Publication status: Not informed by the submitting author

VALIDATION STUDY OF A RACIAL EQUITY SCALE FOR TEACHERS

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https://doi.org/10.1590/SciELOPreprints.9805

Submitted on: 2024-09-10
Posted on: 2024-09-11 (version 1)
(YYYY-MM-DD)

ESTUDO DE VALIDAÇÃO DE UMA ESCALA DE EQUIDADE RACIAL PARA PROFESSORES

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RESUMO: Embora a desigualdade racial seja uma realidade disseminada na educação básica brasileira, poucos estudos investigam os fatores escolares que perpetuam essas disparidades. Este artigo busca preencher essa lacuna ao avaliar as propriedades psicométricas da Escala de Equidade Racial nas Escolas (RESS), desenvolvida para medir o papel das escolas e dos professores na promoção da equidade racial. A RESS, composta por 13 questões que abordam tanto sistemas de equidade em nível escolar quanto práticas em sala de aula, foi aplicada a 159 professores do quinto ano da rede pública municipal do Rio de Janeiro. A análise revelou alta consistência interna da escala (Alfa de Cronbach = 0,8498). Embora sejam necessárias pesquisas adicionais de validação, o estudo sugere que a RESS tem o potencial de se tornar uma ferramenta valiosa para avaliar a equidade racial nas escolas, oferecendo uma compreensão aprofundada das práticas institucionais e dos comportamentos dos professores. O estudo também identifica uma correlação entre um status socioeconômico mais baixo e a menor promoção da equidade racial, ressaltando a necessidade de iniciativas direcionadas para enfrentar as desigualdades educacionais.

Palavras-chave: equidade racial, professores, desenvolvimento de escala, educação brasileira, psicometria.

VALIDATION STUDY OF A RACIAL EQUITY SCALE FOR TEACHERS

ABSTRACT: Despite pervasive racial inequality in Brazilian elementary education, there are few studies that examine the factors within schools that perpetuate these disparities. This paper aims to address this gap by assessing the psychometric properties of the Racial Equity in Schools Scale (RESS), designed by the authors to measure the roles of schools and teachers in promoting racial equity. Administered to 159 fifth-grade teachers in the Rio de Janeiro municipal public school system, the RESS consists of 13 questions covering school-wide equity systems and classroom practices. The analysis indicates that the scale has high internal consistency (Cronbach's Alpha = 0.8498). While further validation research is necessary, the current study suggests that the RESS has the potential to

be a valuable tool for evaluating racial equity in schools, providing insights into both institutional practices and individual teacher behaviors. Additionally, it underscores the correlation between lower socioeconomic status and reduced promotion of racial equity, emphasizing the need for targeted interventions to address educational inequities.

Keywords: racial equity, teachers, scale development, Brazilian education, psychometrics.

INTRODUCTION

Despite significant racial inequality in the educational outcomes of Brazilian elementary school students, few studies examine the intra-school factors perpetuating existing inequalities from outside the school environment. An important hindrance to analyzing the actions taken within the school environment to reduce racial inequalities is the lack of reliable measures of racial interactions. There is a significant gap in the empirical development and testing of existing organizational assessments that measure racism and equity (LoCurto et al. 2024).

To be effective, survey scores must be validated, providing the psychometric properties of validity, reliability, and sensitivity (Perrot, Bataille, and Hardouin 2018; LoCurto et al. 2024). This study aims to fill the existing gap in the literature by analyzing the psychometric qualities of the Racial Equity in Schools Scale (RESS), designed to evaluate the extent to which schools and teachers promote racial equity and awareness within educational settings.

The RESS survey consists of 13 questions divided into two blocks: one assessing the school's racial equity and response systems and the other evaluating teachers' promotion of racial awareness and equity in the classroom. It was administered to 159 fifth-grade elementary school teachers in Rio de Janeiro, Brazil. The RESS demonstrates high internal consistency, with a Cronbach's Alpha of 0.8498. The analysis of the dimensions within the RESS indicates that schools and teachers have different approaches to racial equity, as the school and teacher dimensions are not highly correlated.

Our analysis of the relationship between the RESS and student characteristics reveals a positive correlation between the presence of black and brown students and the promotion of racial equity, yet raises concerns about the impact of socioeconomic status[1]. Lower socioeconomic status, university aspirations, and parental education correlate with less promotion of racial equity, potentially exacerbating inequitable performance distribution in the education system. This suggests that more

[1] The Black race includes both Blacks and Browns. We use an uppercase letter to highlight this difference when dealing with the Black race. We will use lowercase letters when dealing with the groups that compose it: Blacks and Browns.

vulnerable students are in less equitable environments, highlighting a need for targeted interventions to promote equity across all student demographics.

1. LITERATURE REVIEW

1.1 Existing racial discrimination scales

Many studies have explored the measurement of racial attitudes and discrimination. While these scales aim to assess attitudes related to race and racism, using multidimensional structures to capture the complexity of these attitudes, they differ significantly in their specific measurement focus, structural complexity, theoretical frameworks, and the contexts in which they were developed and validated.

The Australian Racism, Acceptance, and Cultural-Ethnocentrism Scale (RACES), for example, is designed to assess the effectiveness of interventions to reduce community levels of racism and, in turn, inequities in health outcomes within Australia. RACES is a 24-item measure that assesses three dimensions: Accepting Attitudes, Racist Attitudes, and Ethnocentric Attitudes (Grigg and Manderson 2016). Another relevant scale is the Race-related Attitudes and Multiculturalism Scale (RRAMS), which evaluates attitudes toward multiculturalism in Australia. RRAMS includes subscales for "Anglo-centric/Assimilationist" attitudes and "Inclusive/Pluralistic" attitudes (Haag et al. 2020).

The Color-Blind Racial Attitudes Scale (CoBRAS) also assesses perceptions and general attitudes related to racial equity. CoBRAS is designed to assess cognitive dimensions of color-blind racial attitudes, which refer to the belief that race should not and does not matter. The scale was developed to capture the denial of the existence of racism and racial privilege, which is related to greater levels of racial prejudice and a belief that society is just and fair (Neville et al. 2000).

The Anti-Racism Action Scale (ARAS) focuses on concrete actions rather than perceptions and general attitudes. It was developed to measure youth engagement in anti-racism actions and includes dimensions such as Interpersonal Action, Communal Action, and Political Change Action (Aldana, Bañales, and Richards-Schuster 2019). The scale focuses on actions that address racial bias and promote racial justice.

Despite their differences, several aspects of these scales relate to the conceptual development of RESS. For example, color-blind racial attitudes involve the denial or minimization of racial dynamics and the significance of race in society, including the denial of both ideological and structural racism (Keum et al. 2018). This perspective does not necessarily reflect a belief in racial superiority

but rather an unawareness or minimization of the existence of racism. This aligns with the theoretical underpinnings of RESS, as our scale investigates the prevalence of silence regarding racist incidents in educational settings. Moreover, RESS aims to illuminate the extent to which educational stakeholders acknowledge and incorporate diverse racial perspectives, thereby fostering an inclusive educational environment that values racial diversity.

1.2 Measures of racial discrimination in education

Considering the education setting, various scales and measures relate to assessing teachers' and teacher candidates' attitudes towards multiculturalism, cultural diversity, and their implementation of culturally responsive practices. Teachers play a crucial role in promoting racial equity within schools. Their attitudes and beliefs significantly influence how they address cultural diversity and implement anti-racist education in their classrooms (Starck et al. 2020; Hachfeld et al. 2011; Forrest, Lean, and Dunn 2016).

