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## Forum: Practical Perspectives

# The end of the dissemination of Enem results per school, a brief reflection on the evaluation of public policies and access to information

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This study aims to create a favorable scenario for the discussion about the decision of the Ministry of Education (MEC) to stop disseminating the results of the National High School Examination (Enem) per school. At first, the issue was contextualized and problematized under legal and public administration aspects. Then, statistics were compiled from the organization of data obtained in the “per-school” spreadsheets of previous years, to demonstrate the contribution of this information to the evaluation of the new public policies focused on education. The conclusion presents the main results of the quantitative data analysis, and from there the main aspects of the theoretical discussion are revisited.

**Keywords:** Enem results per school; evaluation of public policies; access to information.

## O fim da divulgação dos resultados do Enem por escola: uma breve reflexão sobre a avaliação das políticas públicas e o acesso à informação

Este estudo tem o objetivo de montar um cenário favorável à discussão sobre a decisão do Ministério da Educação (MEC) de deixar de divulgar os resultados do Exame Nacional do Ensino Médio (Enem) por escola. Em um primeiro momento, foi contextualizada e problematizada a questão sob aspectos jurídicos e de administração pública. A seguir, foram elaboradas estatísticas a partir da organização de dados obtidos nas planilhas “por escola” de anos anteriores, visando demonstrar a contribuição dessas informações para a avaliação das novas políticas públicas voltadas à educação. Na conclusão, retomaram-se os principais aspectos da discussão teórica apresentando os resultados mais relevantes da análise quantitativa de dados.

**Palavras-chave:** resultados do Enem por escola; avaliação de políticas públicas; acesso à informação.

## El fin de la divulgación de los resultados del Enem por escuela, una breve reflexión sobre la evaluación de las políticas públicas y el acceso a la información

Este estudio tiene el objetivo de montar un escenario favorable a la discusión sobre la decisión del Ministerio de Educación (MEC) de dejar de divulgar los resultados del Exame Nacional do Ensino Médio (Enem) por escuela. En un primer momento, fue contextualizada y problematizada la cuestión bajo aspectos jurídicos y de administración pública. A continuación, se elaboraron estadísticas a partir de la organización de datos obtenidos en las planillas “por escuela” de años anteriores, buscando demostrar la contribución de esas informaciones para la evaluación de las nuevas políticas públicas dirigidas a la educación. En la conclusión, se retomaron los principales aspectos de la discusión teórica presentando los resultados más relevantes del análisis cuantitativo de datos.

**Palabras clave:** resultados del Enem por escuela; evaluación de políticas públicas; acceso a la información.

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[Translated version] Note: All quotes in English translated by this article's translator.



## 1. CHANGE IN EDUCATIONAL PUBLIC POLICY

The change in the Secondary Education Public Policy introduced by Provisory Law No. 746/2016 determined a significant structural change in Brazilian basic education that has triggered national debates on the issue.

Initially, it was questioned whether a Provisory Law (MP) was legitimate in this case, i.e., whether it was a suitable legislative instrument to establish public policy of this magnitude. The matter was submitted to the Brazilian Supreme Federal Court (STF), which responded in the records of the direct unconstitutionality action (Adin) No. 5599/2016.

Among the arguments against the Provisory Law, it is worth highlighting the following: debates on the subject were insufficient, the legislative instrument was inappropriate to establish Public Policy, and the necessary constitutional requirements for an MP under the rules of Article 62 of the Federal Constitution were absent.

In Opinion No. 313893/2016, the then Attorney General Rodrigo Janot assented to the Adin, arguing that legislative change in educational matters was incompatible with the urgency of Provisory Laws, since the duration of the instrument (up to 120 days) “inhibits serious, consistent, in-depth debates such as those required by the subject” (Opinion No. 313893/2016-AsJConst/SAJ/PGR).

Despite such stances against the changes, the new Public Policies became consolidated through the conversion of MP No. 746/2016 into Law No. 13415 / 2017, which changed the national education guidelines and framework, altered the law that regulates the Fundeb and established, at the federal level, the Policy for Promoting Full Time Secondary Education.

According to the new law, secondary education disciplines are now divided in five knowledge areas: languages, mathematics, natural sciences, humanities and social sciences, and technical/vocational education. It is worth highlighting that the new rules apply both to public and private education.

In order to adapt to the new reality, Brazilian states set about revising their regulation on the matter. The state of Mato Grosso do Sul, for example, passed Law No. 4973/2016, which created the Full-Time School Program (Authorship School). The general goal of this program is to increase school hours and promote the development of policies for improving teaching quality and students’ integral education.

In this changing scenario, the MEC announced changes in the National Exam of Upper Secondary Education (Enem) 2017, among which that the National Institute for Educational Studies and Research Anísio Teixeira (Inep) will stop publishing the spreadsheets containing Enem results by school as of 2017. According to statements by the then Inep’s chairman, “the goal of Enem is to assess students’ knowledge, not the school they attend”.

This can be considered a controversial decision that limits access to information and might compromise school accountability practices, since results by school are a source of relevant data to the basic education assessment process, besides its having become consolidated in social collective knowledge as an educational assessment mechanism, even though it is not.

