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ARTICLE

DIFFERENTIAL VALUATION OF PORTUGUESE AND MATHEMATICS TEACHING: THE INFLUENCE OF ACCOUNTABILITY POLICIES[1]

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ABSTRACT: Large-scale assessments play a central role in shaping public policies in Basic Education across various countries, exerting both symbolic and material effects on educational institutions and the teaching profession. In Brazil, alongside the Basic Education Assessment System, numerous states and municipalities have developed their own assessment models, resulting in a continuous presence of external audits in the school routine. This study examines how teachers in public education systems interpret these assessment processes, with a particular focus on their perceptions regarding the potential differential value placed on specific subjects prioritized in standardized exams. The data used in this analysis are derived from a survey conducted in four states in the Northeast region of Brazil (Bahia, Paraíba, Pernambuco, and Rio Grande do Norte). The findings indicate that teachers perceive an overemphasis on Portuguese and Mathematics, with this perception being more pronounced among teachers in systems that enforce high-stakes policies.

Keywords: accountability, education policy, education assessment, teachers.

VALORIZAÇÃO DIFERENCIADA DO ENSINO DE PORTUGUÊS E DE MATEMÁTICA: A INFLUÊNCIA DAS POLÍTICAS DE *ACCOUNTABILITY*

RESUMO: As avaliações em larga escala ocupam um lugar central no direcionamento de políticas públicas na Educação Básica em uma diversidade de países na contemporaneidade, com efeitos simbólicos e materiais sobre as instituições escolares e a categoria docente. No Brasil, além do Sistema de Avaliação da Educação Básica, vários estados e municípios desenvolveram modelos próprios de avaliação, de modo que o cotidiano escolar é permanentemente atravessado por auditorias externas. Neste artigo, buscou-se analisar como docentes das redes públicas interpretam esses processos, com ênfase em

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suas percepções acerca de uma possível valorização diferenciada das disciplinas priorizadas nos exames estandardizados. Os dados utilizados são resultantes de *survey* realizado em quatro estados da região Nordeste (Bahia, Paraíba, Pernambuco e Rio Grande do Norte). Constatou-se que a percepção dos professores é de uma sobrevalorização de Português e Matemática, sendo esse índice mais elevado entre docentes de redes que impõem políticas de forte responsabilização (*high stake*).

Palavras-chave: accountability, política da educação, avaliação da educação, docentes.

VALORIZACIÓN DIFERENCIADA DE LA ENSEÑANZA DE PORTUGUÉS Y MATEMÁTICA: LA INFLUENCIA DE LAS POLÍTICAS DE ACCOUNTABILITY

RESUMEN: Las evaluaciones a gran escala desempeñan un papel central en la configuración de las políticas públicas en Educación Básica en una variedad de países, con efectos simbólicos y materiales en las instituciones escolares y la categoría docente. En Brasil, además del Sistema de Evaluación de la Educación Básica, varias provincias y municipalidades han desarrollado sus propios modelos de evaluación, de modo que la vida escolar está permanentemente influenciada por auditorías externas. En este artículo buscamos analizar cómo los docentes de escuelas públicas interpretan estos procesos, con énfasis en sus percepciones sobre una posible valoración diferenciada de las materias priorizadas en los exámenes estandarizados. Los datos utilizados se derivan de *survey* realizado en cuatro estados de la región Nordeste de Brasil (Bahia, Paraíba, Pernambuco y Rio Grande do Norte). Se constató que la percepción de los docentes es de una sobrevalorización de Portugués y Matemática, siendo este índice más elevado entre los docentes de redes que imponen políticas de fuerte responsabilización (*high stake*).

Palabras clave: accountability, política educativa, evaluación educativa, docentes.

INTRODUCTION

Large-scale assessments in the context of basic education in Brazil are almost entirely focused on Portuguese Language and Mathematics, considered fundamental skills for students' academic and professional success. However, the emphasis on large-scale testing can lead to a greater valuation of the teaching of these two subjects and, consequently, of their teachers in the daily school routine. This is especially true in school systems that adopt accountability policies with economic incentives, such as rewards or bonuses, linked to student performance.

Research indicate that accountability policies aimed at improving academic results promote a highly competitive internal environment within schools. In this setting, performance is constantly evaluated and results are publicly shared, encouraging comparisons among educational institutions, municipalities, states, regions, and countries (Fardella; Sisto, 2015; Lessard, 2004; Levitt et al., 2008; Oliveira, 2018). These policies, directly linked to the school work process, lead to an intensification of teaching activities and the incorporation of logics characteristic of the capitalist labor organization into the management of public schools. Notably, there has been an increase n the use of economic incentives linked to evaluation processes that hold teachers accountable for their students' academic results (Ruz, 2014; Oliveira, 2017).

