



# Ethnic-Racial Relationships among Pre-Service Biology Teachers in a Brazilian University

## Relaciones étnico-raciales entre profesores de biología en formación en una universidad brasileña

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### Abstract:

Aiming at a historical recovery of racial inequalities caused by black slavery, the Brazilian State instituted affirmative action policies, including racial quotas, which were approved at the University of São Paulo only in 2017, after several attempts by the black movement in the State of São Paulo. One of the challenges is to comply with the Law 10.639 / 03 and its application in the initial teacher education programs. This study corresponds to a case study that aims to investigate difficulties faced by biology students from the College of Philosophy, Science and Literature at the University of São Paulo, who developed a seminar about the contributions of the African people descendants in scientific development for a course of the first semester of the program. The data were obtained by participant observation and application of a questionnaire, analyzed qualitatively. Results showed that difficulties faced by students to reach the objectives of the course are related to the processes of epistemicide in the curriculum, to the program's academic offer and to institutional racism.

**Keywords:** Ethnic-racial, racism, epistemicide.

### Resumen:

*Con el objeto de lograr una disminución de las desigualdades raciales causadas por la esclavitud de personas de raza negra, el estado brasileño instituyó políticas de acción afirmativa, incluyendo cuotas raciales, las cuales fueron aprobadas en la Universidad de São Paulo apenas en 2017, después de varios intentos del movimiento negro en el Estado de São Paulo. Uno de los retos es acatar la ley 10.639 /03 y su aplicación en los programas de educación inicial de profesores. Este estudio presenta los resultados de un caso de estudio que busca investigar las dificultades que enfrentaron los estudiantes de biología de la Facultad de Filosofía, Ciencia y Literatura de la Universidad de São Paulo que desarrollaron un seminario sobre la contribución de los afro-descendientes en el desarrollo científico para una asignatura del primer semestre del programa. Los datos fueron obtenidos mediante observación participante y la aplicación de un cuestionario, el cual fue analizado de manera cualitativa. Los resultados muestran que las dificultades que enfrentaron los estudiantes para alcanzar los objetivos del curso se relacionan con los procesos de epistemicidio en el currículum, con la oferta académica del programa y con el racismo institucionalizado.*

**Palabras clave:** Étnico-racial, racismo, epistemicidio.

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## ***Introduction***

Brazil is a country characterized by strong racial and, consequently, social inequality. In this way, the actual Constitution dated from 1988 was a milestone, because it was guided by the search for the fulfillment of the condition of a democratic State of Law, with an emphasis on citizenship and the dignity of the human person. However, the structural and institutional racism persists in Brazilian society, which limits the access and permanence of the black population to educational institutions.

According to Henriques (2001), the average level of education between whites and blacks increased between 1929 and 1974, but the difference in schooling years remains stable across generations, illustrating the persistence of racism. Data from 2001 show that the educational gap among youths

remained. That year, a 25-year-old white boy had, on average, 2-3 more years of study than a black boy of the same age. This intensity of racial discrimination is the same experienced by the parents of these young people, and the same observed among their grandparents.

From this historical context, and from the demands of the black population, the need for positive intervention and a commitment to guarantee basic human rights is emphasized. Thus, by recognizing the history of the enslavement of the black population in Brazil, its consequences, the disparities between whites and blacks in our society, and the exhaustive struggle of the Black Movement, Brazilian legislation provides instruments for historical reparation in various sectors aiming to decrease racial



discrimination and its consequences towards the black population.

In the field of education, Law 10.639 was enacted in 2003, which modified the Law of Guidelines and Bases (Law 9.394 of 20 November 1996), making it mandatory to teach the history of Africa and Africans in the elementary and middle school curricula. The implementation of this law was an important step to properly recognize the contribution of blacks in the construction of the country. This recognition is based on the demand for respect and appreciation of the history, struggle and resistance of Africans and Afro-descendants, as well as the questioning of ethnic-racial relations based on inequalities and prejudices. Furthermore, law 10.639 / 03 becomes essential for the formation of citizens who become aware of and develop ethnic-racial belonging and identity (Lei 10.639, 2003).

