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Gender relations in Higher Education: how do students perceive them?

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ABSTRACT

Introduction/Objective: in this research is reported an exploratory study performed with university students about their conceptions on the gender relationships in higher education. **Methodology:** data were obtained by means of an open questionnaire answered by 149 participants (47 men and 102 women) from different courses and institutions. The acknowledge and analysis of some social situations, such as the gender predominance in specific areas and historical differences between women and men in Science yet revealed acritical conceptions. For example, the nature of caring is still attributed as a feminine characteristic that presents a low intellectual value. **Result:** such views can unfold in attitudes of discrimination that act in maintaining the current status quo, as they hinder some tasks, especially in the scientific field. Abandoning understandings and practices of a patriarchal society is not simple or natural. **Conclusion:** there is still a need for a critical analysis and the questioning of the means of production and division of labor, as well as of behaviors and attitudes throughout the life course.

KEYWORDS

Gender discrimination. Higher education. Cultural diversity..

Relações de gênero no meio acadêmico: como estudantes de Ensino Superior as percebem?

RESUMO

Introdução/Objetivo: a pesquisa aqui relatada se refere a um estudo exploratório realizado com estudantes universitários sobre suas concepções acerca das relações de gênero na educação superior. **Metodologia:** a coleta de dados foi realizada por meio de um questionário aberto e contou com a colaboração de 149 participantes (47 homens e 102 mulheres) de diferentes cursos e instituições de ensino. O reconhecimento e análise de situações, tais como a predominância de gênero em alguns cursos e as diferenças históricas de participação das mulheres na ciência, ainda revelam concepções pouco problematizadas e simplistas. Por exemplo, a natureza do cuidar ainda é atribuída como uma característica feminina e de pouco valor intelectual. **Resultado:** tais visões podem se desdobrar em atitudes de discriminação que atuam na manutenção do status quo vigente, pois obstaculizam algumas tarefas, em especial no campo científico. **Conclusão:** Abandonar compreensões e práticas de uma sociedade patriarcal não é simples ou natural. Ainda é preciso uma análise crítica e a problematização dos meios de produção e divisão do trabalho, bem como de comportamentos e atitudes ao longo do percurso de vida.

PALAVRAS-CHAVE

Ensino superior. Internacionalização. Estudantes internacionais. Instituições de ensino superior brasileiras.

Relaciones de género en la Educación Superior: cómo los estudiantes las perciben?

RESUMEN

Introducción/Objetivo: la investigación presentada aquí se refiere a un estudio exploratorio realizado con estudiantes universitarios sobre sus concepciones acerca de las relaciones de género en la educación superior. **Metodología:** datos fueron obtenidos mediante un cuestionario abierto y contó con la colaboración de 149 participantes (47 hombres y 102 mujeres) de diferentes cursos e instituciones educativas. El reconocimiento y el análisis de situaciones, como el predominio del género en algunos cursos y las diferencias históricas de la participación de las mujeres en la ciencia, aún revelan concepciones poco problemáticas y simplistas. Por ejemplo, la naturaleza del cuidado se atribuye como una característica femenina y de poco valor intelectual. **Resultado:** Estos puntos de vista pueden desarrollarse en actitudes de discriminación que actúan para mantener el status quo actual y obstaculizan algunas tareas, especialmente en el campo científico. **Conclusión:** abandonar las comprensiones y prácticas de una sociedad patriarcal no es simple ni natural. Todavía existe la necesidad de un análisis crítico y el cuestionamiento de los medios de producción y división del trabajo, así como de los comportamientos y actitudes a lo largo del curso de vida.

PALABRAS CLAVE

Discriminación sexual. Educación universitaria. Diversidad cultural.

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1 Introduction

Over time, society has been marked by struggles for social equality in various instances. As in other fields, the scientific environment presents a segregation that is established in terms of gender (SILVA; RIBEIRO, 2014). But this male superiority is not only present in scientific areas, spreading in different sectors. In the classical arts, for example, the first names of great painters that appear are always men, such as da Vinci, Rembrandt, Goya, Monet, Van Gogh, Picasso, Dalí and Portinari. Frida Kahlo, Gentileschi, Tarsila do Amaral and a few other women's names appear amidst a male constellation.

Such gender distinction in the production of knowledge could already be observed in ancient Greece, in which in several speeches Aristotle pointed out the physical, mental, and spiritual inferiority of women, whose only role would be reproduction (MATIAS DOS SANTOS, 2014). Durkheim, on the other hand, referred to the supposed intellectual superiority of men due to cranial differences. For the author, the sciences would mean a space for men and, furthermore, with the biological evolution, women would be at a lower level than men and their functions would be socially accepted as hierarchically inferior (MATIAS DOS SANTOS, 2014). In this context, science was demarcated by sexual, territorial, and hierarchical segregation, being "socially apprehended as natural the fact that women are more present in the humanities, letters, and arts, while men are still the overwhelming majority in the technological areas and in the supposedly "exact" sciences" (MATIAS DOS SANTOS, 2014, p, 587).