The logic of accountability is based on the idea that individuals, through knowledge of their actions, should improve their practice. This reasoning of moral and professional accountability has been

widely used in public education systems around the world, developing formal mechanisms and specific systems for measuring student performance, associated or not with policies of material incentives (Maroy; Voisin, 2013; Lessard, 2004). Rewards or bonuses have been used, varying between high-stakes and low-stakes policies (Holloway et al., 2017) or as strong or high and soft or low accountability (Oliveira; Carvalho, 2021). The central argument used by proponents of these policies is to provide an indicator of teaching quality that can be appropriated by society, to allow the mobilization of different school agents so that practices can be adjusted to improve the results. These policies center evaluations on learning in Mother Tongue and Mathematics and are generally inspired by the Program for International Student Assessment (PISA).

For two decades, the Organization for Economic Cooperation and Development (OECD) has been conducting PISA through surveys in approximately 80 countries, representing 90% of the world's economies. The OECD considers students' results in Mathematics, Mother Tongue, and Science to be a good indicator of future economic health. In the OECD's view, countries or cities with good schools can expect to have healthy economies, while those with weaker schools can expect to face negative economic impacts (Asia Society, n.d.).

According to Meirieu (2004), teachers become trapped by these accountability policies, living under consumerist pressure, defined as a tyranny of results, making them feel compelled to produce results. This pressure can develop a dynamic that significantly devalues and denaturalizes the teaching profession. For the author, it can also compromise the understanding of the school as an institution in favor of an understanding of the school as a service, and represents a threat to traditional forms of professionalization of the teaching career.

In this sense, the analyses developed in this article are based on data from a research project that sought to understand how teachers, as a professional group, react to the evaluation processes that affect their work today. More specifically, it analyzes how accountability policies reach teachers and how they are interpreted.

The first section of the text explores the relationship between the rise of an educational auditing culture and the evolving dynamics of the teaching profession. Next, the methodological aspects are presented, detailing the data sources, sampling procedures, variables, and the statistical techniques employed to obtain the results. The third section investigates whether teachers' perceptions of the increased emphasis on Portuguese and Mathematics in assessments—and consequently in schools—are influenced by several factors: the type of accountability policy of the federated entity, the stages of Basic Education in which they work, and the subjects they teach. Finally, the conclusion discusses the potential effects of disciplinary hierarchization on the structure of pedagogical work and professional collegiality.

ACCOUNTABILITY POLICIES AND THE (RE)CONFIGURATION OF TEACHING WORK

Since the 1990s, large-scale external assessments have become crucial tools in shaping educational policies around the world. This rise of a culture of evaluation and evidence-based policies is associated with neoliberal ideology and New Public Management. These concepts, which gained traction in the late century 20th century, prompted changes in the State with an emphasis on economic and

technical rationality. The aim was to enhance the effectiveness, efficiency, and results of public services, according to a logic typical of the private sector (Verger; Normand, 2015).

At the global level, this paradigm is supported by PISA, in a process based on information and persuasion, so that the measured performance of students justifies and legitimizes reforms that emphasize accountability, learning outcomes, and quality assurance. Sobe (2019) highlights that, in this movement, teacher performance also becomes a central concept, with the professional competence of teachers sometimes placed on a pedestal, and sometimes pathologized, depending on the performance of the networks and institutions to which they are linked. According to the author, the dissemination of large-scale assessments, increasingly focused on greater individualization in the measurement of data and quality, profoundly interferes with the practices, subjectivities, and identities of teachers and contributes to a reconfiguration of professional collegiality.

PISA has enabled the construction of an international consensus in which educational quality is understood as resulting in Reading, Mathematics, and, more recently, Science. This not only narrows the understanding of the role of education in the context of citizenship and the full development of the individual, favoring a utilitarian view of education, but also contributes to an excessive accountability of teachers, since these exams and the resulting indices are insufficient to measure other intra-school factors and extra-school variables that significantly influence student performance. In this sense, Molstad et al. (2019) warn that

> Education is transformed from a continuous process involving students and teachers embedded in a school context into fixed numbers that signal success or failure. Education is therefore restricted to a single focal point based on numbers. These numbers work as "fact" and "truth" about educational knowledge and encompass phenomena such as "teachers" and "teaching." (Molstad et al., 2019, p. 25).

In this perspective, the authors point out that teachers are increasingly viewed as objects that can be shaped to improve the educational systems, rather than as active subjects. The reports produced from these evaluations guide both teacher training policies that aim for greater predictability regarding teaching activities and content. Also, these evaluations influence accountability policies, which may include bonuses for teachers who adequately meet the established goals, among other material incentives. Even when these evaluations are not directly linked to teachers' remuneration, they can still represent a risk to teacher professionalism, as they influence the organization of school work, pedagogical management, and career development. The changes introduced in these areas interfere with power and authority relations in educational systems and contradict professional legitimacy based on the defense of autonomy, collaborative work, and collegial decision-making regarding learning processes.