For example, the Teacher Cultural Beliefs Scale (TCBS) assesses teachers' multicultural and egalitarian beliefs about diversity (Hachfeld et al. 2011). The scale consists of ten items and, according to Hachfeld et al. (2011), can effectively distinguish between two types of beliefs—multiculturalism and egalitarianism—based on their different associations with specific psychological and behavioral outcomes, such as prejudices, motivation to control prejudiced behavior, attitudes toward pluralism and acculturation, and authoritarianism.

Similarly, the Multicultural Teacher Dispositions Scale (MTDS) evaluates teachers' dispositions toward multicultural education and equity. This scale measures teachers' inclinations to foster an inclusive and equitable learning environment for students from diverse cultural backgrounds. The scale serves as a tool for assessing the effectiveness of interventions to improve teachers' equity dispositions and culturally responsive practices (Jensen, Whiting, and Chapman 2018; Jensen et al. 2023).

The Learning to Teach for Social Justice-Beliefs (LTSJ-B) is a scale that specifically measures teachers' beliefs about teaching for social justice (Enterline et al. 2008). The LTSJ-B scale is one component of a broader set of surveys to explore the effects of teacher education and the process of learning to teach.

There are also observational measures to evaluate the sociocultural equity of classroom environments, such as the Assessing Classroom Sociocultural Equity Scale (ACSES). This scale

focuses on assessing how teachers incorporate sociocultural equity principles into their classroom practices, aiming to capture the extent to which teachers create inclusive and equitable learning environments, particularly for those students from diverse cultural and linguistic backgrounds (Franco, Bottiani, and Bradshaw 2023; Goldberg et al. 2023; Curenton et al. 2020).

While all these scales cover aspects of cultural responsiveness and social justice, they have significant differences. The TCBS and MTDS center more on individual teacher beliefs and attitudes, the LTSJ-B scale emphasizes broader social justice teaching practices, and the ACSES evaluates the overall school climate and its impact on students. Additionally, the TCBS, MTDS, and LTSJ-B scales are geared toward pre-service teachers, while the ACSES is designed for in-service teachers.

The Racial Equity in Schools Scale (RESS) relates to these scales as they all aim to evaluate aspects of educators' attitudes, beliefs, and practices related to cultural diversity, social justice, and equity in educational settings. However, they differ in focus, constructs, and application. RESS specifically targets racial equity in the school environment, emphasizing how schools and teachers address and promote racial awareness, equity, and the prevention of racial discrimination. Therefore, RESS complements the other scales by focusing on racial equity, a subset of broader cultural and social justice applying to the specific context of racial equity within schools. While TCBS and MTDS assess individual teacher beliefs, RESS evaluates their impact on school-wide systems and practices.

1.3 Scales on Racial Discrimination in Brazil

The Brazilian context has a complex interplay of race, class, and gender in shaping perceptions of discrimination (Layton and Smith 2017). Racial disparities in Brazilian education persist throughout the years (Marteleto and Dondero 2016), and are perpetuated by historical processes and institutionalized racial rules. These rules can be explicit, such as laws that enforced segregation, or implicit, like policies that indirectly disadvantage certain racial groups (Britto, Costa, and Waltenberg 2023).

Despite these challenges, there is a growing focus on measuring and addressing education inequalities in Brazil (Ernica, Rodrigues, and Soares 2024). Firpo, França, and Portella (2021) introduced the Racial Balance Index ("Índice de Equilíbrio Racial," IER) as a tool to monitor racial inequality in socioeconomic variables. They suggest that existing methods were not capturing the nuances of racial disparities across different contexts. The IER is calculated by comparing the

proportion of Black individuals in a specific subgroup to those of Black individuals over 30 years old in the region or state.

However, there is currently no known scale for evaluating the promotion of racial equity in Brazilian schools. Although many studies measure racial disparities in education, they often focus on some areas and fail to capture the complex nature of intra-school racial equity. This gap affects the ability to measure and address racial disparities in educational outcomes accurately.

Ação Educativa, with support from UNICEF and the Brazilian Ministry of Education, has developed the "Quality Indicators in Education," a self-assessment tool aimed at improving educational quality by involving the school community (Carreira and Souza 2013). These indicators are meant to help educators lead discussions in schools and classrooms and serve as the main inspiration for the design of RESS.

2. METHOD

2.1 Scale design

The survey application was part of a broader research project to analyze the impact of a growth mindset intervention on student outcomes. Within this larger research scope, we created the RESS (Racial Equity in Schools Scale), which consisted of thirteen questions covering topics such as the school's racial equity and response systems and teachers' promotion of racial awareness and equity in the classroom.

The questions listed in Table 1 were divided into two blocks: one for the school's questions and the other for the teachers. Participants were asked to provide Likert-type responses with four options: Disagree, Partially disagree, Agree, and Totally agree.

Table 1: Questions from the RESS survey

Block 1: School's Racial Equity and Response Systems
Q1: My school has a system for listening, recording, and forwarding complaints of racial discrimination.
Q2: My school has training and reflections on racial issues and how they affect student learning and performance.
Q3: My school has strategies for preventing and identifying racial discrimination.

Block 2: Teachers' Promotion of Racial Awareness and Equity in the Classroom
Q4: When faced with swearing, jokes, and pejorative nicknames, I immediately repress the aggressors.
Q5: When faced with situations of swearing, jokes, and pejorative nicknames, I use the situation to reflect with those involved on the causes of the situation and the responsibility of each person in the conflict.

Q6: When faced with situations of racial discrimination, my students are advised not to remain silent and to seek help from adults.
Q7: I research, inform myself, and exchange information with colleagues about how to address the issue of racial discrimination in my classes.
Q8: I promote students' exposure to images of black people with different aesthetics and in different social places.
Q9: I promote pedagogical actions to stimulate my students' critical thinking.
Q10: I promote pedagogical actions that value cultural productions such as capoeira and dance.
Q11: In school activities, I value black as much as other colors, not being cited as synonymous with dirtiness, evil, and other bad things.
Q12: I do not accept jokes, stories, children's songs, and others that devalue the Black population.
Q13: In my classroom, there are discussions about the meaning of racial belonging in Brazil.

The RESS scale was inspired by Carreira and Souza (2013) indicators for evaluating racial relations in schools to support educators in conducting discussions in school and the classroom. These indicators were developed for elementary schools in Brazil to support them in diagnosing problems and finding solutions to overcome racism in school life and implement Law no. 10,639/2003 (Brasil 2003).

The school racial relations indicators developed by Carreira and Souza (2013) are categorized into seven dimensions: 1) Relationships and attitudes; 2) Curriculum and pedagogical practice; 3) Resources and teaching materials; 4) Monitoring, permanence, and success of students at school; 5) The role of education professionals; 6) Democratic management; and 7) Beyond the school. All questions in the RESS were influenced by Dimension 1 of Carreira and Souza's indicators, which focus on relationships and attitudes within the school environment.