This conception reinforces the thought that men are driven by reason, while women react according to feelings, in a non-rational way. Another historical example was Jean-Jacques Rousseau, considered one of the great philosophers of history, who defended the idea that abstraction and scientific work was not female nature. Chassot (2011) argues that such ideology of distinction still present in society reflects the Greek-Jewish-Roman triple ancestry, from which women were held responsible for harmful attitudes, among them having tried the forbidden fruit that led to expulsion from paradise. In such a way, breaking with the inequality of women's participation in intellectual productions requires changes in society regarding the invisibility that has been established for a long time. This was and still is a process demarcated by historical issues that disfavor women's participation in several spaces.

The concept of gender raises controversial debates, especially due to a biologizing notion that gains strength within conservative thought (SILVA, 2018). On the one hand, it can be understood as a binary discourse that transforms individuals into male or female (MENDES, 2010). From a more progressive perspective, it is seen as a historical and social construction of identity, so it rejects a biological pre-determinism. However, such understanding has been seen from a conservative perspective as a distortion of supposedly moral values because one is either born male or female. With this, an avalanche of arguments and counterarguments occupy the media in criticism, constituting what has come to be called "gender ideology". The "gender ideology" is an alleged attempt to distort moral values and the family conceived under a patriarchal viewpoint and the binarism man and woman (SILVA, 2018). However, such

conception becomes fallacious (SILVA, 2018) for at least two reasons. The first one is that it is not an ideology, that is, there is not in what has come to be called "gender ideology" a discourse that concretely aims to (de)qualify subjects and their social identities. The second is that the discussion of gender is inserted precisely in the attempt to understand the historical reasons for the inferiorization of women in the search for egalitarian paths. The inferiorization is caused by prejudice and discrimination, prejudice being a mental construction that almost invariably manifests itself in actions and attitudes that lead to discriminate negatively against a person or group because of their condition, in the case of being a woman.

Considering that the university is, for a long time, the main space of production and dissemination of knowledge and that, apparently, it is a plural space in which the idea of gender inferiority would be overcome, it becomes relevant to understand the factors that interfere in the formation of new scientists. Thus, it is worth considering the participation of women in science from the perspective of this space in which the careers of new scientists are built. From this perspective, this work sought to understand the conceptions of male and female undergraduates about gender relations in the academic environment. From this, it is hoped to contribute to reflections aimed at overcoming inequalities. The guiding question of this research was: How do undergraduate students perceive gender relations in the academic environment?

The analysis of this question demands a multiple viewpoint, which considers the construction of sciences within a complex mechanism, amidst dislikes and conflicts. Such a view is in alignment with Howes' (2002, p. 118) proposition about a critical feminist pedagogy: "The central tenet of critical feminist pedagogy is that students are provided with opportunities to openly explore their experiences, feelings, and perspectives.

For the author, thinking with feminist assumptions must embrace the discussion of gender and power as they appear (and are hidden) in science and in the classroom. Critical feminist pedagogy focuses on the social categories of class, race, and especially gender to discuss the role played by science in relations of oppression and the role it could play in the democratization of knowledge. Also pertinent are questions about the validity of the knowledge produced, reflections on who the producers of this knowledge are, and what possibilities for access exist. Thus, the discussion of the data is basically anchored in studies that discuss gender and science.

2 Methodology

The research reported here refers to a qualitative exploratory study conducted with college students about their conceptions of gender relations in higher education. The research was developed from a questionnaire composed of open questions that aimed at the free expression of the participants' point of view. Before the final data were obtained, the questionnaire went through a validation stage in which it was answered in person by 16 male and 8 female undergraduates. After adjustments, data collection was conducted virtually (via

Google tool). The survey was disseminated through a social network on a page created for this purpose, with the voluntary collaboration of interested parties for the multiplication of information. Thus, after a period of three weeks, 149 responses were obtained. Before starting the survey, the participants were informed about its objectives, and participation was free and voluntary.

The questionnaire contained 8 questions (Chart 1), forming three blocks of questions. In the first block, the questions (1 to 3) had the intention of tracing a general profile of the students and of the students with course and educational institution information. The second block contained questions (3 to 5) related to the students' identification of interpersonal relations at the university in terms of gender. The students' conceptions regarding the differences and overcoming of these differences between men and women in the choice of courses, in the production of knowledge, and in the university are comprised in the third block (questions 6 to 8).

Table 1. Questionnaire used in data collection.

General Information: Age: _____ Gender identification. M () F () Other. _____	
1	What is your undergraduate program?
2	In which educational institution do you study?
3	Regarding the relationship with fellow students in a professional point of view, is the relationship with female colleagues the same as that with male colleagues?
4	Regarding the relationship with professors (men), have you ever experienced or witnessed any different treatment (positive or negative) because you are a woman? Justify.
5	Have you ever discouraged or had a colleague who was discouraged to follow a course in the scientific area because she was a woman? If yes, please describe.
6	In your opinion, why do some courses (Pedagogy and Nursing, for example) have a majority of women, while in other courses (Engineering and Physics, for example) the presence of women is much smaller? Justify.
7	It is known that most of the human intellectual production (Science, Art, Politics) is made by men. What is your opinion about the little participation of women? Justify.
8	In your opinion, has the prejudice for the feminine gender in the university been overcome?