To add to the scarce repertoire of anti-racist laws, Law 12.288 / 2010 came into force in 2010 and instituted the Racial Equality Statute, whose main objective is to guarantee the black population equal opportunities and

rights, which are included in political, economic, business, cultural, sports and educational areas. Under a more specific approach in the educational scope, Art. 13, item III, determines:

The federal executive branch, through the competent bodies, will encourage public and private higher education institutions, without prejudice to the legislation in force, to incorporate into the curricular matrices of teacher training courses themes that include values concerning the ethnic and cultural plurality of Brazilian society.

Along the same line of inclusion, not only from the history of blacks at different levels of education but also from the individuals themselves, in August 2012, the Higher Education Quotas Law (law 12.711 / 2012) was enacted. This event decrees that in federal higher education institutions, 50% of the vacancies in the courses will be destined to students who have fully attended high school in a public school, and within this percentage vacancies will be reserved for self-declared browns (mixed race), blacks or



indigenous people in proportion to the number of individuals included in these criteria in the respective Federation units (Lei 12.711, 2012). As a result of this law, between the years 2016 and 2018 there was an increase in the proportion of 18-24 years old black students attending higher education. This proportion went from 50.5% to 55.6%. Despite this, a large discrepancy is still observed when compared to 78.8% of white students in the same age group attending higher education (IBGE, 2019).

In the context of the University of São Paulo (USP), a state university, the struggle for racial quotas for admission dates back to the years of the creation of the Black Consciousness Nucleus in the late 1980s. In turn, the pioneering universities in implementing racial quotas were the State University of Rio de Janeiro (UERJ) in 2003, and the University of Brasilia (UnB) in 2002. In 2006, the University of São Paulo Social Inclusion Program (INCLUSP) was implemented, which consisted of a bonus increase system -from 5% to 15%, in the results of candidates from public schools. In 2012, data from

the University Foundation for the University Entrance Examination at USP (FUVEST) shows that 28% of those enrolled came from public schools, but browns, blacks and indigenous people represented only 14% of those enrolled. Thus, it was observed that guaranteeing the access of students graduating from public school does not guarantee, by itself, a greater representation of the brown, black and indigenous group (PPI) within the university's student body. After much struggle by the black movement in the state of São Paulo, only in 2017, years after other public higher education institutions, the University of São Paulo (USP) approved the system of social and racial quotas, for students who met the criteria from the 2018 entrance exam (Pacheco & Silva, 2007; FUVEST, 2018).

Despite all these affirmative action policies carried out over the years by the government, current data shows that the goal has not yet been reached, since the black population remains in a situation of marginalization and it is far from being fully inserted in the education systems. Data from the Brazilian Institute of Geography and Statistics





(IBGE) from 2018 show that 3.9% of white people aged 15 and over were illiterate, and this percentage rises to 9.1% among people of black or brown color. In the group aged over 60 years, the illiteracy rate reaches 10.3% among whites, while it increases to 27.5% among black or brown people. As for the years of study of individuals over 25, the average was 9.3 years; 10.3 years of study for white people and 8.4 years for black or brown people. Among white people, 90.4% were in adequate grade according to their age and, among black women this rate was 84.5% (IBGE, 2018).

According to the Racial Equality Statute, affirmative policies, in addition to mitigating material and social damage, demand that the State and society take measures to repair psychological, political and educational damages. Under this precept, it is understood that universities, in addition to guaranteeing the access of black and indigenous students, should take measures to welcome and promote belonging at the university level of these students. In this sense, it is understood that the revisiting of the curricula of courses and

programs academic offer is essential in this process, and; therefore, the enforcement of laws 10.639 / 03 and 12.288 / 10 (Lei 10.639, 2003; Lei 12.288, 2010).

