

Parental Incentive and Student's Performance in SAEB 2015 Portuguese Language Evaluation: Does Parental Incentive Compensate for Mean Differences by Sex?

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Received June 20, 2020; Revised July 21, 2020; Accepted July 31, 2020

Abstract Since the 1960s, the sociology of education has inequalities as one of its central themes. From the 1980s, studies on school effectiveness analyzed a set of school characteristics that are associated with students learning. At the same time, emerges another study field that analyzes the relationships between family and school pointing out differences in the type of family incentive to schooling [1,2,3]. However, there is still a gap in Brazilian national production relating to student achievement in standardized national evaluations to an indicator that brings together parenting practices to monitor children's schooling. Thus, the objective in this essay is to create a parental incentive indicator based on the data from SAEB 2015, applied to the 9th grade, and to associate it with the performance of municipal and state school students at SAEB 2015 Portuguese Language Evaluation. The results state that the presence of the high parental incentive increases the students' average results, however, the presence of the high parental incentive does not compensate for the mean differences when compared with the student's gender variable. In other words, regardless of the degree of parental incentive received, within the same socioeconomic level group, girls perform better in the SAEB 2015 Portuguese Language Evaluation than boys.

Keywords: Brazil elementary education, Brazil elementary evaluation, parental incentive, performance, student's gender

Cite This Article: Regina Albuquerque, "Parental Incentive and Student's Performance in SAEB 2015 Portuguese Language Evaluation: Does Parental Incentive Compensate for Mean Differences by Sex?" *American Journal of Educational Research*, vol. 8, no. 7 (2020): 508-512. doi: 10.12691/education-8-7-9.

1. Introduction

The lack of equality in Basic Education is still one of the major problems in Brazil. National scale standardized evaluations allow the mapping of inequalities in a country with a large territorial dimension such as Brazil. This essay uses a database of questionnaires applied to students in elementary school from a non-compulsory National Evaluation (SAEB) to identify patterns of inequality concerning student groups. There were considered the variables socioeconomic level, student's gender, and familiar practices that contribute to the children's schooling. The purpose is to investigate whether parenting practices that encourage student schooling can compensate for differences in averages in SAEB Portuguese Language Evaluation divided by student's gender variables.

There is a wide field of Brazilian national productions on schooling strategies mobilized by families, including parental incentive practices for schooling. These practices range from encouraging reading or doing homework [1,2,4-12], to the mobilization of more refined family practices associated with the schooling of children, such as the frequency of visits to museums and cultural spaces

[13]. Coleman [5] proposes the concept of social capital as an element that adds to schooling. Social capital would be characterized by relationships developed within the family that add positive elements to the process of children's schooling. Alves and Xavier [14] propose the construction of a "parental involvement" indicator inspired by Coleman's concept of social capital. Although the authors use this indicator as one of the explanatory variables for the phenomenon of intra-school exclusion, this work contributes to the analyses here endorsed.

Parallel to the studies that show the contributions of parental incentive to schooling, Franco [5] states the strong correlation between socioeconomic level and student's performance in Brazil. As well recent research shows that there is a strong correlation between the student's gender and race with performance in standardized Brazilian national evaluations [6]. According to the National Institute of Studies and Research in Education Anísio Teixeira, the SAEB 2015 data indicates that the percentage of proficiency in Portuguese Language evaluation according to students' gender is higher to girls than boys (Figure 1). However, this data did not present secondary differences between these two groups. Considering this element, this essay analyses these secondary differences dividing the groups by the latent socioeconomic level variable and the categorical gender variable.