Source: The authors

The data were analyzed following principles of content analysis. Initially, all answers were read in their entirety. Then, a new reading was conducted to group the answers by similarity, establishing common units. The answers grouped by similarity constituted the analysis categories. Excerpts in order to represent the categories were used. The codes EM (female student) and EH (male student) were applied to present the results. With this, a general picture was obtained, in terms of quantity, about how students think and see differences between men and women in the scope of the course and the production of knowledge. The results were presented with the help of descriptive statistics, with the calculation of the representative percentages of each category conducted separately by gender.

3 Results and Discussion

As far as the general profile is concerned, the research counted on the contribution of 149 participants (102 women and 47 men), aged between 17 and 32. Regarding the women, they came from 21 courses: 34 undergraduate students in Chemistry, 11 in Mathematics, 7 in Biology, 6 undergraduate students in Architecture and Nursing, 5 were from Psychology, Pedagogy and Zootechny, 4 in Physical Education, 3 in Fishing Engineering and Agronomy, 2 undergraduate students in Physics, 2 undergraduate students in Computer Science, 2 undergraduate students in Administration and one representative from the following courses: Pharmacy, Civil Engineering, Law, Tourism and Human Resources. Of this total, the participants are distributed among 8 different educational institutions: 91 students from the Federal University of Alagoas (UFAL); 5 students from the Universidade Estadual de Alagoas (UNEAL) and one representative from the following institutions: Universidade Estadual do Oeste do Paraná (UNIOESTE), Universidade Federal do Pará (UFPA), IET (Instituto de Ensino Teológico), Universidade Federal de São Paulo (Unifesp-São José dos Campos), Universidade Norte do Paraná (UNOPAR) and Instituto Federal de Alagoas (IFAL).

Regarding the men who participated in the survey, 15 are from the Chemistry course, 13 from Agronomy, 2 from Geography, 2 from Letters-English, Physical Education, and Architecture, and 1 representative for the Mathematics, Administration, Civil Engineering, Animal Science, Letters-Portuguese, Computer Science, History, Law, Public Administration, Nursing, and Physics courses. Among the institutions, 35 are from the Universidade Federal de Alagoas (UFAL), 10 from the Universidade Estadual de Alagoas (UNEAL), 1 from the Garanhuns Law School, and 1 from the Universidade Estadual Paulista (UNESP).

The importance of the conceptions of women and men who are in the academic environment about gender relations is due to the possibility of unveiling situations related to inequality, at the same time that they allow us to reflect on the process of awareness and the need for a change of attitude in this environment. When questioned about the equality of coexistence in the university between colleagues, about 85% of the men's answers and 64% of the women's answers agreed that the treatment is equal between men and women. The main justification was based on respect and the need for academic coexistence to be marked by equality.

However, 15% of men and 26% of women identified situations in which gender issues emerged. These data reveal that women perceive to a greater extent differences regarding gender relations within the university. This perception leads, in some cases, to defense mechanisms, such as avoiding closer contact with men. However, for the most part, the justifications of both men and women do not allow to make explicit what such differentiation would look like.

Justifications from men:

I have seen many friends taking liberties with their female friends. Respect is different. (EH1, 2015).

In the academic environment we should all be equal regardless of gender, but I notice differences in the treatment of women in the classroom. (EH22, 2015).

Women's justifications:

It's not a friendship like with the girls, but we just talk as much, as necessary. (EM1, 2015).

It is nice. However, I admit that because I am a woman there is a greater care for me when facing different daily situations. (EM3, 2015).

It is different from the relationship with the female colleagues, but there were never any problems in relation to the male colleagues. (EM71, 2015).

It is possible to assume that even though they feel "something different", women are still unable to analyze in more depth the roots of these behaviors. It can be reflected that sometimes the sub judgments occur in a disguised way, that is, if there is the absence of attitudes that are considered humiliating or exclusionary attitudes explicitly, the prejudice marks are disregarded (SILVA; RIBEIRO, 2014).

When asked and asked about any situation of differential treatment of male professors in relation to female students, 72% of men and 69% of women affirm that there is no differential treatment (4% of women did not answer). On the other hand, 27% of the participants and 28% of the participants affirmed having experienced or witnessed different treatment by male professors. The justifications present diverse aspects.

Justifications from men:

Sometimes teachers are more respected than female teachers. (EH13, 2015).
I've heard that some teachers somehow facilitate the curricular progress of female students. (EH25, 2015).

After all, there are some who pay more attention to women, with ulterior motives. (EH29, 2015).

Women's justifications:

Yes, for sure the fact of being a woman gives the idea of being a fragile being, and this makes some teachers lessen the pressure. (EM2, 2015).

Whether they like it or not, there are "some" who see the person as not "as intelligent" as some of the men in the class. Yes, there is a certain prejudice. (EM36, 2015).

Yes, some teachers treated the girls better, and this influenced the grade. (EM67, 2015).

Some teachers use their position to intimidate women. So, they try to get some (sexual) benefit from the students in exchange for grades or favors, just because they are women. (EM88, 2015).

Yes, I've been harassed by two professors, between compliments and shaking my waist, even though I wasn't one of the prettiest girls in the course. [...]. (EM92, 2015).