Within the scenario of science education, Silva (2009) affirms the role of curricular components in promoting ethical social relations among students; still, ethnic-racial diversity does not yet occupy a central place in the training of teachers in the area. According to Verrangia and Silva (2010), the articulation between the education of ethnic-racial relations and science teaching has the potential to enable educational processes committed to citizenship and to the human rights guaranteed by law. Believing in this potentiality, and in the need to face the challenges of the education of ethnic-racial relations in teachers' training, this work aims to investigate through participant observation and the application of a questionnaire, the challenges faced by students in the USP-RP Biology teachers' course in the process of building the seminar entitled "The African people and the black diaspora in world scientific development" within a



transdisciplinary course of the core curriculum of the degree.

## **| Methods**

To explore the development and articulation process between science education and the education of ethnic-racial relations in a Brazilian university, a specific case was selected, expecting to get a greater detail of the data and greater proximity to the subjects. This study is characterized as a case study. According to Ventura (2007), this is a research methodology that consists of choosing a defined study object, which uses an investigation of a specific, delimited and contextualized case.

The first step was the choice and delimitation of the case unit. Research was carried out in the Biological Sciences Degree course at the Faculty of Philosophy, Sciences and Letters of Ribeirão Preto, University of São Paulo (FFCLRP-USP). It is worth mentioning that this case unit comes from an interesting context, as described above, because this is the third year of racial quotas at USP, and the entry of black students at the

institution brings a positive scenery for an ethnic-racial diversity in the student body, in addition to expanding or obtaining epistemic gains, since people who experience life and the world under other ethnic-racial prisms and realities produce innovative knowledge.

The course Integrated Seminars is offered in the first semester of the degree and it consists of setting up seminars on different topics. According to the discipline's plan, its main objectives are: (1) to familiarize students with the bibliography and literature search platforms and mechanisms, (2) to create efficient ways of transmitting the seminar theme to the class, and (3) to integrate the theme and concepts of the seminar with the contents of different undergraduate subjects (Júpiter, 2019). Through these objectives, this course presents itself as ideal for a panorama analysis of ethnic-racial discussions in higher education and that is the reason why it was chosen as the context of the case study in question.

To promote belonging among the black students in the class, the professor, together with members



of the Black Collective USP-RP, proposed the construction of a seminar with an ethnic-racial theme, titled “The African people and the black diaspora in world scientific development”. The group of students who chose to participate in this theme was composed of six racial

and ethnicity self-reported as black and white students, coming from public and private schools, from the external transfer, who entered by the Unified Selection System (SISU) or from the University Foundation for the University Entrance Examination of USP (FUVEST) (Table 1).

Table 1

*System of admission at University of São Paulo and racial-ethnic self-reported identity of the students*

Students	Type of University Admission System	Self-identified race/ethnicity
Student G	FUVEST <sup>1</sup>	Black
Student B	FUVEST <sup>1</sup>	White
Student J	FUVEST <sup>1</sup>	White
Student K	SISU <sup>2</sup>	Black
Student L	External transfer exam <sup>3</sup>	White
Student P	SISU <sup>2</sup>	“Pardo” (brown-skinned)

*Modes to admission at University of São Paulo (USP): <sup>1</sup>exam by FUVEST (University Foundation for the exam of admission to USP), <sup>2</sup>approval in SISU (Unified Selection System for admission in public universities according to grades of ENEM - National High School Exam) or <sup>3</sup>exam for a external transference, when a student comes from another university.*

Data collection was carried out through participant observation by the first author of this study, who acted as a monitor for the construction of the seminar and subsequent application of a

questionnaire to students. According to Correia (2009), participant observation is performed with the researcher as a research instrument, maintaining direct, frequent and prolonged contact with social



subjects in their contexts. This methodology was used to enrich the work and help with quantitative analysis, since the participating observer as a monitor had wide access to the discussions about the theme. Speeches and expressions were recorded to add to the answers to the questionnaire, and in order to support reflections coming from the results obtained. The contact with the group of students, monitors and professor responsible for the construction of the seminar took place on Fridays, from February 18th to June 29th, 2019.