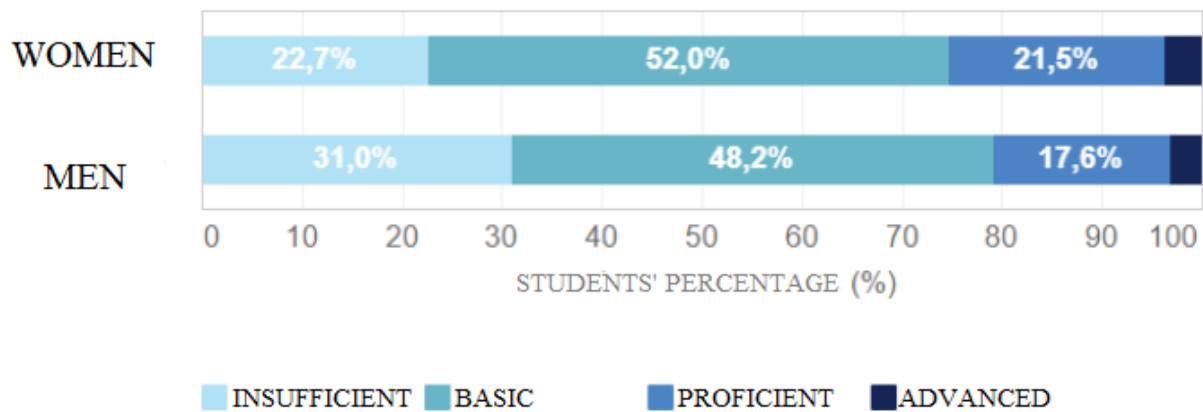


Figure 1. Distribution of students' results on SAEB 2015 Portuguese Language Evaluation by gender. Source: INEP, 2019

The research justification is the low academic production about Brazil's basic education, which suggests it is under-researched [8,14]. The objective is to construct an indicator of parental incentive using the answers of SAEB 2015's questionnaires, applied to students in the 9th grade of municipal and states elementary public schools. Then, to compare this indicator with students' results at SAEB 2015 Portuguese Language Evaluation divided by groups considering the variables of familiar socioeconomic level and the student's gender. The purpose is to investigate whether parenting practices that encourage student schooling can compensate for differences in averages of the student's gender variable. Thus, this essay can expand national contributions to the field of study on intra-school inequalities.

This text is divided into four parts: introduction, materials and methods, results, and conclusions. The following section presents considerations of the methodology applied.

2. Materials and Methods

The methodology is divided into two parts: the first is the description of the parental incentive indicator, considering the data to the whole Brazilian country, and the association between this indicator and students'

performance in the SAEB 2015's Portuguese Language Evaluation, controlling student groups by their socioeconomic level. The second part analyzes intragroup differences, describing the association between results in SAEB Portuguese Language Evaluation and the degree of parental incentive within the same socioeconomic level group, controlled by the student's gender. The variables related to parental incentive practices were grouped in the "parental incentive" indicator which was divided into groups according to the students' socioeconomic level (NSE): low NSE, moderate NSE, and high NSE.

The socioeconomic level, here, is taken as a theoretical construct for stratification of student groups by a measure of social position. That is, the socioeconomic is taken as a latent variable (not directly observed) whose measurement is made by the aggregation of information (for example, the parents' level of education variable) from the SAEB 2015 questionnaires applied to the 9th-grade students. However, this data collection instrument has limitations. One is the absence of household income data.

Another limitation is a degree of inaccuracy in the answers of the large-scale evaluation questionnaires already identified by other studies [15]. Table 1 and Table 2 presents the synthesis of the variables used to construct the Parental Incentive indicator, as well as the variables used to construct the latent NSE variable.

Table 1. SAEB 2015 questionnaire variables used to create the Parental Incentive indicator. Source: SAEB, 2015

Parental Incentive (IP)	
Q027: "Do your parents or guardians encourage you to study?"	Q028: "Do your parents or guardians encourage you to do your homework?"
Q029: "Do your parents or guardians encourage you to read?"	Q030: "Do your parents or guardians encourage you to go to class and/or not to miss classes?"
Q031: "Do your parents or guardians talk to you about what happened in the school?"	

Table 2. SAEB 2015 questionnaire variables used to create the latent NSE variable. Source: SAEB, 2015

Socioeconomic (NSE) Variable	
Targeted cultural capital	Institutionalized cultural capital
Do you have a color television in your house? Do you have a refrigerator in your house? Do you have a freezer in your house? Do you have a washing machine in your house? Do you have a car at your house? Do you have a computer in your house? Do you have a bathroom in your house? How many bedrooms are in your house? Do you have a maid at home (at least five times a week)?	What is the educational level of your mother or woman responsible for you? What is the educational level of your father or man responsible for you?

In the next topic, there are some discussions about the results of the analyses undertaken.

3. Results

In a preliminary spatial distribution analysis of the SAEB 2015 Portuguese Language students' results, it is possible to identify the states that have the highest concentration of proficient results in the evaluation. Map 1 (Figure 2) shows that the highest average results are found in Santa Catarina (SC), and Mato Grosso do Sul (MS) while Pará (PA), Amapá (AP), Maranhão (MA), Bahia (BA), Alagoas (AL), and Paraíba (PB) have the lowest average results.