From these answers it is possible to denote other aspects of the differentiation of women. The idea that men are the owners of knowledge and that their intellectual capacity, in general, is overestimated in relation to women is reinforced. Since in the scientific career there is an overvaluation of the competences said to be male, it is understood that if the woman wants to follow in the spaces where men have greater influence, she must seek these skills and characteristics, leaving aside her femininity to remain active, productive, and unnoticed in the scientific environment. In this perspective, Schienbinger (2001) argues that many women in the University abandon characteristics or trappings of "femininity" to achieve their legitimacy as scientists and avoid unwanted attention such as harassment.

Two scenarios can be observed here that are most frequently pointed out. In the first, the man gains extra credit in terms of knowledge about women. This may be associated with a permanence in society of the idea of the man as the main figure in science. Thus, as the greatest bearer of knowledge he deserves more respect for presenting more merits in relation to a female professor. The production of knowledge linked practically to men serves as an argument to determine the social places that subjects, men, or women, can and should occupy. Thinking this way is to understand gender not only linked to its biological nature, but that these understandings are entirely constructed in and by culture (SILVA; RIBEIRO, 2011). Thus, it has been required from women a constant proof of competence in different instances, which do not occur equally for men.

The second scenario shows how this demarcation of space can cause situations that refer to sexuality. Situations of harassment and even violence emerge, and many times there may be "second intentions". Male students even insinuate that women's academic life could be made easier. Implicitly (or would it be explicitly) there is a preconception of women's incapacity, hence the need to have a "facilitating means". In this perspective it is highlighted the position of women regarding the construction of science and the appreciation of their role: "The feminist critique of science has been concerned with problematizing the understanding that legitimate scientific production is based on values associated with the male, of which women are considered naturally devoid" (SILVA; RIBEIRO, 2014, p. 456).

Reinforcing this idea, Sandenberg (2001) points out that feminist criticism has advanced from a state of mere denunciation of the exclusion and invisibility of women in the world of science to the stage of questioning the very assumptions established by "Modern Science", being judicious when investigating the parameters incorporated in the scientific environment while revealing that this environment is not and never has been neutral.

Following this reasoning, it was also questioned about the situations of discouragement of women in a scientific area. The largest portion (89% of the male and 72% of the female participants) of the survey claimed not to have experienced anything that might discourage the presence of women in the university environment. However, the women's justifications unveil

new interpretations.

No. In the case of the pedagogy course, people just think that it is a course more for women. (EM26, 2015).

No, because most of the professors in my course are women, and most of the students are also women. (EM45, 2015).

No, on the contrary, since women originally formed my course. (EM51, 2015).

It is possible to deduce that the demarcation of space is already evident by the naturalized directing of women to some areas considered of feminine character. Matias dos Santos (2014) and Silva and Ribeiro (2014) state that because women are more numerically expressive in some activities and have greater difficulties in occupying other spaces, in the androcentric view, their absence becomes something naturalized, which often goes unnoticed and results in an implicit segregation. Thus, the fact that there is a prevalence of male or female courses becomes a historically constructed discouragement to access certain careers and activities, which goes unnoticed by most. In addition, 3% of them revealed that they are not sure whether they have witnessed or have been victims of discouragement in the course. This fact may also have its roots in the naturalization of male chauvinist discourses and practices, which make them unaware of such issues.

For their part, a portion of 23% of the students identified that the relations of gender discouragement are present in the University mainly through the words of both professors and colleagues. In their justifications the women highlight:

Yes, with phrases like 'but you're a woman and you're going to take this course' and 'you're not going to make it. I just answered: 'Watch me. (EM14, 2015).

Yes. There were moments in class when the professor paid more attention to the boys when he answered their questions; when he said that the course was historically male and that girls who had difficulties should look for their colleagues (boys); they also said that he knew that most girls would go into the education area, etc. To their surprise, in my class there were more girls than boys; many girls did their TCC in the area of "hard mathematics". (EM20, 2015).

On the first day of class a certain teacher made it clear that studying mathematics was for men, because women never had time and were not intelligent enough to understand the subjects. I was shocked [...]. (EM33, 2015).

The answers allow us to infer that gender is a determining factor in the space occupied by the individual and that obstacles may be present as a result. This demarcation of space naturalizes women as lacking cognitive capacity and apt in the "art of caring" and especially in areas of the humanities, which supposedly require less intellectual capacity. These data point out that there are spaces in the university that reproduce power relations and gender bias, as there are demarcations of feminine and masculine spaces that can exclude or inferiorize women (SILVA; RIBEIRO, 2014).

Such dichotomous view is rooted in society as well as in the scientific environment.

Schienbinger (2001) points out that androcentrism, in addition to imposing exclusion of women by determining the most important roles in scientific productions for men, discriminates the performance in male-dominated environments, conferring a visible barrier in the culture of science. According to Bandeira (2008), the engagement of women in science-related activities has faced and still faces the problem of breaking through culturally constructed hierarchies. The non-recognition of inequality is an additional factor for the reversal of institutional relations of male domination present in several axes' society.