The logic of PISA finds its parallel in the Brazilian Basic Education Assessment System (Saeb-*Sistema de Avaliação da Educação Básica*). Initiated in the 1990s with a diagnostic character regarding the quality of education, the model evolved in a way that converged with the OECD assessment, assuming a central role as a driver of public policies through the systematic measurement of student performance in Reading and Mathematics[2]. For more than a decade, Saeb has been associated with

[2] The Portuguese and Mathematics tests are administered to students in the 5th and 9th grades and the 3rd year of high school, covering all public schools. Starting with the 2019 edition, the Saeb assessment included questions in Human Sciences and Natural Sciences for 9th-grade students, on a sample basis.

accountability policies of varying intensity, especially since the formulation, in 2005, of the Basic Education Development Index (Ideb), measured based on the concepts of flow (data on school progression) and learning (results of student tests in Saeb). This assessment allows for the definition of biennial targets to be achieved not only by the country, but also by schools, municipalities, states, and the Federal District.

The preponderance of educational regulation based on statistical data in contemporary times is further confirmed by the number of subnational entities that have developed their evaluation systems – 22 states and hundreds of municipalities (Bauer, 2020). Many of these are linked to teacher accountability policies, as pointed out by Zatti and Minhoto (2019), who identified that in eight states, teacher evaluation policies condition career progression; in ten states, bonus payments occur; and in four states, there are double effects, both bonuses and career progression effects.

In this context, the growing adoption of accountability policies linked to student performance evaluation and teacher accountability becomes important to understand how these professionals interpret this phenomenon in their daily work. Considering that school success or failure is condensed in the results of Portuguese and Mathematics, the following section of the article discusses teachers' perceptions of a differentiated valuation of these subjects in the school context.

METHODOLOGY

Data source and characterization of the states surveyed

The proposed analysis uses data from the research project "The conditions of provision of public basic education in four states of Northeast Brazil,"[3] conducted in 2021 and 2022 by the National Institute of Science and Technology in Educational Policy and Teaching Work (INCT Gestrado-*Instituto Nacional de Ciência e Tecnologia Política Educacional e Trabalho Docente*), in Bahia, Rio Grande do Norte, Pernambuco, and Paraíba. This selection was based on analyses grounded in documentary studies on educational policies being developed in all nine states of the region (Oliveira et al., 2019), with an emphasis on those related to the accountability of school actors.

Thus, we observed that standardized assessments have become a fundamental component in educational management and exert performative pressure on schools and education professionals in the Northeast region. According to the scope, pace, and intensity of the accountability policies developed, Oliveira and Clementino (2019) categorized the states into three groups: high accountability systems (Ceará, Paraíba, and Pernambuco); medium accountability systems (Alagoas, Maranhão, and Piauí); and low accountability systems (Bahia, Rio Grande do Norte, and Sergipe).

The first group is composed of states that develop high-accountability policies, adopting strategies of bonuses and rewards for the results achieved by both teachers and students: Ceará, Paraíba, and Pernambuco. These three states have their school performance evaluation system; they establish agreements with partners for in-service training, seeking to identify experiences of teachers who have "good practices"; and they develop their initiatives to reward schools and their professionals, considering

[3] The research was approved by the Ethics Committee, according to CAAE 15185819.2.0000.5149 – Opinion 3.388.336.

the achievement of established goals and criteria, and positioning the awards as an instrument to encourage teachers' commitment to the goals.

The second group consists of three states that have medium-accountability systems: Alagoas, Maranhão, and Piauí. In these states, incentives for performance improvement are not directly given to teachers in the form of rewards or sanctions, but rather employ participatory strategies that seek to involve and engage them. Although they have their evaluation systems, the stimulus for performance improvement is provided through in-service training activities with teachers, courses, workshops, seminars, and other strategies to promote the involvement of participants in achieving policy objectives.

The third group consists of states with low accountability systems or a complete lack of accountability: Bahia, Rio Grande do Norte, and Sergipe. This group is characterized by policies that, while acknowledging the importance of evaluation as a measure of educational quality, either do not have a well-developed evaluation system or lack one. Also, there are no clear normative provisions found that link actions directed at teachers by the education secretariat with the pursuit of results on standardized tests.

Based on this classification, two states were considered to have high accountability (Pernambuco and Paraíba), and two states have low accountability (Bahia and Rio Grande do Norte), selected for the research to facilitate the identification of similarities and contrasts. The category of medium accountability was discarded since the policies implemented in those contexts were more undefined and diffuse. The analyzed universe comprises 280,087 teachers in municipal and state public basic education schools located in the states of Bahia, Paraíba, Pernambuco, and Rio Grande do Norte, according to data from the 2021 School Census.

Sampling procedures

Through a probabilistic and representative sampling design of the population of the four selected states, the procedure to select the elements to be surveyed considered criteria related to the characteristics of the universe. First: to obtain an adequate geographical distribution, the state capitals necessarily comprised the sample (self-representing) and covered all the mesoregions of each state. Second: the size of the municipalities was considered, classified according to population size as follows: Small size – those with a population of up to 10,000 inhabitants; Medium size – with a population of 10,000 to 20,000 inhabitants; and Large size – with a population of over 20,000 inhabitants. Third: within each municipality, the educational units were randomly selected, in which all teachers are part of the sample. Finally: what is called cluster sampling was used, whose peculiarity is that all elements belonging to that group must be surveyed. In other words, in each selected educational unit, all teachers assigned to it are interviewed.