Considering the Brazilian national data, for a 95% reliability level, the students' average proficiency in SAEB Portuguese Language state a difference considering the presence of parental incentive. The national data showed a difference of 10.23 points, on average, between students results with low NSE who receive high parental incentives from those who receive low parental incentives. This difference drops to 5.97 points, on average, between students results with moderate NSE who receive a high

incentive from those who receive low incentives. In the high NSE group, the difference between those who receive high and low incentive is 6.66 points, on average. That is, there are differences in the SAEB 2015 Portuguese Language Evaluation results means according to the parental incentive degree that the student receives considering all socioeconomic level groups. In this sense, the degree of parental incentive received is capable of increasing the students' results.

The graphs below use as reference line the Soares proficiency scale [16] that divides proficient and non-proficient students. In the case of the SAEB Portuguese Language Evaluation applied to the 9th grade, the reference score considers the results above 275 points to be proficient. The average results of municipal and state schools throughout the country indicate that more than 75% of students in the low NSE and low parental incentive group do not have proficiency in the Portuguese Language. The percentage of Portuguese Language proficient students increases according to the NSE group and the degree of parental incentive received, with the highest Portuguese Language proficient results concentration in the group of high NSE and high parental incentive (Figure 3).

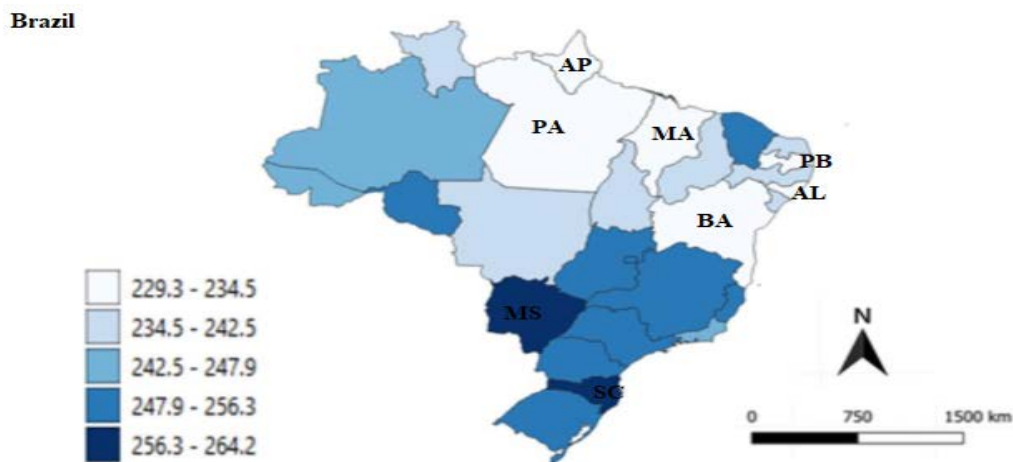
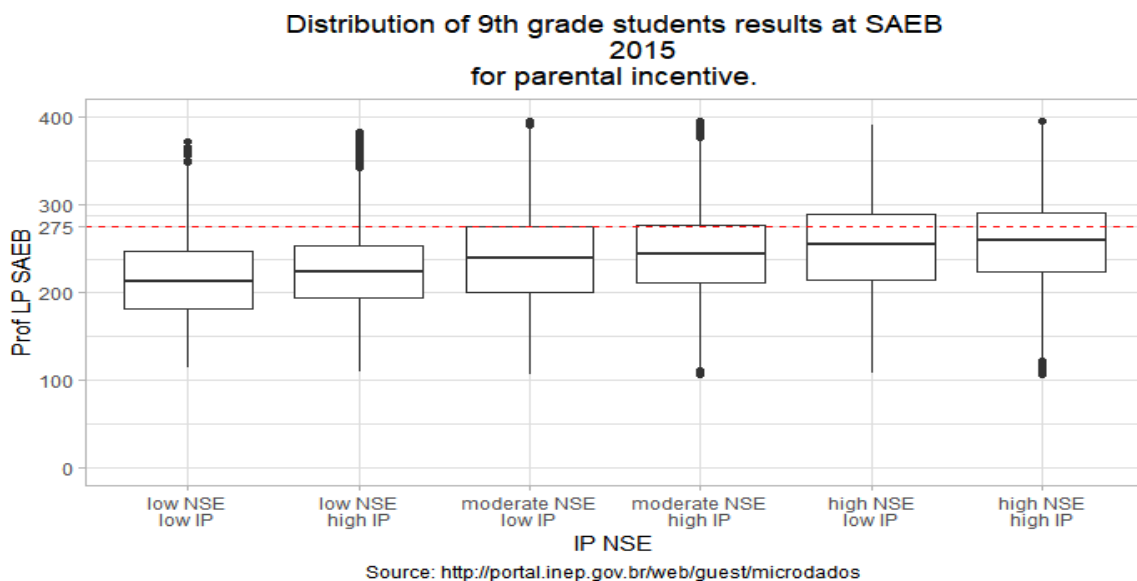