Based on Travitzski’s (2013) reflection, one of Enem’s goals is to allow comparison between Brazilian schools. According to the author, although the Exam was not originally designed to

that end, it came to be valued by society and has become a central piece in the Brazilian school accountability policy.

Brazil currently has a moderate accountability policy in which the Enem school ranking is perhaps the most important instrument, alongside the Ideb. [...] According to Pisa 2009 results, the mere publication of schools' performance, when combined with school autonomy, is usually a successful strategy for improving their quality. [Travitzski et al., 2013:252]

On the other hand, while Travitzski (2013) recognizes the exam's importance, he suggests that "publishing the Enem ranking may not produce the expected benefits since schools would likely end up being evaluated for things they have little control over, which takes apart the whole accountability system logic" (Travitzski, 2013:254).

In this respect, Oliveira says that although the ENEM was designed as a student assessment exam, over time it had its scope expanded, becoming a measure for competition between schools, particularly in the private sector. "In the 2014 edition, the Inep began to work on the School Enem, which the Institute saw as a form to assist students, parents, teachers, school principals and educational managers" (Oliveira, 2016:195).

According to the author, "the fact that the INEP analyzes results by school allows the emergence of a trading market around the Enem". According to her, "already in the first edition, more than a few frauds were carried out to provide a high classification for private schools"; moreover, she shows concern with the fact that the Enem has influenced the orientation of secondary education curriculums to meet the exam's requirements (Oliveira, 2016:196).

That heavy influence of national assessment exams on school curriculums was also addressed in the study by Bonamino and Souza, which classified the exams in three different generations: first, second and third generation assessments, according to the degree of responsibility attributed to the agents involved in the process (Bonamino and Souza, 2012).

Even considering the arguments against the Enem, as well as its appropriation as a market mechanism by private schools, the fact that no substitute for it has been presented indicates its consolidation in the Brazilian educational context. Therefore, the test's results could be preserved since they are a source of relevant information that can be used in the new education public policies' assessment process.

Although the Ministry of Education has affirmed that the National Basic Education Assessment System (Saeb) for secondary education will become universal and no longer sample-based both for public and private schools — which will allow calculating the Ideb by school —, the non-publication of results by school as of 2017 represents the loss of an index already consolidated by society, besides breaking the continuity of the data history series.

With regard to the absence of this analysis instrument, it is worth highlighting the contribution of Cavalcanti and De Sordi in evidencing that public policy implementation assessment has received little attention from managers and/or researchers. The researchers underscore the need for a broad engagement of the social actors involved in the decision-making processes, which can bring "important

contributions for understanding research of educational policy, as well as defining methodologies, in order to assess the policy implementation phase” (Cavalcanti et al., 2013:110).

Still according to Cavalcanti (2013), public policies must be concomitantly evaluated throughout its phases, from formulation to implementation to the evaluation of results and impacts. Therefore, the need for public policies to be constantly monitored becomes clear, as well as the importance of social control over public administration, so that citizens can realize the democratic and republican ideals by orienting the administration to meet the collective interests. Considering the formulation, implementation and execution of the new guidelines on secondary education, it is necessary to improve the control mechanisms to determine whether the intended results are being achieved.

Given the far-reaching publication of Enem results by school in our society, one can see that the non-disclosure of such data indicates a regression in the public sector’s transparency policy. After all, this is information of collective interest, whose limitation can compromise the assessment of public policies and represent, in theory, a violation of the fundamental right set forth in Article 5, item 33, of the Federal Constitution of 1988.

Likewise, among the guidelines set forth in the Access to Information Law (Law No. 12527/2011, which regulates the right of access to information under the Federal Constitution), it is worth highlighting the following: observance of public disclosure as the general rule and secrecy as an exception, disclosure of information of public interest regardless of requests, and the development of social control over public administration.

It is also noteworthy that the MEC’s announcement that it would stop publishing results by school was not accompanied by any proper formal explanation of its justifications. Thus, if we consider the agency’s decision as a public administration’s unilaterally manifested disposition which has restricted citizens’ right of access to information, this characterizes a governmental act which, according to article 50 of Law No. 9784/1999, should have been motivated in a clear, explicit and coherent manner, indicating the facts and legal foundations, which has not occurred to the present in the case at hand.