After developing these procedures, data collection was conducted electronically using a self-administered form, including 1,109 basic education teachers distributed across the four states of northeastern Brazil. However, criteria were included to limit the data set. First, the teachers needed to work in only one stage of basic education, as this is one of the variables to be analyzed, as described in the following section. Second, the teachers had to instruct students from the early years of elementary school to high school, excluding those in daycare and preschool. This is because there is no application

of tests to students in early childhood education. As a result, the analyzed sample was restricted to 801 teachers from public basic education schools in Bahia, Paraíba, Pernambuco, and Rio Grande do Norte.

Variables analyzed

Among the variables analyzed in the study, two refer to the functional situation of the teachers. The first relates to the stage of Basic Education in which they work at that school [SF2. In this school, you currently teach in:], and the option must encompass a single category, as stipulated by one of the data delimitation criteria. The responses were: Elementary School (1st to 5th grade) [36.1%], Middle School (6th to 9th grade) [29.2%], and High School [34.7%].

The second variable refers to which subject(s) the teachers taught at that school [SF2.1. Which subjects?]. The questionnaire presented the following categories: Not applicable (Early Childhood Education/Elementary School — 1st to 5th grade); 1. Arts; 2. Biology; 3. Science; 4. Physical Education; 5. Philosophy; 6. Physics; 7. Geography; 8. History; 9. Foreign Language; 10. Portuguese Language; 11. Mathematics; 12. Chemistry; 13. Sociology; and 14. Other. Thus, this variable was transformed into two others, one focused on the Portuguese Language subject and the other on Mathematics. In the case of Portuguese Language, the categorization was as follows: Portuguese Language — which includes those who indicated teaching this subject, also encompassing those who stated being responsible for one or more other subjects — [16.1%]; Other subject(s) [47.8%]; and Elementary School teacher (early grades) [36.1%]. For Mathematics, the procedure was similar: Mathematics — which includes those who indicated teaching this subject, also encompassing those who stated being responsible for one or more other subjects — [13.6%]; Other subject(s) [50.3%]; and Elementary School teacher (early grades) [36.1%].

Another variable included in the analyses was the classification of the accountability policy of the federated entity, as explained previously, linked to the public network — municipal or state — of the schools to which the teachers were affiliated. The resulting categories were: State – Low stake [10.6%]; State – High stake [31.8%]; Municipal – Low stake [28.2%]; and Municipal – High stake [29.3%].

Finally, data on teachers' perceptions were collected. First, their perception of the increased value placed on mathematics teaching was captured [AE5. In this school, do you perceive that in the last ten years there has been a greater appreciation for mathematics teaching?]. As a result, 87.6% answered Yes, and 12.4% answered No. Then, the same question was asked about the value placed on Portuguese language teaching [AE6. In this school, do you perceive that in the last ten years there has been a greater appreciation for Portuguese language teaching?]. The result showed that 91.2% answered Yes, and 8.8% answered No.

Statistical technique

Among the variables analyzed in the study, two refer to the functional situation of the teachers. The first relates to the sub-stage of Basic Education in which they work at that school [SF2. In this school, which grade level do you currently teach?], and the option must encompass a single category, as stipulated by one of the data delimitation criteria. The responses were Elementary School (1st to 5th grade) [36.1%], Middle School (6th to 9th grade) [29.2%], and High School [34.7%].

The statistical technique called Logistic Regression is used to assess the effects on the valuation of Portuguese Language and Mathematics teaching in basic education schools. This tool belongs to the family of regression models, which allow describing the relationship between the response variable and one or more explanatory variables (Hosmer; Lemeshow, 1989). The specificity of the logistic model is that the response variable is of the binary type, that is, it assumes only two possible values — yes or no.

The logic of the model is the estimation of the relationship between the explanatory variables and the probability of an event occurring (or not), whose transformation into a simple probability is done through a logistic function. Understanding this notion of the probability of occurrence (or non-occurrence) of the response variable is essential, as it is not a simple estimation. In other words, what is sought is not to estimate the dependent variable through the explanatory variables, but rather to compare the effects between the response categories in the dependent variable.

In this study, the focus is exclusively on comparing the probabilities of occurrence between the categories of the explanatory variables. Thus, the interpretation of the Logistic Regression model relies on the measure called the odds ratio, which consists of comparing the probability of an event occurring with the probability of that event not occurring (Hair et al., 2009, p. 223). Regarding the possible results, when the ratio is equal to one (odds ratio = 1), the association between the explanatory variable and the dependent variable is ruled out. If the result is greater than one (odds ratio > 1), not only is the association confirmed, but it is also inferred that the explanatory variable increases the chances of the event occurring. And when the result is less than one (odds ratio < 1), it is concluded that, in addition to an association existing, the explanatory variable had the opposite effect, that is, it decreased the chances of the event occurring.