Questions 1 of Block 1, and 4 and 5 of Block 2 derive from the premise that immediate intervention is necessary against insults, jokes, and discriminatory nicknames. Questions 2 and 3 of Block 1, and 6 and 7 of Block 2 are modeled after the proposition that breaking the silence and changing perspectives is necessary to denaturalize racism. Questions 8, 9, and 10 of Block 2 are based on the presupposition that it is important to recognize Black aesthetics (beauty). Finally, questions 11, 12, and 13 of Block 2 are drawn from the argument that it is necessary to construct racial belonging positively.

2.2 Participants and procedure

The sample consists of 98 responding municipal schools in Rio de Janeiro with a total of 159 fifth-grade teachers and 176 classes. All Rio de Janeiro municipal schools with one or two fifth-grade

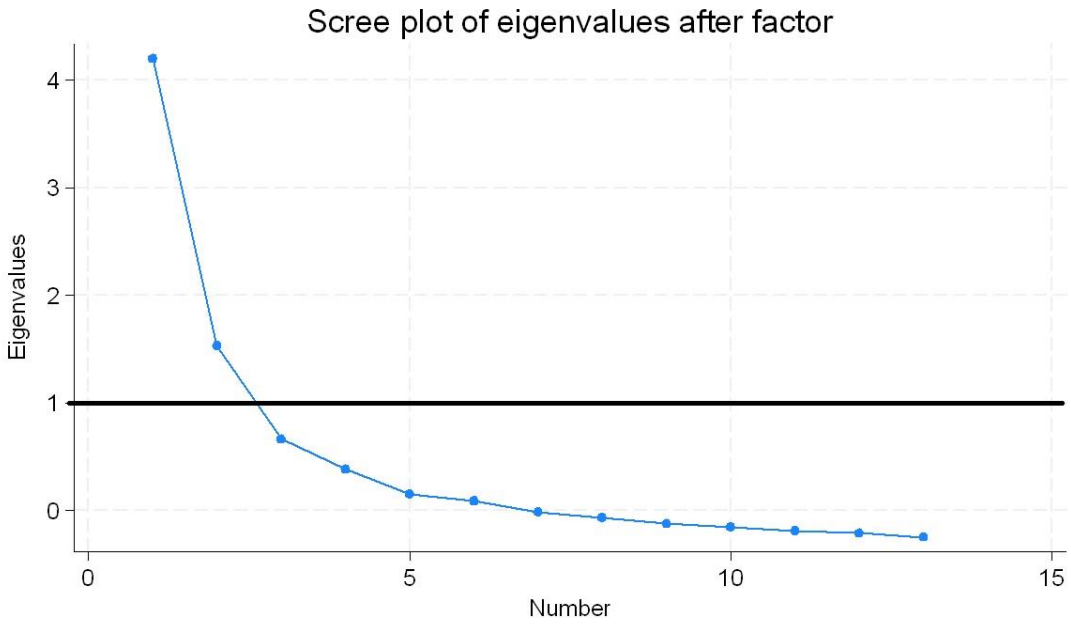
classes were invited to participate. The survey focused only on generalist teachers. It was conducted on paper between November and December 2021, spanning approximately 25 days. The research team contacted the sample schools, with support from the Rio de Janeiro Municipal Education Secretariat, which communicated to all schools about the application period of this research. All participants signed the Informed Consent Form before completing the questionnaires.

3. SCALE VALIDITY

3.1 Factorial structure

Since the RESS was conceptualized to measure two dimensions – the school's racial equity and response systems, present in Block 1, and teachers' promotion of racial awareness and equity in the classroom, in Block 2 – we initially ran an Exploratory Factor Analysis (EFA) to empirically test this assumption (i.e., that a two-factor solution would underlie the set of items) (Watkins 2018). As shown in Figure 1, the investigation of the Scree Plot corroborated with the theoretical choice of two factors.

Figure 1: Scree Plot



The next step consisted of evaluating factor loadings, representing the correlation between each variable and the factor. Columns 1 and 2 of Table 2 present the estimated factor loadings of the questions, and Column 3 shows the uniqueness of the questions. Results show that while Questions

4 to 13 clearly have higher loadings for factor 2 (>0.40), the difference between the loadings is not very different for Questions 1 to 3 – in particular, Questions 2 and 3 have loading above 0.40 for factor 2. In addition, Column 3 shows a worrisome statistic for Questions 12 and 13 – the proportion of the variance in the variable that is not explained by the factors, their uniqueness, is very high, equal to 0.729 and 0.760, respectively. Indicating, therefore, that such variables might be less useful in defining the factors.

Table 2: Exploratory factor analysis and Correlation matrix

Item	Factor loadings			Correlation Matrix	
	Factor 1 Estimate	Factor 2 Estimate	Uniqueness	School Dimension	Teachers Dimension
Question1	0.506	0.377	0.602	0.614	0.221
Question2	0.549	0.503	0.446	0.671	0.371
Question3	0.603	0.470	0.416	0.696	0.306
Question4	-0.394	0.600	0.484	0.146	0.526
Question5	-0.285	0.697	0.433	0.291	0.61
Question6	-0.346	0.596	0.525	0.15	0.531
Question7	0.007	0.718	0.485	0.406	0.639
Question8	0.010	0.679	0.539	0.249	0.652
Question9	-0.010	0.567	0.679	0.181	0.511
Question10	0.333	0.547	0.590	0.463	0.446
Question11	-0.299	0.577	0.578	0.133	0.546
Question12	-0.230	0.467	0.729	0.119	0.475
Question13	-0.035	0.488	0.760	0.159	0.488

3.2 Reliability

The RESS Cronbach's Alpha of 0.8498 indicates strong internal consistency, meaning the 13 items reliably measure the same concept. Figure 2 examines the relationship between the RESS's two dimensions (blocks of questions). The analysis finds that the school dimension (Block 1) and the teacher dimension (Block 2) are not highly correlated, suggesting that the ways schools and teachers approach racial equity might differ. Moreover, question 10 is more closely related to the school dimension than the teacher dimension.

In columns 4 and 5 of Table 2, we evaluated the convergent and divergent (discriminant) validities by analyzing a correlation matrix. This helps us understand how well each item correlates with the overall dimension to which it belongs. All questions have a correlation coefficient with the

score of their own dimension greater than 0.400, indicating good convergent validity. This demonstrates that the items effectively measure their intended construct.