Figure 2. Students' results distribution in the SAEB 2015 Portuguese Language Evaluation (Source: Produced by the author using SAEB 2015 data)



Source: <http://portal.inep.gov.br/web/guest/microdados>

Figure 3. Distribution of student's results according to parental incentive, considering mean scores across the country. The graph has as reference the value of 275 points that divides proficient to non-proficient students (Source: Produced by the author using SAEB 2015 data)

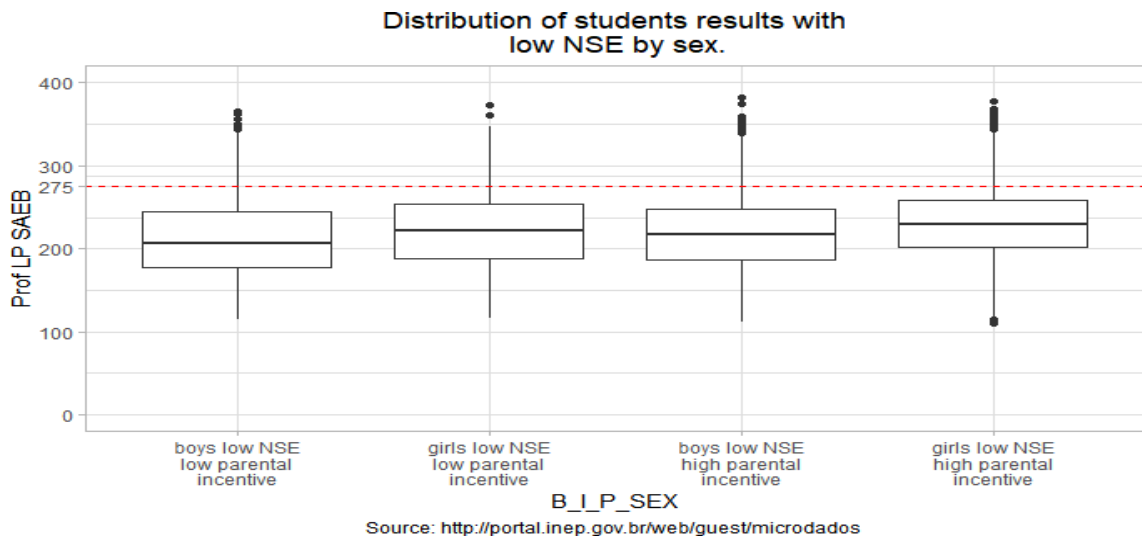


Figure 4. Distribution of the students' results with low NSE according to the degree of parental incentive, controlled by the student's gender. The graph has as reference the value of 275 points that divides proficient to non-proficient students (Source: Produced by the author using SAEB 2015 data)