The most recent census of Brazilian higher education shows the predominance of women in terms of undergraduate enrollment and completion (BRASIL, 2018). Considering that about less than a century ago women could not attend a university, such an aspect is a significant advance. However, the achievements are contradictory, because women are inserted, mainly, in traditionally female areas, thus evidencing that the gender difference is still a reality resulting from a historical-sociocultural heritage (BERNARDO; ALBUQUERQUE; MATIAS DOS SANTOS, 2014).

Thinking about such differences is an initial step towards actions in this direction. Given this, the research participants were asked about the reason for the demarcation of some courses, in which there is a predominance of women or men. The answers varied and could be grouped into different categories, summarized in Table 1 separately by gender.

Table 1. Results on the demarcation of space in higher education courses.

Identified categories	Men	Women
Historical and socio-cultural heritage	23,4%	32%
Feminine characteristics	21,3%	26%
Prejudice regarding the space that women/men should occupy	19,1%	14%
Option or affinity	17,1%	13%
For not believing in themselves	-	3%
Other obligations	-	3%
Don't agree	4,2%	-
Didn't know how to answer	14,9%	5%
Did not answer	-	4%

Source: The authors

As can be seen, 32% of the women and 23.4% of the men attribute such differences to a historical-sociocultural heritage. It can be seen that female and male students agree that differences between men and women have historical roots.

Justifications of men:

These courses have more women because of the cultural issue that was created; for a long time, women only had the right to take the pedagogy course, while men could take the more prestigious courses. (EH9, 2015).

Throughout the historical and cultural process of the professions, which is why there is this predominance, but I believe that little by little this disparity is decreasing. (EH14, 2015).

Women's justifications:

Even with the emancipation of women, resulting from social pressures and cultural changes, society historically divided the man as being the strongest and the woman as being the most sensitive, and this linked the woman to the 'caring' areas while those that demanded quick and precise reasoning remained male. It is a cultural issue that remains in our society until today. (EM7, 2015).

This fact is related to the historical thought that women should dedicate themselves exclusively to domestic activities. I believe that the activities associated with the first two courses are more similar to housework and, perhaps for this reason, were better accepted by society at the time when this thinking predominated. The greater number of women in these courses today is due, then, to some of the marks that still remain from this thinking. (EM90, 2015).

For Matias dos Santos (2014), science is influenced by historical, economic, and cultural factors inherent to the society in which it is inserted, this means that science suffers influence from external means, in this case from the sexist society. Although this conception is rooted, it is already possible to observe an opening for the entry and participation of women in various fields of the university. For Lombardi (2005), this is mainly due to cultural transformations that have encouraged women to think about building a professional career and, above all, the expansion of vacancies in universities that has encouraged the female search for professionalization.

In turn, 26% of the female undergraduates and 25% of the male undergraduates stated that the choice of the course is related to the individual's characteristics, something apparently pre-established. This means that 26% of the women in this survey believe that areas that require a certain amount of care and tenderness are dominated by women, because sensitivity and care are in the female nature.

Because courses like nursing and pedagogy are courses that are based on caring for people, caring for children, and are seen as an extension of the woman's role in the home. These courses will improve the characteristics that are required from women. So, she won't be going too far out of 'her place'. (EM23, 2015).

In the area of pedagogy and nursing, the participation of women is large, because it is an area that requires care, attention, and patience. In Engineering and Physics, on the other hand, these are areas where concentration is required, it is an isolated job, where it is not necessary to show feelings, which is why men stand out in these areas. (EM38, 2015).

In my opinion, this is due to the nature of women, because they already have a natural instinct to care, protect, support, teach, etc. In short, it is the maternal instinct speaking louder. Not that women in exact sciences don't have maternal instincts, but that they have a greater desire to understand and "control" physical, chemical, and natural phenomena. (EM41, 2015).

Because it is a more delicate area, and that needs more attention, and another issue is that the courses have a remuneration that is even considered or even a reality of being employed in the market. (EM76, 2015).

The justifications reinforce the discourse that women choose courses in which they naturally have essential skills, not requiring great intellectual effort, because their characteristics would be perfected. On the contrary, men have great difficulty in entering the humanities, because this is not "naturally theirs". Men are better suited for areas that require greater concentration, a reason that dispenses with sentimentality. In this dichotomy between man and woman, the woman is placed as the non-rational being, dominated by feelings, unlike the man who is the holder of logical reasoning (MATIAS DOS SANTOS, 2014). One of the justifications presented by student casts doubt on whether women in "exact" areas have maternal desires like women who are in humanities. Such a perspective is strong evidence of how gender issues are not overcome, even far from it, in academia.

Silva and Ribeiro (2014) point out that from the perception of gender relations between the courses it is verified the presence of elements that enable the discussion of the existence of a vision marked by the dichotomy that labels reason, objectivity, logical reasoning as "masculine", and feeling, subjectivity, giving, caring as "feminine", and thus, it becomes noticeable that some courses are labeled as suitable for the presence of each gender. In this sense, Sandenberg (2001, p. 8) claims that "for feminists, the key point is that these dichotomies are constructed, by analogy, on the basis of perceived differences between the sexes and gender inequalities."