In our case, two Logistic Regression models are used. The first was to compare the influence of the explanatory variables on the perception of the value placed on Portuguese Language teaching, and the second, on Mathematics. Since the focus of this study is not on estimating the response variable, the constants (β_0) are not included in the implemented models.

Model 1, whose dependent variable is the teachers' perception of whether there has been greater appreciation of Portuguese Language teaching in the last ten years, is expressed as follows:

$$Y = \beta_{1i}\,\text{Basic Education Stage} + \beta_{2j}\,\text{Subject(s) Taught} + \beta_{3k}\,\text{Accountability Policy} + \varepsilon$$

Where:

Y: response variable referring to the perception of greater appreciation of Portuguese language teaching in the last ten years (0 = No; 1 = Yes)

$\beta_{1i,\ (i\ =\ 0,\ 1,\ 2)}$: regression coefficient of the variable Basic Education Stage (0 = Elementary School – early years [reference]; 1 = Elementary School – later years; and 2 = High School)

$\beta_{2j,\ (i\ =\ 0,\ 1,\ 2,\ 3)}$: regression coefficient of the variable Subject(s) Taught (0 = Portuguese [reference]; 1 = Other subject(s); and 2 = Elementary School teacher)

$\beta_{3k, (i = 0, 1, 2, 3)}$: regression coefficient of the variable Accountability Policy (0 = State – Low stake [reference]; 1 = State – High stake; 2 = Municipal – Low stake; and 3 = Municipal – High stake)

ε: associated error term

Model 2, on the other hand, presents as the dependent variable the teachers' perception of the increased value placed on mathematics teaching in the last ten years, and is thus expressed as:

$$Y = \beta_{1i}\,\text{Stage of Basic Education} + \beta_{2j}\,\text{Subject(s) taught} + \beta_{3k}\,\text{Accountability policy} + \varepsilon$$

Where:

Y: response variable referring to the perception of the increased value placed on mathematics education in the last ten years (0 = No; 1 = Yes)

$\beta_{1i, (i = 0, 1, 2)}$: regression coefficient of the variable Stage of Basic Education (0 = Elementary School – early years [reference]; 1 = Elementary School – later years; and 2 = High School)

$\beta_{2j, (i = 0, 1, 2, 3)}$: regression coefficient of the variable Subject(s) taught (0 = Mathematics [reference]; 1 = Other subject(s); and 2 = Elementary School teacher)

$\beta_{3k, (i = 0, 1, 2, 3)}$: regression coefficient of the variable Accountability Policy (0 = State – Low stake [reference]; 1 = State – High stake; 2 = Municipal – Low stake; and 3 = Municipal – High stake)

ε: associated error term

The Enter method was used, which includes all explanatory variables in the Logistic Regression models, as all are considered relevant. Because the objective is solely to compare the odds ratios between the categories of the independent variables, the constant was not included in the model development.

The implementation of the Logistic Regression models produces several statistics. The logistic coefficients, defined as β's, act as a weighting factor for the independent variables for their discriminatory power, similar to a regression weight. The Standard Error (SE) denotes the expected range of the coefficient across multiple samples of the data. The Wald statistic represents the test statistic used to verify the significance of the logistic coefficient, whose interpretation is similar to the F or t values used for testing the significance of regression coefficients. Exp(β) denotes the odds ratio, corresponding to the exponential or antilogarithm of the parameter, whose interpretation was presented previously. The Significance Level (Sig.), also called Type I Error, refers to the probability of accepting the alternative hypothesis when, in fact, it is false.

RESULTS

Here, we describe the results of the Logistic Regression applied to two models. The first was related to the Portuguese Language and the other to Mathematics. The focus is on comparing the influence of the explanatory variables on the perception of the increased value placed on these subjects in the school context.

Regarding the Portuguese Language, the three explanatory variables showed statistical significance (Sig. < 0.05) in the logistic model (Table 1). Regarding the stages of Basic Education, the results show that the chance of a teacher in the final years of Elementary School perceiving that there has been a greater appreciation of Portuguese language teaching in the last ten years is 6.59 times that of a teacher in the initial years of the same stage. In other words, the chance of a teacher in the final years perceiving the greater appreciation of Portuguese language teaching is 6.59 times higher than that of a teacher in the initial years of Elementary School perceiving the same situation. In High School, teachers also demonstrated an increased perception of the greater appreciation of the Portuguese Language (Sig. < 0.05), but corresponding to 4.14 times the chance observed among those in the initial years of Elementary School.

When considering the subjects taught, it is possible to confirm that teachers in the early years of Elementary School have a 13.13 times greater chance than Portuguese language teachers of perceiving greater value placed on this subject in the last ten years (Table 1). The comparison between Portuguese language teachers and those of other subjects was not statistically significant.