Figure 2: Correlation between scores

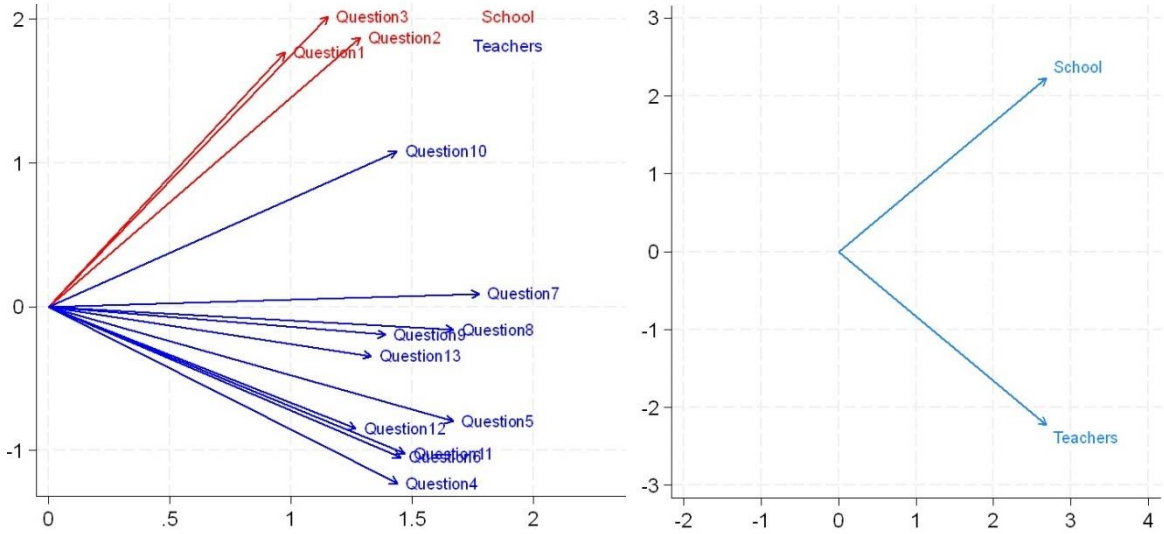


Table 3 displays the survey questions and the percentages of responses. The low percentage of unanswered questions indicates high teacher engagement. Loevinger's H Coefficient measures the consistency of each question with the overall questionnaire. Values above 0.3 are considered adequate, indicating good scalability. All items have coefficients above 0.3, showing that each question is consistent with the overall survey. The individual Hj coefficients are also significantly different from zero, further confirming the consistency of each question with the total scale. Loevinger's H is 0.64 for the school dimension, and for the teachers' dimension, it is 0.44. Both values indicate good consistency within their respective dimensions.

The "Alpha-item" column in Table 3 displays Cronbach's alpha if each item were to be removed. This analysis helps identify which questions contribute to or detract from the overall reliability. Finally, the Cronbach alpha for the school dimension is 0.81, and for the teachers' dimension, it is 0.85, indicating good reliability.

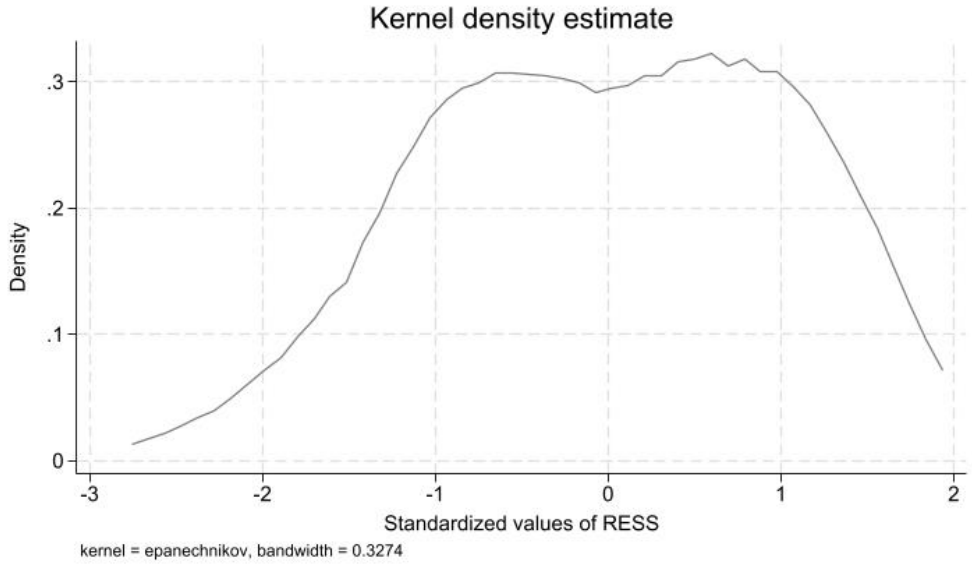
Table 3: Description of items

Item	Dimension	Missing data rate	N	Response categories				Alpha - item	Loevinger Hj Coefficient
				1: Disagree	2: Partially disagree	3: Agree	4: Totally agree		
Question 1	School	3.16%	153	19.61%	12.42%	50.98%	16.99%	0.79	0.61
Question 2	School	2.53%	154	13.64%	15.58%	45.45%	25.32%	0.73	0.63
Question 3	School	1.90%	155	9.03%	16.77%	47.74%	26.45%	0.71	0.66
Question 4	Teachers	1.90%	155	0.00%	1.29%	25.16%	73.55%	0.83	0.46
Question 5	Teachers	1.27%	156	0.00%	0.00%	32.69%	67.31%	0.82	0.55
Question 6	Teachers	1.27%	156	1.28%	1.92%	37.18%	59.62%	0.83	0.44
Question 7	Teachers	1.27%	156	0.00%	5.77%	50.00%	44.23%	0.83	0.52
Question 8	Teachers	1.27%	156	3.21%	5.77%	46.79%	44.23%	0.83	0.48
Question 9	Teachers	1.27%	156	8.33%	6.41%	46.79%	38.46%	0.84	0.41
Question 10	Teachers	1.90%	155	3.23%	10.32%	53.55%	32.90%	0.84	0.38
Question 11	Teachers	0.63%	157	1.27%	0.00%	24.84%	73.89%	0.83	0.48
Question 12	Teachers	0.63%	157	1.27%	1.27%	25.48%	71.97%	0.84	0.41
Question 13	Teachers	2.53%	154	3.25%	5.19%	39.61%	51.95%	0.84	0.39

4. SCALE PERFORMANCE IN SAMPLE ANALYSIS

The final version of RESS consists of 13 questions. Next, we calculate the scale itself, which refers to the standardized mean (mean zero and standard deviation one) of all racial equity questions in the school environment, including the two dimensions—the school's and the teachers' dimensions. Figure 3 shows the kernel density of the RESS. In this scale, the higher the value, the more consolidated the school's actions to reduce racial inequalities are.

Figure 3: Racial Equity in School Scale (RESS)



4.1 Scale robustness and consistency in the sample

We then examine the performance of the RESS in our sample. To start, we use regression model (1) to determine if the scale is influenced by the characteristics of the respondents and the researchers conducting the survey. For that, we include independent variables for the characteristics of the respondent teachers. Specifically, we examine the relationship between the RESS indicator and teacher characteristics. To assess the reliability of the nine researchers surveying Rio de Janeiro schools, we include factor variables for each. As presented in equation (1), we also incorporate controls for the class designation and the school location. In this equation, *t* represents teachers, and *s* represents schools. The standard errors are clustered at the school level.

(1) $$RESS_{ts} = \alpha + \beta_1 Teachergender_{ts} + \beta_2 Teacherage_{ts} + \beta_3 Teacherrace_{ts} + \beta_4 Teacherschoolinglevel_{ts} + \beta_5 Teachertenure_{ts} + \beta_6 Teacherteachesmorethanoneclass_{ts} + \beta_h Researcherh_{ts} + \beta_j Classdesignationj_{ts} + \beta_k RegionalCoordinationk_s + \varepsilon_s$$

Table 4 presents the descriptive statistics of the variables used in equation model (1). Table 5 presents the results of the estimated model. As shown in Table 4, 91.8% of the teachers are women, with a mean age of 47.35. Most teachers are non-white, with 17.7% black and 44.3% brown teachers. They have at least a university degree and an average experience of 17.54 years, and 13.9% teach in more than one fifth-grade class.