The justifications deserve a problematization because they reinforce stereotypes and the institutionalized androcentric logic. It is noticeable that the number of students, including women, who reproduce patriarchal thinking in which qualities such as patience, delicacy, and maternal instinct are attributed to women is not small. Moreover, some of these characteristics (supposedly feminine) are not valued intellectually as the qualities supposedly held by men. Howes (2002, p. 145) discusses this aspect, questioning this logic:

I believe that feminists do not fully address this point, possibly because we fear the likely possibility that it will reinforce the already contracted position of women as "caregivers. Or maybe we just aren't admitting it: caring is good (?). Caring is not considered scientific nor is it valued as an intellectual virtue. In the pursuit of democratic ideals, however - of which science for all is certainly one - mindfulness is a necessary habit of mind.

As a result, such capacities would not be seen as intellectual, but as born, which confers an inferior value. Therefore, since these (supposedly female) characteristics are not intellectually valued, the qualities supposedly held by men would automatically become superior. As a result, these "feminine" professions start to have a differentiated valuation and can be seen as intellectually inferior, also because they are more sought after by women.

Such aspects show themselves to be rooted and have consequences. For Keller (2006, p. 32): "women scientists are under specific pressures to give up any traditional values they may have absorbed as women - if for no other reason, simply to prove their legitimacy as scientists." Motherhood, in this sense, is a "hindrance" to the academic career, reflecting in various dimensions, such as the granting of research grants. Mendes et al. (2010), for example, pointed out that of the 383 CNPq research productivity fellows in medicine, 253 (66%) were men. This

ratio is even lower in the area of physical education in which women hold 24.3% of fellowships (LEITE et al., 2012). The percentage of female research productivity fellows in physics is even lower, being around 11% for about a decade (SAITOVITCH; LIMA; BARBOSA, 2015). Thus, in relation to universities, women still present themselves as less "productive" figures in the sense of developing and funding research, a fact that cannot be attributed to an individual meritocratic variant.

On the other hand, 13% of the participants and 17.1% of the participants associated this gender division with affinity issues, since both men and women are able to choose the area, they want to work in. There would be no interference of sexist aspects in this way, being highlighted speeches of the type (women and men respectively):

Women's justifications:

I believe it is a personal matter, some courses just don't appeal to most women, as well as men. (EM4, 2015).

I think it is because women like to work with human sciences. Women identify more with working with people. (EM83, 2015).

Because they identify better with them, not a matter of thinking that a certain course is suitable for women, but it is identification. (EM92, 2015).

Men's justifications:

Because these are areas that women identify themselves more with. (EH25, 2015).

If there are more women in education, it is because they like to deal with children. Women have an easier time of it. (EH40, 2015).

The justifications reveal again that women themselves attribute characteristics as being innate to themselves, usually naturalized in arguments such as "they like to work with human sciences", "courses that do not arouse interest" or "identification". Such issues seem to be so ingrained that they are not questioned.

In turn, 14% of the female academics answered that the absence of women in some areas is due to prejudice and the demarcation of spaces that women or men must occupy. In their justifications, the women point out

Because there is still prejudice against women in these areas, unfortunately the current society is sexist. (EM16, 2015).

Because it is imaginary divided that these are men's courses and women's courses, so both men and women are a little shy when it comes to choosing a course. (EM27, 2015).

There is prejudice in both examples from boys and girls, in my course I always hear colleagues 'joking' saying that in the tourism course if there is a heterosexual student it is by accident. At some point in time someone invented that engineering is something for men and that teaching, and gesticulating is something for girls. Nonsense. (EM72, 2015).

In general, 19.1% of the academics also justify that if a man chooses a course that is considered for women, he will face prejudices, these being linked to sexuality. According to the justifications of the men:

The courses mentioned have mostly women in them due to the fact that it is considered by many men as women's courses, so if they take them, they can be ridiculed. (EH35, 2015).

Prejudice, biology and even nursing are known as the gay course, because it is only for women. (EH42, 2015).

Such arguments reflect an inverse logic of the prejudices and sexism instilled in society. Because they are female courses, the demand for men could only occur for homosexuals. It can be seen that the dynamics of gender relations at the university establishes behaviors that become natural and standardize opinions. In this sense, what expressively presents itself is the naturalization of women or men with feminine characteristics (homosexuals) in these courses. This is a generalization of human nature in behavioral patterns.

A small portion of the academics (3%) pointed to the social division of labor as a factor that hinders graduation:

In my opinion they need time to do other things like take care of the house, children, and work. (EM24, 2015).

Historically, women have played roles such as taking care of the children, performing domestic chores, and still being wives. These are integral and constant roles that do not seem to be equally divided with men in the domestic environment: "It is not the biological issue of reproduction that determines the role of women as mothers, but the gender relations crossed by power/knowledge that assign a social meaning to motherhood" (SILVA; RIBEIRO, 2014, p. 462). In a society with equal division of tasks, being a mother, wife, and housewife would still be variables, but not determinants in the choice of the profession one wishes to follow. However, the division of domestic activities since the beginning of the female consciousness seems to interfere directly in the choices, or at least in the interpretation of the course choices. This aspect reinforces the growing need for the insertion of this discussion in the different sectors of society.