Accountability policies have had a significant impact on teachers' perceptions regarding the increased importance of Portuguese language teaching. As indicated in Table 1, teachers in the State – High Stake group are 5.02 times more likely to hold this view compared to their counterparts in the State – Low Stake group ($p < 0.05$). Additionally, teachers in the Municipal – High Stake group are 2.36 times more likely to appreciate the heightened value placed on Portuguese language teaching when compared to those in the State – Low Stake group.

Table 1

Logistic model regarding teachers' perceptions of the increased value placed on Portuguese Language teaching according to the level of education, the subject(s) they teach, and the type of accountability policy – BA/PB/PE/RN, 2021-2022

Variables	β	SE	Wald	G.L.	Sig.	Exp(β)	C.I (95%)
School level							
(0) Elementary School			16.294	2	**0.000**		
(1) Middle School	1.89	0.52	13.36	1	0.000	6.59	2.40 – 18.12
(2) High School	1.42	0.44	10.52	1	0.001	4.14	1.76 – 9.78
Subjects taught							
(0) Portuguese Language			23.41	2	**0.000**		
(1) Other subject(s)	-0.47	0.37	1.66	1	0.198	0.63	0.31 – 1.28
(2) Elementary school teacher	2.58	0.55	22.00	1	0.000	13.13	4.48 – 38.49

Accountability policy							
(0) State – *Low stake*			26.35	3	**0.000**		
(1) State – *High stake*	1.61	0.39	16.88	1	0.000	5.02	2.32 – 10.83
(2) Municipal – *Low stake*	-0.07	0.49	0.02	1	0.893	0.94	0.36 – 2.45
(3) Municipal – *High stake*	1.21	0.58	4.38	1	0.036	3.36	1.08 – 10.47

Source: Prepared by the authors based on the microdata from the research "The conditions of provision of public basic education in four states of Northeast Brazil".

Regarding Mathematics education, two of the three explanatory variables showed statistical significance (Sig. < 0.05) in the logistic model (Table 2). The basic education stage did not show statistical significance, which allows us to state that the chances of teachers perceiving greater value in mathematics education are similar across the analyzed categories.

Based on the subjects taught, it can be concluded that teachers in the early years of elementary school are 7.78 times more likely than mathematics teachers to report a greater appreciation for their subject over the past decade (see Table 2). In contrast, the comparison between Portuguese Language teachers and those of other subjects did not yield statistically significant results.

Accountability policies also significantly influenced teachers' perceptions regarding the increased value of Portuguese language teaching. As shown in Table 1, the chance of a teacher in the State – High stake group having this view is 4.31 times higher than that of a teacher in the State – Low stake group (Sig. < 0.05). However, this is the only category that showed statistical significance.

Table 2

Logistic model regarding teachers' perceptions of the increased value placed on mathematics education according to the level of education, the subject(s) they teach, and the type of accountability policy – BA/PB/PE/RN, 2021-2022

Variables	**β**	**SE**	**Wald**	**G.L.**	**Sig.**	**Exp(β)**	**I.C. (95%)**
School level							
(0) Elementary School			5.26	2	**0.072**		
(1) Middle School	1.13	0.49	5.26	1	0.022	3.10	1.18 – 8.14
(2) High School	0.38	0.40	0.92	1	0.338	1.46	0.67 – 3.17
Subjects taught							
(0) Portuguese Language			20.59	2	**0.000**		
(1) Other subject(s)	0.54	0.31	3.10	1	0.078	1.72	0.94 – 3.14
(2) Elementary school teacher	2.05	0.50	16.98	1	0.000	7.78	2.93 – 20.63
Accountability policy							
(0) State – *Low stake*			24.94	3	**0.000**		
(1) State – *High stake*	1.67	0.38	19.78	1	0.000	5.31	2.55 – 11.09
(2) Municipal – *Low stake*	-0.19	0.48	0.16	1	0.687	0.83	0.33 – 2.10
(3) Municipal – *High stake*	0.43	0.51	0.71	1	0.399	1.53	2.93 – 20.63

Source: Prepared by the authors based on the microdata from the research "The conditions of provision of public basic education in four states of Northeast Brazil".

FINAL CONSIDERATIONS

The comparison of the influence of different stages of Basic Education on the perception of an increased appreciation for teaching was observed in the case of Portuguese Language, but not in Mathematics. Specifically for Portuguese language instruction, teachers in the final years of Elementary School were more likely to recognize this greater appreciation.

For both Portuguese and Mathematics, teachers in the early years of Elementary School were more likely to perceive an increased appreciation for these subjects compared to those who teach only one of the subjects. It is important to note that from 1st to 5th grade, there is no division of teachers by subject; one teacher is typically responsible for teaching all subjects to the students.

Regarding accountability policies, the chance of a teacher in the State – High-stakes group perceiving a greater appreciation for the teaching of Portuguese and Mathematics is higher than that of a teacher in the State – Low-stakes network. In both cases, the chances increase by more than 400%.