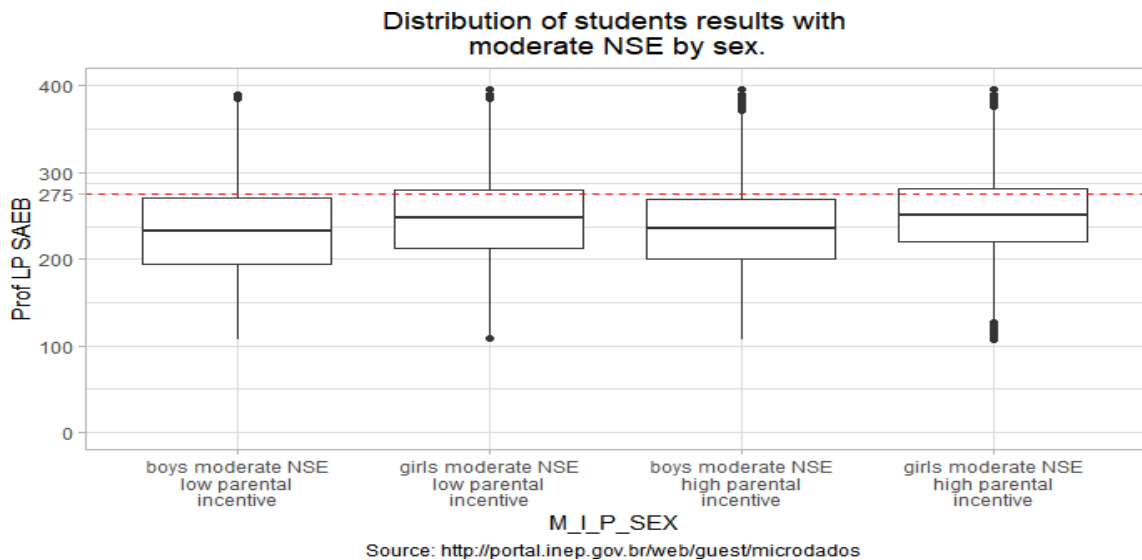


Figure 5. Distribution of the students' results with moderate NSE according to the degree of parental incentive, controlled by the student's gender. The graph has as reference the value of 275 points that divides proficient to non-proficient students (Source: Produced by the author using SAEB 2015 data)

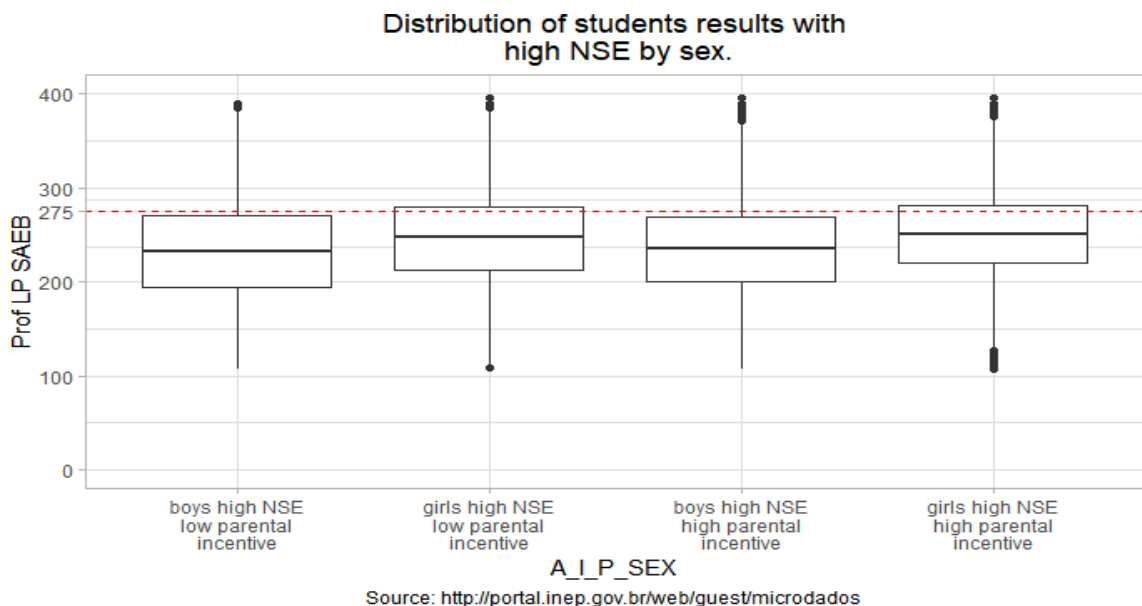


Figure 6. Distribution of the students' results with high NSE according to the degree of parental incentive, controlled by the student's gender. The graph has as reference the value of 275 points that divides proficient to non-proficient students (Source: Produced by the author using SAEB 2015 data)

The analyses of intragroup differences point that among boys and girls with low NSE and low parental incentive there is a mean difference of 5.7 points in favor of girls. Among boys and girls with low NSE and high parental incentives, this difference is 12.74 points in girls' favor (Figure 4). Considering the moderate NSE group, the mean difference between boys and girls who received low and high parental incentives is 12.74 points and 14.70 points in girls' favor, respectively (Figure 5). Finally, in the high NSE group, the mean difference between boys and girls who received low and high parental incentives is 16.78 points and 18.85 points in girls' favor (Figure 6).

Below, some conclusions considering the analyses undertaken.

4. Conclusion

The data seems to indicate that the degree of parental incentive increases the students' results in the SAEB 2015 Portuguese Language Evaluation. However, the presence of high parental incentives is not able to compensate for the difference of averages according to the student's gender.

List of Abbreviations

INEP: National Institute of Studies and Research in Education Anísio Teixeira.

NSE: Socioeconomic level.

SAEB: Evaluation System of Elementary Education.

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