Table 4: Teacher characteristics in the sample

Teacher characteristics	*N*	*Mean*	*SD*	*Min*	*Max*
Gender = Men	158	0.082	0.276	0	1
Gender = Women	158	0.918	0.276	0	1
Age	158	47.353	10.533	27	71
Race = White	158	0.443	0.498	0	1
Race = "Pardo"	158	0.348	0.478	0	1
Race = Black	158	0.177	0.383	0	1
Race = Yellow / Indigenous / Not declared	158	0.032	0.176	0	1
Schooling level: High school	158	0.063	0.244	0	1
Schooling level: University degree	158	0.462	0.500	0	1
Schooling level: Post-graduation, Masters, Doctorate, or Other degree	158	0.475	0.501	0	1
Tenure (in months)	158	17.542	10.473	0.25	47
Lectures in more than one class	158	0.139	0.347	0	1

Table 5 shows whether there is any pattern relating the characteristics of teachers and of the researchers who administered the survey to the RESS responses. The first column of Table 5 displays the results from the estimation regression model (1). Column 2 presents the estimation focusing solely on the school dimension, while column 3 considers the teachers' dimension as the dependent variable. The RESS is robust to variations in teacher characteristics—that is, the answers are not significantly affected by most teacher characteristics. The only statistically significant variable is teachers' race – when the teacher declared to be yellow, Indigenous, or preferred not to declare, compared to white teachers. However, it is important to note that there were only five teachers in this category so that this significant result may be an error due to the small number of observations in this category.

Table 5: Scale Behavior for Teacher Characteristics and Researchers Reliability

	RESS	School Dimension	Teachers Dimension
Teacher characteristics:			
Gender = Women	0.116	0.077	0.014
	[0.263]	[0.255]	[0.154]
Age	0.000	0.009	-0.004
	[0.010]	[0.007]	[0.004]
Race = "Pardo"	-0.258	-0.233	-0.043
	[0.226]	[0.168]	[0.081]
Race = Black	-0.043	-0.222	0.082
	[0.249]	[0.180]	[0.103]
Race = Yellow / Indigenous / Not declared	0.279	0.529	-0.051
	[0.302]	[0.167]***	[0.133]
Schooling level: University degree	0.159	-0.148	0.167
	[0.397]	[0.231]	[0.158]
Schooling level: Post-graduation, Masters, Doctorate, or Other degree	0.043	-0.349	0.182
	[0.399]	[0.233]	[0.158]
Tenure (in months)	-0.006	-0.009	-0.001
	[0.010]	[0.007]	[0.004]
Lectures in more than one class	-0.131	-0.054	-0.053
	[0.270]	[0.170]	[0.112]
Researcher 1	0.044	-0.151	0.083
	[0.439]	[0.361]	[0.154]
Researcher 2	0.868	0.703	0.200
	[0.502]*	[0.350]**	[0.188]
Researcher 3	1.020	0.307	0.432
	[0.479]**	[0.425]	[0.177]**
Researcher 4	0.115	0.286	-0.067
	[0.352]	[0.335]	[0.111]
Researcher 5	0.378	0.204	0.124
	[0.402]	[0.347]	[0.149]
Researcher 6	0.674	0.190	0.292
	[0.549]	[0.452]	[0.219]
Researcher 7	1.263	0.637	0.493

	[0.623]**	[0.503]	[0.186]***
Researcher 8	0.499	0.204	0.176
	[0.567]	[0.465]	[0.221]
School location	Yes	Yes	Yes
Class designation	Yes	Yes	Yes
R^2	0.24	0.24	0.24
N	157	155	156

* $p < .1$; ** $p < .05$; *** $p < .01$

Notes: N refers to classes. Standard errors are clustered at the school level.

Table 5 also shows that the scale has good inter-rater reliability because there are only a few significant differences in the responses collected by the different survey researchers. The absence of significant patterns relating teacher characteristics and researchers with RESS results tells us about the scale's robustness because that means the responses to the survey do not reflect other teacher aspects but rather their promotion of racial awareness and equity in the classroom.

4.2 Statistical insights into scale behavior in the sample

According to Forrest, Lean, and Dunn (2016), there is variability in teachers' knowledge and implementation of multicultural education policies, which can be influenced by the demographic and socioeconomic characteristics of the schools and communities they serve. To test for that, we then analyze the behavior of RESS in the sample, considering the school location, the teacher's class, and the students' characteristics – as presented in equation (2). In this model, *i* refers to students, *c* to class, and *s* to school. We also include in our model factor variables for the 11 regional coordination units where the schools of the respondent teachers are distributed and variables for the class designation, the number of students in the fifth-grade class, and the student characteristics in these classes.

$$(2)\quad RESS_{cs} = \alpha + \beta_1 Studentgender_{ics} + \beta_2 Studentage_{ics} + \beta_3 Studentrace_{ics} + \beta_4 StudentSES_{ics} + \beta_5 Plangouniversity_{ics} + \beta_6 Motherknowshowread_{ics} + \beta_7 Seemotherreading_{ics} + \beta_8 Fatherknowshowread_{ics} + \beta_9 Seefatherreading_{ics} + \beta_n Mothereducationn_{ics} + \beta_m Fathereducationm_{ics} + \beta_{10} Numberofstudents_{cs} + \beta_j Classdesignationj_{cs} + \beta_k RegionalCoordinationk_s + \beta_h Researcherh_{ts} + \beta_y Teachercharacteristicsy_{cs} + \varepsilon_{cs}$$

Table 6 shows the descriptive statistics for student and class characteristics used in equation model (2). Fifth-grade students in our sample are, on average, 10.9 years old, with 23.5% being white. Most plan to attend university (77.5%), 86.8% see their mother, and 77.4% see their father reading. For the mother and father education level, there are many "don't know" or missing answers (56.3% for the mother education level and 63.5% for the father education level). Table 6 also shows that the fifth-grade classes in the sample have, on average, 23.9 students.

Table 6: Student and Class Characteristics in the Sample

	N	*Mean*	*SD*	*Min*	*Max*
Student characteristics:					
Gender = Boy	3959	0.516	0.500	0	1
Gender = Girl	3959	0.484	0.500	0	1
Age	3963	10.918	0.842	8	15
Race = White	3982	0.235	0.424	0	1
Race = Brown	3982	0.406	0.491	0	1
Race = Black	3982	0.177	0.382	0	1
Race = Yellow / Indigenous	3982	0.057	0.232	0	1
Race = Don't know / Missing	3982	0.125	0.331	0	1
Socioeconomic level index[2]	3982	0.001	0.999	-2.347	4.908
Plan to go to university in the future (Yes/No)	3982	0.775	0.418	0	1
Mother knows how to read or write	3,982	0.957	0.204	0	1
Do you see your mother reading? (**Yes**/No)	3,982	0.884	0.320	0	1
Father knows how to read or write	3,982	0.919	0.273	0	1
Do you see your father reading? (**Yes**/No)	3,982	0.795	0.404	0	1
Mother education:					
Never studied	3982	0.014	0.119	0	1
Elementary incomplete	3982	0.041	0.198	0	1
Elementary	3982	0.059	0.236	0	1
Middle school	3982	0.078	0.268	0	1
High school	3982	0.122	0.327	0	1
University degree	3982	0.123	0.329	0	1
Don't know / Missing	3982	0.563	0.496	0	1
Father education:					
Never studied	3982	0.020	0.141	0	1
Elementary incomplete	3982	0.035	0.184	0	1
Elementary	3982	0.043	0.203	0	1
Middle school	3982	0.061	0.239	0	1
High school	3982	0.087	0.282	0	1
University degree	3982	0.119	0.324	0	1
Don't know / Missing	3982	0.635	0.482	0	1
Class characteristics:					
Number of students	3982	23.896	5.013	6	34