Another aspect questioned was in relation to scientific productions being mostly male. It was possible to identify different categories for the answers, as shown in Table 2.

Table 2. Justifications given for male predominance in human productions.

Answers	Men	Women
Historical-socio-cultural issues	40%	26%
This is changing	18%	26%
Lack of space	17%	13%
Family responsibility	-	13%

Women's lack of interest/believing they are incapable	-	9%
Disagrees	-	3%
It is still like this today	2%	-
Did not know how to answer	23%	1%
Did not answer	-	9%

Source: The authors

About 40% of the students and 26% of the students expressed conceptions that consider the importance of historical-socio-cultural issues as a relevant factor, as is presented in the following descriptions:

Male Justification:

This is part of a historical context, for we know that women only gained space when they started to fight for equal rights. (EH28, 2015).

Woman's justifications:

Well, I think and defend the idea that the little participation of women in the production of science, besides other social, political, and economic aspects, is a historically determined fact. Women did not choose to have the role they had and the role they have today in society (which, by the way, is gaining increased space), the female roles were determined and are explained by historical facts and should be analyzed from prehistory to the present day. Thus, it would be impossible that today the participation of women and men in intellectual production would be on the same level, because according to an ontological analysis of the issue women have not yet obtained full access and development in these matters as men have, due to several factors. But, as a defender of equal rights and of no intellectual distinction between the sexes, I support and want to see the advancement of women's performance in all aspects that involve and rule society. (EM60, 2015).

From the answers, one can see how much the heritage of androcentrism is present in society and how much it characterizes the intellectual productions. The woman becomes invisible in power relations, in the scientific field and in several other spaces (MATIAS DOS SANTOS, 2014). Since the process of intellectual construction is socially made, it is influenced by social heritages.

Another portion of female undergraduates (13%) attributed the impaired presence of women in intellectual production to the lack of time, because family responsibilities are prioritized by them.

I believe that a possible greater number of women's attributions (such as the roles of mother, wife, housewife, student, outside job, for example) in comparison to men, in some cases ends up making it more difficult for women to dedicate to these activities, due to the time they need to dedicate to them. (EM21, 2015).

The little participation of women in this production is, in my opinion, linked to the 'other obligations' that women have. Let me explain. Men can be fathers, husbands, businessmen, etc., but they always have time and all the support from society to grow

intellectually. On the other hand, a woman who does not give up maternity needs at least two years to take care of her child and the 'obligations' go beyond: to take care of the education of this child, beautify herself, work, 'be a wife', etc. Nowadays, even with the growth of women in the labor market, at university, and in professions that used to be exclusively male, these 'obligations' always come up. The other day I read an article that talked about the difference in the number of women in universities compared to master's and doctorate programs: women were winning by far in the university, but in master's and doctorate programs, men were a lot more numerous. The women who went on to masters and doctorates were mostly single. (EM67, 2015).

It does not seem absurd to say that in today's society women are still charged with the main responsibilities for childcare. The social role of housewife, mother, and wife has become so naturalized that it goes unnoticed, and its social construction is not questioned. On the other hand, the intellectual production is based on a male model, making women's participation difficult and placing them in conflict between professional and personal life. Thus, there is a silenced process of distancing women from science, as they are directed to so-called "feminine" activities. For Bandeira (2008), the difficulties are still prolonged in the sequence of life by the constraints and choices that are placed between fundamental pillars, such as family, maternity, and professional career.

Another portion of the answers recognizes that there are gender differences in intellectual productions, but presents an "optimism", that reality is changing, and women are conquering their space. In all, 26% of the female undergraduates and 13% of the male undergraduates assume this opinion.

Justifications from women:

[...] Currently, despite the differences that still exist, because of the women who actually had the courage to fight for our rights, we have the opportunity to be involved in all the areas mentioned above, still with less participation, but we already have some space, especially in politics, since a woman is governing Brazil. (EM6, 2015).

The little participation of women in intellectual production was historically built, but this has been changing through the daily struggles they have been facing. Many women are showing that children, a husband, a house to take care of, and the eternal prejudices are not insurmountable barriers to achieve professional success and personal fulfillment. Women are beginning to show that they have as much capacity as men, through their competence, creativity, and way of facing challenges. [...]. Today we have some federal programs that encourage the insertion of women in science, such as the Women and Science Program, which aims to stimulate scientific production and reflection about gender relations, women, and feminism in the country. (EM44, 2015).

Men's justifications:

I believe that some time ago the participation of women in intellectual production was small, but today it is equal to that of men. (EH14, 2015).

Women today can occupy any space in the market; they just have to want it. (EH26, 2015).

The justifications presented by women assume a more critical and broad character of the contexts that generate the process of inferiorization. Some of these points for men's

justifications, on the other hand, are somewhat limited, assuming that the discrepancies between men and women are products of the past or that equality would only be the result of personal ability, disregarding social forces external and internal to science itself. Howes (2002, p. 73) points out that:

Science itself is part of the culture and history that has kept women and other groups out of the scientific enterprise; the intense knowledge that science has created (...) has played and continues to play the role of keeping women and other groups out of that construct. Indeed, the development of scientific practice by middle-class and upper-class European men have established a set of defining values and virtues of science - values and virtues that are not suitable for everyone.

