes them credit for their outstanding collaboration and allow people to understand better the History of Sciences and Technology in Brazil.

Adopting a time perspective, we must recognize that the Science Pioneers Project is in its seventh chapter in Brazil; in addition, the CNPq launched two calls, between 2013 and 2018, which confirmed the need for broadening the incentive to the interest and participation of girls and women in sciences, emphasizing the exact science areas, that is, engineering and computing. Those calls aimed to stimulate the education of women in these areas, and raise the vocational interest of female students, from basic to higher education, in these professions, and in the scientific and technological research.

This year, in Brazil, the Chamber of Deputies approved the project "Amélia Império Hamburger Women in Science Award", the annual prize is granted to three female scientists that outstood with their contributions to the scientific research in the exact, natural, and human sciences. The project creation and its approval revealed the need for exposing schoolgirls to the scientists' achievements and the recognition of the merit of their research. Amélia Império Hamburger (1932-2011) was a physicist, professor, researcher, and Brazilian science disseminator. She obtained her degree from the Philosophy, Science, and Language College of the São Paulo University, concluded her Master's degree at the Pittsburgh University (USA), in 1960, and was the co-author of a scientific article that was published in the first volume of the *Physical Review Letters Journal* in 1958. Among other achievements, Amélia was a co-founder of the Brazilian Physical Society (AGÊNCIA CÂMERA NOTÍCIAS, 2021).

This research also aimed to encourage the development of other studies based on a broad data collection, combining qualitative and quantitative methodologies, going beyond the counting of men and women working in exact science areas or based on gender binary characteristic. It is necessary to explore the factors that promote women's distancing from these areas, starting with an investigation that involves schoolgirls and their impact on these girls' interest in exact sciences and technology.

OS ESTEREÓTIPOS DE GÊNERO E O INTERESSE DE ALUNAS EM IDADE ESCOLAR POR CIÊNCIAS EXATAS E TECNOLÓGICAS

RESUMO

Esta pesquisa teve como objetivo investigar o interesse de alunas (em idade escolar) pelas ciências exatas e tecnológicas e, conseqüentemente, o ingresso em carreiras científicas. Em parceria com duas escolas públicas da cidade de Cruz das Almas, situada no recôncavo baiano, investigou-se vários aspectos que nortearam o interesse de alunas pelas ciências exatas, por meio da utilização do questionário ROSE (*The Relevance of Science Education*). Sob a perspectiva dos estereótipos de gênero, a pesquisa diagnosticou o interesse das discentes pelas ciências exatas e tecnológicas, e a intencionalidade em seguir a carreira científica. Os resultados da pesquisa revelaram que o interesse pelas ciências exatas e tecnológicas, quanto às diferenças de gênero, torna-se mais acentuado, para o público investigado, nas séries escolares do Ensino Médio. Os resultados também revelaram que em relação ao interesse dos alunos, o interesse das alunas diminui ao longo das séries escolares.

PALAVRAS-CHAVE: Estereótipos. Gênero. Ciências Exatas. Mulheres.

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NOTES

1 In Figure: Education; Health and Wellbeing; Social Sciences, Communication, and information; Services; Brazil Total; Arts and Humanities; Business, Administration, and Law; Natural Sciences, Mathematics, and Statistics; Agriculture, Forestry; Fishing, and Veterinary Medicine; Engineering, Production, and Building; Computing and Information and Communication Technologies (ICT).

2 In Figure: left (Brazil; North; Northeast; Southeast; South; Midwest) and horizontal (Geographical region; 2019 Population (18-24 year old); enrollment in onsite courses in the federal education network; variation (%)).

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