Table 7 presents the estimated model results using equation (2). Columns 1 and 2 of Table 7 show the relationship between the full RESS scale and student, class, and school location

[2] The index refers to the standardized (mean zero and standard deviation one) weighted total number of items reported by the student. We followed the "Criterio Brasil 2022" weights for calculating the SES index, considering the items present in the student house (ABEP 2022). The items in the house considered in our indicator are: bathroom, housemaid, car, computer, washing machine, dishwasher, refrigerator, and freezer.

characteristics. Columns 3 and 4 focus on the school dimension, while columns 5 and 6 examine the teacher dimension. The difference between each dimension's first and second columns is that the second column uses the estimation with school fixed effects instead of including controls for the eleven school coordination units.

Table 7: Scale Behavior for Student and Class Characteristics and School Location

	RESS		School Dimension		Teachers Dimension	
Student characteristics:						
Gender = Girl	-0.021	-0.004	-0.020	-0.010	-0.004	0.001
	[0.026]	[0.009]	[0.015]	[0.005]*	[0.011]	[0.004]
Age	-0.009	0.009	0.008	0.021	-0.001	-0.004
	[0.020]	[0.012]	[0.006]	[0.007]***	[0.004]	[0.005]
Race = Brown	0.090	0.034	0.038	0.033	0.036	0.010
	[0.041]**	[0.019]*	[0.028]	[0.012]***	[0.018]**	[0.007]
Race = Black	0.022	0.036	-0.015	0.006	0.018	0.019
	[0.046]	[0.017]**	[0.032]	[0.010]	[0.020]	[0.007]***
Race = Yellow / Indigenous	0.046	-0.004	0.033	-0.003	0.005	-0.008
	[0.066]	[0.034]	[0.046]	[0.023]	[0.027]	[0.014]
Race = Don't know / Missing	0.087	0.022	0.054	0.016	0.021	0.007
	[0.059]	[0.016]	[0.044]	[0.011]	[0.026]	[0.006]
Socioeconomic level index	0.002	0.011	0.017	0.012	-0.006	0.002
	[0.016]	[0.007]	[0.010]*	[0.005]**	[0.007]	[0.003]
Plan to go to university in the future (Yes/No)	0.062	0.039	0.046	0.028	0.010	0.006
	[0.043]	[0.020]*	[0.025]*	[0.011]**	[0.019]	[0.010]
Mother knows how to read or write	0.145	-0.011	0.053	0.006	0.072	0.005
	[0.079]*	[0.028]	[0.049]	[0.017]	[0.035]**	[0.011]
Do you see your mother reading? (**Yes**/No)	0.037	0.022	0.004	0.016	0.010	-0.004
	[0.047]	[0.024]	[0.033]	[0.015]	[0.020]	[0.010]
Father knows how to read or write	0.075	0.064	0.090	0.061	0.010	0.010
	[0.062]	[0.025]**	[0.043]**	[0.017]***	[0.025]	[0.009]
Do you see your father reading? (**Yes**/No)	0.053	-0.020	-0.026	-0.020	0.046	0.003
	[0.043]	[0.016]	[0.028]	[0.010]**	[0.019]**	[0.007]
Mother education:						
Elementary incomplete	0.021	0.003	0.092	0.073	-0.022	-0.030
	[0.140]	[0.059]	[0.119]	[0.041]*	[0.056]	[0.024]
Elementary	0.008	-0.007	0.112	0.049	-0.045	-0.030
	[0.129]	[0.042]	[0.109]	[0.029]*	[0.052]	[0.018]*
Middle school	0.174	0.087	0.210	0.105	0.013	0.002
	[0.126]	[0.045]*	[0.107]*	[0.032]***	[0.048]	[0.019]
High school	-0.054	-0.038	0.076	0.037	-0.067	-0.043
	[0.128]	[0.039]	[0.114]	[0.029]	[0.049]	[0.018]**
University degree	0.040	0.027	0.120	0.040	-0.033	-0.008
	[0.128]	[0.049]	[0.114]	[0.033]	[0.048]	[0.019]
Don't know / Missing	-0.039	-0.016	0.087	0.053	-0.062	-0.029
	[0.113]	[0.042]	[0.106]	[0.032]	[0.043]	[0.017]*

Father education:						
Elementary incomplete	0.194	0.086	0.106	0.041	0.074	0.039
	[0.105]*	[0.057]	[0.080]	[0.034]	[0.044]*	[0.022]*
Elementary	0.285	0.160	0.186	0.091	0.087	0.062
	[0.114]**	[0.053]***	[0.088]**	[0.036]**	[0.047]*	[0.018]***
Middle school	0.198	0.192	0.090	0.071	0.081	0.092
	[0.120]	[0.063]***	[0.089]	[0.041]*	[0.049]	[0.023]***
High school	0.264	0.173	0.158	0.073	0.080	0.072
	[0.119]**	[0.060]***	[0.089]*	[0.041]*	[0.049]	[0.021]***
University degree	0.147	0.117	0.066	0.038	0.066	0.064
	[0.107]	[0.070]*	[0.082]	[0.043]	[0.043]	[0.025]**
Don't know / Missing	0.232	0.151	0.137	0.062	0.077	0.066
	[0.110]**	[0.069]**	[0.085]	[0.046]	[0.043]*	[0.024]***
Class characteristics:						
Number of students	-0.003	-0.073	-0.008	-0.057	0.001	-0.017
	[0.014]	[0.028]***	[0.009]	[0.017]***	[0.006]	[0.012]
Class designation 1502	-0.248	-0.314	-0.141	-0.135	-0.070	-0.092
	[0.149]*	[0.107]***	[0.096]	[0.073]*	[0.063]	[0.043]**
Class designation 1503	-0.053	0.225	-0.340	0.186	0.157	0.090
	[0.469]	[0.939]	[0.252]	[0.486]	[0.199]	[0.366]
School location:						
Regional Coordination 2	-0.686		-0.568		-0.160	
	[0.530]		[0.308]*		[0.210]	
Regional Coordination 3	-1.885		-1.062		-0.656	
	[0.703]***		[0.431]**		[0.256]**	
Regional Coordination 4	-1.026		-0.483		-0.407	
	[0.643]		[0.413]		[0.251]	
Regional Coordination 5	-0.804		-0.343		-0.310	
	[0.649]		[0.399]		[0.239]	
Regional Coordination 6	-1.415		-0.598		-0.569	
	[0.633]**		[0.351]*		[0.246]**	
Regional Coordination 7	-1.065		-0.541		-0.348	
	[0.695]		[0.403]		[0.279]	
Regional Coordination 8	-0.791		-0.615		-0.160	
	[0.685]		[0.428]		[0.271]	
Regional Coordination 9	-0.461		-0.513		0.021	
	[0.722]		[0.470]		[0.284]	
Regional Coordination 10	-0.787		-0.209		-0.354	
	[0.834]		[0.528]		[0.322]	
Regional Coordination 11	-0.537		-0.378		-0.152	
	[0.748]		[0.512]		[0.282]	
School fixed effects	No	Yes	No	Yes	No	Yes
Teacher characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Researcher	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.25	0.74	0.27	0.77	0.22	0.74
N	3,907	3,907	3,866	3,866	3,890	3,890

* $p < .1$; ** $p < .05$; *** $p < .01$

Notes: N refers to students. Standard errors are clustered at the classroom level.