The questionnaire aimed to elucidate the processes and dynamics during the construction of the seminar, to understand the students' perception of the paths taken and the evaluation of their performance in the discipline, to understand their justifications regarding the difficulties and the fulfillment, or not, of the objectives. The questions were made available in a digital form during one month to facilitate the access of the students. The system of open questions was chosen to allow the students feel comfortable to answer, in order to lessen the influence of

the monitor and professor as much as possible. The students were asked the following questions:

1. Do you consider that you have fulfilled each of the listed course objectives? Justify your answer for each of these goals.
2. Assign to each of these objectives the degree of difficulty encountered - no difficulty, low difficulty, medium difficulty, high difficulty and I was unable to achieve the objective.
3. In your opinion, which were your difficulties in the course?

Finally, after all the answers had been collected, they were analyzed qualitatively to dialogue with observations made by the monitor during the process of building the seminar. The qualitative approach employed here follows characteristics listed by Godoy (1995, p. 62), such as: the natural environment as a direct source of data, the researcher as a fundamental instrument, the descriptive character, the meaning that people give to things and their life as a researcher's concern; inductive focus. In this perspective,





the context in which a phenomenon is part and occurs is of fundamental importance for integrative understanding, considering the different parts and points of view involved in it (Godoy, 1995).

## **|Results**

The results were obtained by participant observation during the monitoring and presentation of the seminar, and the application of a questionnaire answered by students in the group responsible for building the seminar on the theme. These results were interpreted to point out the central difficulties of the students and how these difficulties reflect on the processes experienced by the students in the course.

In the first monitoring, students were introduced to the theme and studied the literature. First, they used the scientific platforms indicated in the course and there was a scarcity of sources on the subject. Subsequently, the students realized that the few materials they had found were linked to the Nuclei of Afro-Brazilian Studies (NEAB). When reading the NEAB's productions, the students discovered the existence

of the Brazilian Association of Black Researchers (ABPN), and it is noticeable in the speech of these students a certain surprise regarding the existence of so much research produced by black people. This is clear in the following transcript:

Student G: "I have never imagined coming across so much research written by blacks, let alone imagine the existence of an association that organizes publications on the racial theme and of several black people!"

From this new context, the difficulty was to find research on ethnic-racial discussions related to the development of the sciences, specifically the biological sciences. In this sense, one of the most important references for the construction of the work was the book "Geniuses of Humanity: Science, Technology and African and Afro-descendant Innovation" by historian Carlos Eduardo Dias Machado. According to the students, direct contact with the author of the book during a short course entitled "African, Afro-descendant Science, Technology and Innovation" offered at the Social Service of Commerce (SESC)



was also essential in the process of building the seminar. The group was mobilized, so that at least one member was present on Fridays in the course.

The short course was striking and it aroused many reactions in the students, the first of which was the identification and verbalization of the fact that students never had black teachers during basic education and there in the mini-course for the first time students had the experience of having a black man sharing knowledge like a teacher inside the classroom. Upon noticing this fact, the students also reported a feeling of sadness that can be seen in the dialogue between two students after the days of the mini-course:

Student B: “Did you catch it? He graduated from USP! Have you ever had a class with a black teacher in your life?”

Student J: “Wow! I have never thought, but it’s true. I have never had a black teacher.”

Student K: “Yes ... I’m happy for the short course and sad to think about it...”

These speeches, as well as the students’ efforts in the thorough and attentive search for sources and platforms for the dissemination of research on the theme, are reflected in the degree of difficulty attributed by the students to fulfill the first objective of the discipline – to familiarize the students with the platforms and search engines for bibliography and literature. Five of the students considered it highly difficult to achieve this objective and one student considered it of medium difficulty. When compared to other answers about the degree of difficulty in achieving the objectives, this was the most cohesive answer and was pointed out as having a high degree of difficulty. Despite this, students say they performed well and were able to overcome the difficulty of finding sources and using research platforms that they had never been in contact before.

This agreement can be interpreted as an indication of what the group of students considered the greatest difficulty, which is corroborated by the answers to the open question - In your opinion, which were your difficulties in the discipline?