A vision that considers only the meritocratic aspect, fruit of effort, dedication, and individual capacity, is myopic to a deeper analysis of the mechanisms of knowledge production. The role of Science Education, in this scenario, would also be to develop new ways of seeing the world, and these could enrich the way in which subjects interpret the world and deal with the knowledge that Science produces. However, such aspects are often absent. A perspective that adopts elements of the new historiography of Science, as a social construction and notably influenced by external factors, would be of fundamental importance for a deeper understanding of the issue.

To value Science Education is also to be concerned with the process of transforming this reality. Using this means to provoke the exercise of consciousness about the world and, above all, about the relationships that take place in it, works as an alternative of interference in reality and provokes a reaction of conflict favorable to the condition of change. Within this context Freire (2000) claims a concern:

[...] are we being beings of pure adaptation to reality, mimetic or if, on the contrary, we are active, curious, capable of taking risks, transformers, we end up becoming able to intervene in the world, more than purely accommodate ourselves to it (FREIRE, 2000, p. 42).

In fact, many women have conquered and continue to conquer spaces in the scientific environment. However, this conquest is still insufficient, and the conquests are still far from being egalitarian. The understanding of the human capacity to be and, therefore, to intervene in the world expands the capacity to exercise citizenship. Making students aware of this problem, of understanding and trying to intervene in the historical context that points women as being of less importance, is an advance in the study and reflection of gender relations established in society and science.

In other justifications, a portion of the female undergraduates (9%) attributed the little participation of the female gender in the construction of the scientific environment to lack of interest, self-esteem, and boldness, as suggested by the reports:

Women have to stop having a vision that they are inferior or incapable, there are brilliant women in the most diverse areas performing with excellence, I think that each one has to show her intelligence and potential in what she does. (EM16, 2015).

There is a lack of pulse. Men are braver than women, however, women have the same capacity as men, even in the "think-act" they can be faster and more agile. (EM63, 2015).

The lack of boldness of many of them leaves the quantity, and consequently the quality of many women who are capable of having an active participation in the intellectual production to be desired. (EM93, 2015).

Indeed, many women may feel unmotivated for the academy or for some specific courses. However, attributing this demotivation to women as individuals is again falling into the meritocratic fallacy. Just as Rodrigues and Guimarães (2016) propose, understanding science as a social enterprise, conducted by people, who are social beings and that, therefore, the knowledge produced is influenced by social values and pressures, helps to understand that this demotivation or lack of boldness would not be the result of individual issues, but socially imposed places. According to Bandeira:

In other words, the process of distancing women from science begins in socialization, as they are directed to so-called "feminine" activities, prolonged in the sequence of life by the difficulties and constraints that arise in the choices between family, maternity, and professional career. (BANDEIRA, 2008, p. 220)

Among the research participants, 3% of them disagree that currently most of the intellectual production is done by men, believing that in science, women have already managed to place themselves in a situation of equality. Despite the exclusionary mechanisms, it is worth pointing out that women have always been present in the production of knowledge. However, despite this presence and the growth of female scientific production, some data reveal that equality is not real, indicating that such a point of view would be incongruous.

The last question presented brings up a central aspect in the research: has the prejudice for the feminine gender in the university been overcome? More than a third of men (34%) and a smaller portion of women (23%) believe that gender prejudice does not exist at the university. Among men, the smallest portion (28%) has a view of the persistence of this prejudice, while for women this number is higher (49%). The highest percentage of men (38%) and 28% of women believe that the gender issue has been partially overcome.

The results point to a scenario that divides opinions. Despite the growth of equality movements and even the change in some of society's postures (for example, recently, the female researcher mother has the period of scientific production related to maternity rewarded for the evaluation of funding projects), it can be noticed that the academic student environment itself presents difficulties for a more detailed analysis of the theme. At the same time, scientifically problematizing these differences is a scientific posture of openness to debate, a fundamental part of the (re)construction of more egalitarian values.

4 Conclusion

Since society is built on a patriarchal model, the discouragement of women to occupy the same space as men starts in the family. In such a way, many human endeavors, science among them, were constructed as being specifically masculine. Despite the equality advance originated mainly from the feminist movement, the research data show that the gender issue is not something superficial and is far from being overcome. Many explanations reveal conceptions that are still little problematized, even among higher education students. Among them is the attribution of social differences between genders only to personal aspects and individual merit, ignoring a historical and cultural construction.

Naive visions, which often reinforce stereotypes and prejudices, are still used by both men and women to justify differences in both academic choice and performance. Although women, being more immersed in these situations, are able to recognize and problematize them to a greater extent, the discussion of gender relations on a scientific basis is still incipient.

Such visions may unfold in discrimination attitudes that act in the maintenance of the status quo in force, because they hinder some tasks, especially in the scientific field. Abandoning understandings and practices of a patriarchal society is not simple or natural. It would require a critical analysis and problematization of the means of production and division of labor, as well as of behaviors and attitudes throughout life. It is argued that school education, not exclusively, but mainly higher education, regardless of the area of training, needs to direct more efforts in this direction.

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