Table 7 shows minimal and non-robust differences in promoting racial equity in classes with more girls (less equitable in the school dimension) and older students (more equitable in the school dimension). A more consistent pattern appears in classes with more brown and black students, though not all estimations are significant. Schools in Rio promoted more equitable activities in higher socioeconomic settings, particularly in the school dimension. Similarly, schools with a higher share of

students planning to attend university (a proxy for the social environment) promoted more racial equity, though these correlations are only significant for the school dimension and when including school fixed effects.

For the class characteristics, we find that schools with larger fifth-grade classes promote a less equitable environment, as do teachers in classes with higher designation (particularly in the classes with the 1502 designation, compared to the 1501 designation). Finally, the school location seems important to the third and sixth regional coordination units, which have a lower human development index than the first regional coordination.[3]

While it is interesting to note that schools and teachers promote more racial equity when the school has a proportion of black and brown students, it is worrisome that the lower the socioeconomic status of the students, the lower the promotion of racial equity in the school. This can be problematic because more vulnerable students are those in schools with a less equitable environment, which may reinforce the inequitable performance distribution in the education system.

FINAL CONSIDERATIONS

Our study focuses on developing and evaluating the Racial Equity in Schools Scale (RESS), a tool designed to measure racial equity in schools. RESS seeks to uncover how individuals perceive and respond to racial discrimination within school environments. By creating and validating the RESS, we aim to enhance the understanding and assessment of racial equity in educational settings. This can provide a valuable resource for researchers, policymakers, and educators dedicated to promoting inclusive school environments.

RESS expands upon existing frameworks by not only examining individual teacher beliefs but also assessing how these beliefs manifest in school-wide systems and practices, thus addressing a critical aspect of how racial equity is implemented in educational contexts (Hachfeld et al. 2011; Jensen et al. 2023; Jensen, Whiting, and Chapman 2018). Moreover, RESS is tailored to the Brazilian educational system, offering a context-specific tool that complements existing scales tested mainly in developed countries. By focusing on preventing racial discrimination and promoting racial awareness,

[3] Regional Coordination 3 includes Jacarezinho, and Regional Coordination 6 includes Acari, which are administrative regions within the municipality of Rio de Janeiro with the five lowest Human Development Index (Prefeitura da Cidade do Rio de Janeiro 2018).

RESS contributes to a deeper understanding of how educational stakeholders can foster inclusive environments that prioritize racial equity.

Despite persistent racial disparities in Brazilian education, there has been a growing effort to measure and address these inequalities. While existing tools in Brazil focus on monitoring racial disparities, they do not specifically evaluate how racial equity is promoted within schools, especially regarding the attitudes and practices of teachers and school management. RESS addresses this gap by offering a more nuanced and context-specific approach to assessing racial equity in Brazilian schools. By developing and validating RESS, this study contributes with a specialized tool for assessing racial equity in educational settings and emphasizes the importance of reliable and validated measures for promoting inclusive environments.

These findings suggest the scale is reliable and valid for measuring racial equity, but improvements are needed. Issues include misalignment of items with their intended factors, such as Question 10, which seems more related to school-wide initiatives than to classroom practices. High uniqueness values in some items, like Questions 12 and 13, suggest they contribute less to the overall construct. To enhance the scale's effectiveness, a revision of items for better alignment with intended factors and the development of guidelines or training for accurate interpretation are recommended.

It is important to verify the scale's adaptability to different contexts and its usability by public managers. Testing the scale with different samples can determine if its results can be applied to a broader context and ensure the findings can be reproduced. This additional validation will help guarantee that RESS can effectively contribute to addressing racial inequities in various educational settings.

REFERENCES

Aldana, Adriana, Josefina Bañales, and Katie Richards-Schuster. 2019. "Youth Anti-Racist Engagement: Conceptualization, Development, and Validation of an Anti-Racism Action Scale." *Adolescent Research Review* 4 (4): 369–81. https://doi.org/10.1007/s40894-019-00113-1.

Andrade, Paulo Sérgio. 2006. "Pertencimento étnico-racial e ensino de História." Dissertação de Mestrado, São Carlos: Universidade Federal de São Carlos - UFSCar.

Brasil, Ministério da Educação (MEC). 2003. *Lei Nº 10.639 de 09 de Janeiro de 2003*. https://legislacao.presidencia.gov.br/atos/?tipo=LEI&numero=10639&ano=2003&ato=431MTTq10dRpWTbf4.

Britto, Ariana, Roberta Costa, and Fábio Waltenberg. 2023. "Are Formal Rules Sufficient to Counteract the Burden of History? Racial Inequality and the Historical Evolution of Formal Educational Rules in Brazil." *Comparative Education Review* 67 (4): 840–60. https://doi.org/10.1086/726615.

Carreira, Denise, and Ana Lúcia Silva Souza. 2013. "Indicadores de Qualidade na Educação: Relações Raciais na Escola." Ação Educativa. São Paulo: UNICEF. ISBN: 978-85-86382-26-0.

Cruz, Tassia. 2022. "Governança e o Financiamento Da Educação." In *Governança Da Educação: Governança e o Regime de Colaboração*, edited by Raphael Callou, Francisco Gaetani, and Fernando Filgueiras. Brasília, DF: FGV Editora. https://editora.fgv.br/produto/a-governanca-e-o-regime-de-colaboracao-3774.

Curenton, Stephanie M., Iheoma U. Iruka, Marisha Humphries, Bryant Jensen, Tonia Durden, Shana E. Rochester, Jacqueline Sims, Jessica V. Whittaker, and Mable B. Kinzie. 2020. "Validity for the Assessing Classroom Sociocultural Equity Scale (ACSES) in Early Childhood Classrooms." *Early Education and Development*, February. https://www.tandfonline.com/doi/full/10.1080/10409289.2019.1611331.

Enterline, Sarah, Marilyn Cochran-Smith, Larry H. Ludlow, and Emilie Mitescu. 2008. "Learning to Teach for Social Justice: Measuring Change in the Beliefs of Teacher Candidates." *The New Educator* 4 (4): 267–90. https://doi.org/10.1080/15476880802430361.

Ernica, Mauricio, Erica Castilho Rodrigues, and José Francisco Soares. 2024. "Education Inequalities in Contemporary Brazil: Definition, Measurement, and Outcomes." *Dados* 68 (May):e20220109. https://doi.org/10.1590/dados.2025.68.1.345x.

Firpo, Sergio, Michael França, and Alysson Portella. 2021. "Social Inequality from the Perspective of the Racial Balance Index." *SSRN Electronic Journal*.

Forrest, James, Garth Lean, and Kevin Dunn. 2016. "Challenging Racism through Schools: Teacher Attitudes to Cultural Diversity and Multicultural Education in Sydney, Australia." *Race Ethnicity and Education* 19 (3): 618–38. https://doi.org/10.1080/13613324.2015.1095170.