Everyone cites the difficulty of finding sources as the greatest difficulty faced. It is interesting that even having the opportunity to report more than one difficulty, five of the students use the term ‘sources’ to answer and do not develop the answer by citing other difficulties, which reinforces how remarkable and difficult this obstacle is to overcome. The students considered in their reports that the sum of the group’s efforts to access some type of reliable source and possible to be validated by the teachers was embarrassing when put in front of the ease reported by their classmates from other thematic groups, generating feelings of exhaustion and willingness to give up the group’s theme, as exemplified in the excerpts below:

Student L: “I’m tired of searching and finding nothing, can I still change the theme?”

Student B: “Almost everyone is already finishing their seminars and we can’t even find the references to read.”

Student J: “My classmate and roommate typed her theme on Google, you know on normal

Google? And I don’t know how many millions of results, while we can’t find anything that can be considered reliable.”

The responses about the objective 2 -efficiently transmitting the concepts and theme to the class- showed that students generally consider that they have fulfilled the objective (five students considered fulfilling the objective and one student partially fulfilling it). They state that they spent a lot of time rehearsing the seminar’s preliminary and final presentation, also affirming their care and dedication in making the specific terms of the theme clearer and easier to understand, since the topic is new and unknown within the course by teachers and students. The students’ statements expose the feeling of anxiety and nervousness for the presentations and fear of being misunderstood for dealing with a subject not addressed within the institution.

Still on the questions related to objective 2, the issue of language and discourse was a debate constantly taken by students, professor and monitors during the monitoring meetings. There were days dedicated



to rehearsing the presentation and various approaches of the speech were debated as the use of the terms “tribes”, “villages”, “primitive” and “rudimentary”, used historically to deny the greatness and importance of African empires and with worthy judges attributed to knowledge and constructions made by African and diasporic black people. After the preview of the seminar, the students brought a concern to the monitoring regarding the speeches of the people who watched the presentation of the preview of the seminar, some of them transcribed below:

Student B: “The doctoral student commented like this ... So if the researcher is racist, do we have to disregard all the knowledge he produced?”

Student J: “Sad, the teachers saying it was just the thought of the time.”

Student K: “How can she say she doesn’t see color, believe that it is not relevant and think that it does not interfere in the performance of people in college? I am black and I feel the negative effects of it every day... How can she deny it?”

Student P: “And the other one who said that the racial problem should not be the focus because it is a problem that originates from capitalism, I wanted to know how she came to this conclusion.”

Regarding the degree of difficulty, five students attributed a medium difficulty to achieve this objective and one considered it of low difficulty.

About the objective 3 -to integrate the theme and concepts of the seminar with the contents of different disciplines of the undergraduate course- four students considered that they had met the objective; one student considered that they had partially met it, and one student considered that they had not met this objective. Regarding the degree of difficulty to fulfill objective 3 of the discipline, two students considered it a low difficulty, two as medium difficulty, one as high difficulty, and one as an unfulfilled objective. For these questions in the questionnaire, there was the greatest disagreement between the answers. Students who considered having met or





partially fulfilled objective 3, justify that the integration of the seminar theme with other courses in the degree was possible because the group generally explored scientific racism and epistemicide within the biological sciences. This is similar to the response of the student who considered that he had not fulfilled the objective, whose justification was that it was not possible due to the theme not being worked on in other courses in the degree.

## **| Discussion**

Related to the first objective, which the majority of the students pointed out as the biggest difficulty - to locate sources about the seminar's theme -, we focus on reflecting on the impact of epistemicide. It is a concept defined by Boaventura Sousa Santos (1999) as an effective and lasting instrument of ethnic-racial domination that delegitimizes the forms of knowledge produced by the dominated groups; thus, untying those belonging to these groups of knowledge subjects. In addition to the annulment and disqualification of the form and production of knowledge of the subjugated peoples, Carneiro

(2005) states that the production of intellectual inferiority or the denial of the possibility of realizing intellectual capacities constitutes the technology for consolidating the racial hierarchies produced by the foundations of the device of biopower in force in the country, which education collaborates to maintain within its institutions, a process linked to the concept of institutional racism.