Accountability policies often focus on specific subjects to evaluate student performance, which leads to classifying schools and teachers based on these results. This approach can create divisions within the teaching community, undermining the collaborative efforts crucial for the comprehensive development of education. According to Seabra et al. (2022), the foundation of teacher collaboration lies in interdependence. This means that collaboration involves individuals working together to achieve greater results than they could accomplish alone. In this context, Day (2004) emphasizes that effective teacher collaboration necessitates that teachers observe each other's daily practices, engage in discussions and reflections about these practices, and collectively plan and assess their work. Ultimately, this joint investigation of teaching and learning processes helps achieve common goals that have been agreed upon collectively, where teachers interact as equals rather than in hierarchical roles (Seabra et al., 2022, p. 646).

The factors influencing teacher appreciation are quite broad. However, the focus on teaching Mother Tongue and Mathematics—driven by current evaluation processes—may be creating new hierarchies and divisions among the teaching staff (Oliveira, 2022). This shift has led to the development of new pedagogical practices and organizational procedures that change school routines and educational processes for both teachers and students. These are significant cultural changes that must be understood and interpreted in the context of the political factors guiding these processes, particularly concerning the dominant concept of quality in education. Such changes also affect the school climate, which is defined as an emotional environment that fosters a sense of belonging and self-esteem (Block, 2011).

The International Labour Organization (ILO) reinforces the emphasis on the need to prioritize human resource development in educational systems. In this regard, it considers that, among the strategies that will directly contribute to improving the quality of education, is sustained investment in the professional development of teachers and in improving their working and employment conditions. With this, it reaffirms that the status of teachers and the status of education are strongly related, and that their credibility among families and community members, and the trust in their concern for the well-being of children, is intimately linked to their ability to provide the quality of education that families seek for their children.

In conclusion, it is important to emphasize that teacher appreciation is closely linked to various factors. These include employment conditions, salary, career opportunities, and subjective elements that shape social relationships within the school. Consequently, any changes in the school climate, the teaching process, and other aspects of school culture resulting from new evaluation methods must be analyzed while taking into account competing conceptions of education.

REFERENCES

ASIA SOCIETY. *What is PISA and Why Does it Matter?* New York: Asia Society, n.d. Disponível em: <https://asiasociety.org/global-cities-education-network/what-pisa-and-why-does-it-matter>. Acesso em: 10/11/2023.

BAUER, Adriana. "Novas" relações entre currículo e avaliação? recolocando e redirecionando o debate. *Educ revista*, v. 36, e223884, 2020. <https://doi.org/10.1590/0102-4698223884>

BLOCK, Michael. School Climate. In: GOLDSTEIN, Sam; NAGLIERI, Jack. (Orgs.). *Encyclopedia of Child Behavior and Development*. V. 1. Boston, MA: Springer, 2011, p. 129-162.

DAY, Christopher. *A passion for teaching*. London: Routledge Falmer, 2004.

FARDELLA, Carla; SISTO, Vicente. Nuevas regulaciones del trabajo docente en Chile: discurso, subjetividad y resistencia. *Psicologia & Sociedade*, v. 27, n. 1, p. 68-79, 2015. <https://doi.org/10.1590/1807-03102015v27n1p068>

HAIR, Joseph F.; BLACK, William C.; BABIN, Barry J.; ANDERSON, Rolph E.; TATHAM, Ronald L. *Análise Multivariada de Dados*. Tradução Adonai Schlup Sant'Anna. 6. ed. Porto Alegre: Bookman, 2009.

HOLLOWAY, Jessica; SØRENSEN, Tore B.; VERGER, Antoni. Global perspectives on high-stakes teacher accountability policies: An introduction. *Education Policy Analysis Archives*, v. 25, n. 85, 2017. <https://doi.org/10.14507/epaa.25.3325>

HOSMER, David W.; LEMESHOW, Stanley. *Applied Logistic Regression*. Hoboken, New Jersey: John Wiley & Sons, Inc., 1989.

LESSARD, Claude. L'obligation de resultats en éducation: de quoi s'agit-il? Le contexte québécois d'une demande sociale, une rhétorique du changement et une extension de la recherche. In: LESSARD, Claude; MEIRIEU, Philippe (Orgs.). *L'obligation de resultats en éducation*. Montréal: Les Presses de l'Université Laval, p. 23–48, 2004.

LEVITT, Ruth; JANTA, Barbara; WEGRICH, Kai. *Accountability of teachers:* Literature review. Cambridge: RAND Corporation, 2008.

MAROY, Christian; VOISIN, Annelise. As transformações recentes das políticas de accountability na educação: desafios e incidências das ferramentas de ação pública. *Educação & Sociedade*, v. 34, n. 124, p. 881–901, jul./set. 2013. <https://doi.org/10.1590/S0101-73302013000300012>

MEIRIEU, Philippe. L'école entre la pression consumériste et l'irresponsabilité sociale. In: LESSARD, Claude; MEIRIEU, Philippe (Orgs.). *L'obligation de résultats en éducation*. Québec: Les Presses de l'Université Laval, p. 5–21, 2004.