Franco, Meredith P., Jessika H. Bottiani, and Catherine P. Bradshaw. 2023. "Assessing Teachers' Culturally Responsive Classroom Practice in PK–12 Schools: A Systematic Review of Teacher-, Student-, and Observer-Report Measures." *Review of Educational Research*, December, 00346543231208720. https://doi.org/10.3102/00346543231208720.

Goldberg, Molly J., Dalhia D. Lloyd, Gullnar Syed, Greg W. Welch, and Stephanie M. Curenton. 2023. "A Validation Study of the Assessing Classroom Sociocultural Equity Scale (ACSES) in Pre-Kindergarten to Third Grade Classrooms." *Early Education and Development*, October. https://www.tandfonline.com/doi/full/10.1080/10409289.2022.2146392.

Grigg, Kaine, and Lenore Manderson. 2016. "The Australian Racism, Acceptance, and Cultural-Ethnocentrism Scale (RACES): Item Response Theory Findings." *International Journal for Equity in Health* 15 (1): 49. https://doi.org/10.1186/s12939-016-0338-4.

Haag, Dandara Gabriela, Pedro Henrique Ribeiro Santiago, Davi Manzini Macedo, João Luiz Bastos, Yin Paradies, and Lisa Jamieson. 2020. "Development and Initial Psychometric Assessment of the Race-Related Attitudes and Multiculturalism Scale in Australia." *PLOS ONE* 15 (4): e0230724. https://doi.org/10.1371/journal.pone.0230724.

Hachfeld, Axinja, Adam Hahn, Sascha Schroeder, Yvonne Anders, Petra Stanat, and Mareike Kunter. 2011. "Assessing Teachers' Multicultural and Egalitarian Beliefs: The Teacher Cultural Beliefs Scale." *Teaching and Teacher Education* 27 (6): 986–96. https://doi.org/10.1016/j.tate.2011.04.006.

Jensen, Bryant, Erin Feinauer Whiting, and Sara Chapman. 2018. "Measuring the Multicultural Dispositions of Preservice Teachers." *Journal of Psychoeducational Assessment* 36 (2): 120–35. https://doi.org/10.1177/0734282916662426.

Jensen, Bryant, Erin Feinauer Whiting, Jimmy Hernández, Xiaohang Zhang, Diego Pliego, and Richard Sudweeks. 2023. "Becoming Equitable Educators: Practical Measures to Support Teachers' Dispositional Growth." *Journal of Teacher Education* 74 (4): 299–314. https://doi.org/10.1177/00224871231183090.

Keum, Brian, Matthew Miller, Minsun Lee, and Grace Chen. 2018. "Color-Blind Racial Attitudes Scale for Asian Americans: Testing the Factor Structure and Measurement Invariance Across Generational Status." *Asian American Journal of Psychology* 9 (January). https://doi.org/10.1037/aap0000100.

Layton, Matthew L., and Amy Erica Smith. 2017. "Is It Race, Class, or Gender? The Sources of Perceived Discrimination in Brazil." *Latin American Politics and Society* 59 (1): 52–73. https://doi.org/10.1111/laps.12010.

LoCurto, Jamie, Brittany C. L. Lange, Marissa G. Iverson, Rocio Chang, and Trisha Pitter. 2024. "A Systematic Review of Organizational Assessments Related to Racism and Equity." *Journal of Racial and Ethnic Health Disparities* 11 (3): 1685–1700. https://doi.org/10.1007/s40615-023-01643-0.

Loveman, Mara, Jeronimo O. Muniz, and Stanley R. Bailey. 2012. "Brazil in Black and White? Race Categories, the Census, and the Study of Inequality." *Ethnic and Racial Studies* 35 (8): 1466–83.

Marteleto, Letícia J., and Molly Dondero. 2016. "Racial Inequality in Education in Brazil: A Twins Fixed-Effects Approach." *Demography* 53 (4): 1185–1205. https://doi.org/10.1007/s13524-016-0484-8.

Neville, Helen, Roderick Lilly, Georgia Duran, Richard Lee, and LaVonne Browne. 2000. "Construction and Initial Validation of the Color-Blind Racial Attitudes Scale (CoBRAS)." *Journal of Counseling Psychology* 47 (January):59–70. https://doi.org/10.1037/0022-0167.47.1.59.

Perrot, Bastien, Emmanuelle Bataille, and Jean-Benoit Hardouin. 2018. "Validscale: A Command to Validate Measurement Scales." *The Stata Journal* 18 (1): 29–50. https://doi.org/10.1177/1536867X1801800104.

Prefeitura da Cidade do Rio de Janeiro. 2018. "Índice de Desenvolvimento Humano (IDH) Municipal, por ordem de IDH, segundo os Bairros ou grupo de Bairros, no Município do Rio de Janeiro em 1991/2000." September 26, 2018. https://www.data.rio/.

Schwartzman, Luisa Farah, and Angela Randolpho Paiva. 2016. "Not Just Racial Quotas: Affirmative Action in Brazilian Higher Education 10 Years Later." *British Journal of Sociology of Education* 37 (4): 548–66. https://doi.org/10.1080/01425692.2014.973015.

Soares, Fábio Veras, Rafael Perez Ribas, and Rafael Guerreiro Osório. 2010. "Evaluating the Impact of Brazil's Bolsa Família: Cash Transfer Programs in Comparative Perspective." *Latin American Research Review* 45 (2): 173–90. https://doi.org/10.1017/S0023879100009390.

Starck, Jordan G., Travis Riddle, Stacey Sinclair, and Natasha Warikoo. 2020. "Teachers Are People Too: Examining the Racial Bias of Teachers Compared to Other American Adults." *Educational Researcher* 49 (4): 273–84. https://doi.org/10.3102/0013189X20912758.

Telles, Edward E. 2002. "Racial Ambiguity among the Brazilian Population." *Ethnic and Racial Studies* 25 (3): 415–41. https://doi.org/10.1080/01419870252932133.

Watkins, Marley W. 2018. "Exploratory Factor Analysis: A Guide to Best Practice." *Journal of Black Psychology* 44 (3): 219–46. https://doi.org/10.1177/0095798418771807.

RESEARCH DATA AVAILABILITY STATEMENT: The dataset supporting the findings of this study is not publicly available.

FUNDING: This work was supported by the Applied Research and Knowledge Network of the Getulio Vargas Foundation.

AUTHOR CONTRIBUTIONS: Tassia Cruz: Conceptualization, Methodology, Formal analysis, Investigation, Writing - Original Draft, Project administration, Funding acquisition. **Ariana Britto:** Conceptualization, Investigation, Writing - Review & Editing, Project administration. **Alice Saccaro:** Formal analysis, Writing - Review & Editing.

CONFLICT OF INTEREST STATEMENT: The authors declare no conflicts of interest to disclose.

ETHICS COMMITTEE APPROVAL STATEMENT: After deliberation by the members and following the detailed form presented, CEPH/FGV classifies this research project as Approved. Given the researcher's commitment to "organize actions to communicate with the parents of students in the schools involved in the research" and to allow parents to decline their children's participation, the protocol is deemed suitable for execution. The term of the project approved in this decision is December 2021. Any changes to the content or scope of the research must be reported to CEPH (Parecer n. 262/2021: Comitê de Conformidade Ética em Pesquisas Envolvendo Seres Humanos - CEPH/FGV).

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