Bishop (1983) and Carneiro (2005) consider that the educational system contributes in an invaluable way to the consolidation and maintenance of historically constructed racial hierarchies, supported on the annihilation of cognitive and intellectual capacities through the devaluation, denial or concealment of the contributions of African peoples and the black diaspora for the cultural heritage of humanity. Added to this, there is the imposition of cultural whitening, resulting in low self-esteem, repression of creativity, and denial of the right to memory and identity, which consequently lead to failure and school dropout for black students. Besides, there is the exclusion of educational opportunities, which are



the most important drivers for social mobility in the country.

In this way, we can reflect on this structuring instrument for all social sectors, including educational institutions. Students referred that not ‘finding sources or references’ was identified as the greatest barrier/difficulty faced by the group in addressing African and Black Diaspora knowledge. This situation helps us to understand the role of education as an instrument for maintaining established racial hierarchies.

According to Santos (2010) these factors can give us some explanation about the lack of knowledge about the Law 10.639 / 03 in educational institutions. In his study, he reveals that the vast majority of the target audience (teachers, staff and students) did not know the law or had only vaguely heard about the subject, while a large part of the research participants commented that in Brazil this law is not generally enforced.

According to Motokane and Barbara (2019), a content analysis of the menu of 12 compulsory pedagogical

disciplines offered by the Biological Sciences Degree course at FFCLRP-USP showed that the terms “ethnic-racial”, “Afro-Brazilian”, “African”, “Black”, “race”, “ethnicity”, “racial”, “Africa”, “racism”, “afro-descendant”, “Law 10.639 / 03” and “whitening” were not found in the abstracts and bibliographies of the courses. This connotes a deficiency in the curriculum chosen for subsidizing the training of teachers to address the theme; thus, configuring an agreement with the epistemicide movement of non-Eurocentric knowledge. In this context, we can understand the student who considered partially fulfilling objective 2, justifying the concern with his speech at the seminar to have been misunderstood by the lack of knowledge of people in the class and teachers about the theme.

The field of discourse is important for the formation of students’ identity and for society’s imaginary about cultures and symbols. According to the students’ reports, these statements caused a feeling of a devaluation of the bodies of black students present in the group and



their experiences. In line with what Mbembe (2011) says, the attempt to universalize reason, bodies and knowledge, it is a universalization of the white man's model, which ends up denying or canceling the experiences of the black body.

The students' responses regarding the fulfillment of objective 3 reinforce the dimension of epistemicide, and the understanding of educational institutions as maintainers of racial hierarchies. Students started from the point of not addressing the theme in the undergraduate course, as a way to justify their answers. They made an association between the absence of this theme in all courses of the degree and the final part of the seminar, where they questioned the erasure of the African and Diaspora contribution to the development of science, and traced a line that explained the stages of racism in Brazil and the path of epistemicide. Thus, the verification of the reality addressed in the work was the link that led them to say that objective 3 had been fulfilled. In this sense, we confirm the epistemicide as a point of tension to think about the urgency

in complying with Law 10.639 / 03 and applying its guidelines.

## **| Conclusions**

The difficulties faced by undergraduate teacher's Biology students at FFCLRP / USP-RP, when developing a seminar on the contributions of the African and Black Diaspora people in scientific development, are intrinsically related to the process of epistemicide of subjugated peoples, and to the reproduction of institutional racism in educational institutions acting in the maintenance of racial hierarchies.

Another relevant factor is the feelings experienced by these students, among them the desire to give up the theme of the seminar, anxiety and nervousness during the communication and transmission of the theme, and fear of being misunderstood. All this highlights the need to seek measures to make students feel comfortable while addressing ethnic-racial relations during their initial teacher training.

Also, this case reveals that after sixteen years of the existence of



Law 10.639/03, its guidelines remain ignored for the academic offer of the degree in Biological Sciences at FFCLRP / USP-RP. Therefore, in order to reduce the consequences of colonization in our country, teacher

training must assume an ethical and legal commitment to re-educate for ethnic-racial relations, in the search for a more civic school education aiming at a less unequal society.

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