MOLSTAD, Christina E.; PETTERSSON, Daniel; PROITZ, Tine S. Infusão suave: a construção dos "professores" no âmbito do Pisa. In: OLIVEIRA, Dalila A.; CARVALHO, Luis Miguel; LEVASSEUR, Louis; MIN, Liu; NORMAND, Romuald (Orgs.). *Políticas Educacionais e a reestruturação da profissão do educador:* perspectivas globais e comparativas. Petrópolis: Editora Vozes, p. 21–38, 2019.

OLIVEIRA, Dalila A. A reestruturação da profissão docente no contexto da nova gestão pública na América Latina. *Rev. FAEBA – Ed. e Contemp.*, Salvador, v. 27, n. 53, p. 43–59, set./dez. 2018. <https://doi.org/10.21879/faeeba2358-0194.2018.v27.n53.p43-59>

OLIVEIRA, Dalila A. Los sindicatos de educación frente a los desafíos de la nueva gestión pública. *Polifonías Revista de Educación*, v. 1, p. 33–60, 2017. Disponível em: < https://repositorio.ufmg.br/server/api/core/bitstreams/5febb2fe-73af-4ed0-ba98-9cebb1c8860d/content>. Acesso em: 10/11/2023.

OLIVEIRA, Dalila A. The teaching profession in Brazil: Inherited segmentations and reconfigurations in neoliberal times. In: DUMAY, Xavier; BURN, Katharine (Eds.). *The Status of the Teaching Profession:* Interactions Between Historical and New Forms of Segmentation. 1. ed. London: Routledge, p. 123–151, 2022.

OLIVEIRA, Dalila A.; CARVALHO, L. M. Performance-based accountability in Brazil: Trends of diversification and integration. In: GREK, Sotiria; MAROY, Christian; VERGER, Antoni (Orgs.). *World Yearbook of Education 2021*: Accountability and Datafication in the Governance of Education. 1. ed. New York: Routledge, p. 157–173, 2021.

OLIVEIRA, Dalila A.; CLEMENTINO, Ana. M. As políticas de responsabilização na educação básica nos estados do Nordeste. In: OLIVEIRA, Dalila A.; DUARTE, Adriana M.; RODRIGUES, Cibele L. (Orgs.). *A Política educacional em contexto de desigualdade*: uma análise das redes públicas de ensino da região Nordeste. 1. ed. Campinas: Mercado de Letras, p. 523–562, 2019.

OLIVEIRA, Dalila A.; DUARTE, Adriana M.; RODRIGUES, Cibele. L. *A Política Educacional em Contexto de Desigualdade*. Campinas, SP: Mercado de Letras, 2019.

RUZ, Felipe A. Fortalecer la profesión docente – El camino de la política de evaluación e incentivos económicos hace sentido al profesorado? In: CORNEJO, Rodrigo; CASTAÑEDA, Lorena; ABARCA, Waldo; ACUÑA, Felipe; CORRIENTE Popular de Educación; COLECTIVO Diatriba; MOVIMIENTO por la Unidad Docente (Orgs.). *Trabajo y subjetividade docente en el Chile neoliberal*: Un diálogo entre la investigación académica y los nuevos movimientos docentes. Santiago: Flacso/EPE/Red Estrado, p. 83–102, 2014.

SEABRA, Filipa; ABELHA, Marta; HENRIQUES, Susana; MOURAZ, Ana. Policies and practices of external evaluation of schools: spaces for teacher collaboration? *Ensaio: Avaliação E Políticas Públicas Em Educação*, v. 30, n. 116, 644–668, jul./set. 2022. <https://doi.org/10.1590/S0104-40362022003003442>

SOBE, Noah. Prefácio. In: OLIVEIRA, Dalila A.; CARVALHO, Luis M.; LEVASSEUR, Loui.; MIN, Liu; NORMAND, Romuald (Orgs.). *Políticas Educacionais e a reestruturação da profissão do educador*: perspectivas globais e comparativas. Petrópolis: Editora Vozes, p. 17–20, 2019.

VERGER, Antoni; NORMAND, Romuald. Nueva gestión pública y educación: Elementos teóricos y conceptuales para el estudio de un modelo de reforma educativa global. *Educ. Soc.*, Campinas, v. 36, n. 132, p. 599–622, jul./set. 2015. <https://doi.org/10.1590/ES0101-73302015152799>

ZATTI, Antonio M.; MINHOTO, Maria Angélica P. Política de avaliação do desempenho docente nas redes estaduais de ensino do Brasil. *Educ. pesquisa*, v. 45, e188993, 2019. <https://doi.org/10.1590/S1678-4634201945188993>

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The data will be available upon request to the authors.

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Author 1 - Project coordinator, active participation in the article's structure, discussion of results, and writing.
Author 2 - Database systematization and development of statistical analyses, as well as active participation in the discussion of results and writing.
Author 3 - Active participation in the article's structure, discussion of results, and writing.

CONFLICT OF INTEREST DECLARATION

The authors declare that there is no conflict of interest with this article.