## **2. ANALYSIS OF ENEM SPREADSHEET DATA “BY SCHOOL”**

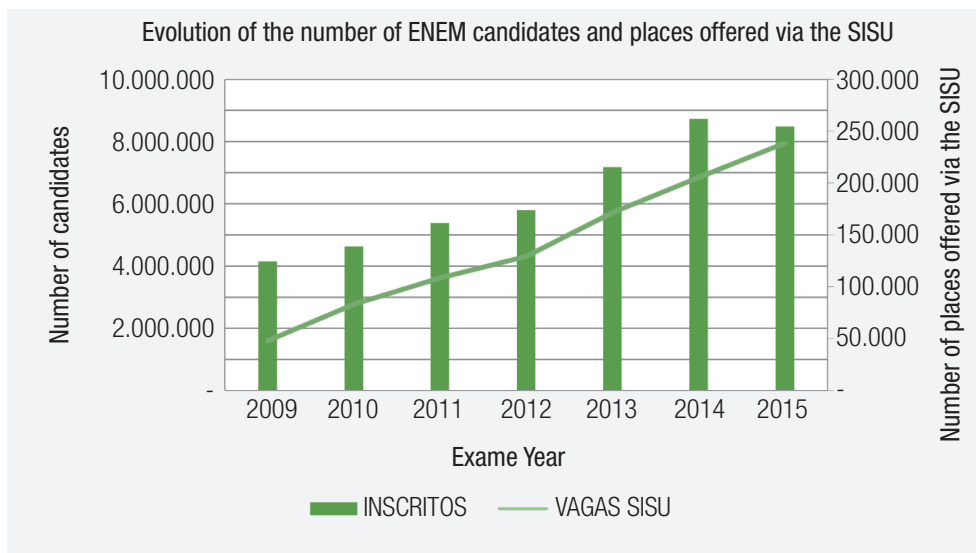
### **2.1 THE ENEM’S HISTORY**

The National Exam of Upper Secondary Education was created in 1998 to assess students’ academic achievement at the end of basic education. In the exam’s first edition, 115,600 candidates took the test, which comprised 63 interdisciplinary questions and an essay.

In 2009, the exam was structurally changed to comprise 180 objective questions divided in four knowledge areas: Natural Sciences and their Technologies; Human Sciences and their Technologies; Languages, Codes and their Technologies; and Mathematics and its Technologies. In the same year, the Unified Selection System (Sisu) was created, which consists of an online platform developed by the Ministry of Education to manage admission to the higher education institutions that opted into the program.

Graph 1 shows the evolution of the number of Enem candidates over time, as well as the number of college places offered via the Sisu from 2009 to 2015.

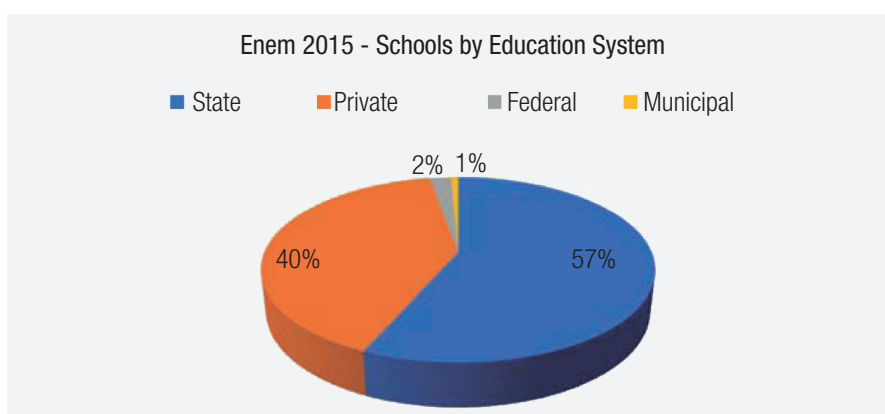
## GRAPH 1 HISTORY SERIES: NUMBER OF CANDIDATES AND PLACES OFFERED VIA THE SISU FOR 2009-2015



Source: MEC/INEP.

Graph 2 shows the approximate percentage of schools that had their results published by the Inep, by education system (i.e., federal, state, private or municipal).

## GRAPH 2 PERCENTAGE OF SCHOOLS BY EDUCATION SYSTEM



Fonte: MEC/INEP.

As seen in graph 2, approximately 57% of the schools evaluated belong to states' education systems, while 40% are private, 2% federal and only 1% municipal. In absolute figures, of the 15,597 schools participating in the Enem 2015, 8,836 are state, 6,324 private, 328 federal and 109 municipal schools.

## 2.2 RESULTS BY EDUCATION SYSTEM

Tables 1, 2, 3 and 4, show results for the different knowledge areas by education system (i.e., state, federal or private).

**TABLE 1** AVERAGE SCORES FOR ALL PARTICIPANT SCHOOLS BY KNOWLEDGE AREA

Average score for all schools	2014	2015	%
Language. Codes and their Technologies	520	515	-0.9%
Essay	515	564	9.4%
Mathematics and its Technologies	496	493	-0.6%
Human Sciences and their Technologies	556	567	1.9%
Natural Sciences and their Technologies	499	491	-1.6%

Source: MEC/Inep.

**TABLE 2** STATE SCHOOLS' AVERAGE SCORES BY KNOWLEDGE AREA

Average Score — State Schools	2014	2015	%
Language. Codes and their Technologies	496	489	-1.4%
Essay	454	517	13.7%
Mathematics and its Technologies	455	452	-0.6%
Human Sciences and their Technologies	530	542	2.2%
Natural Sciences and their Technologies	470	461	-1.9%

Source: MEC/Inep.

**TABLE 3** PRIVATE SCHOOLS' AVERAGE SCORES BY KNOWLEDGE AREA

Average Score — Private Schools	2014	2015	%
Language. Codes and their Technologies	552	550	-0.5%
Essay	599	626	4.6%
Mathematics and its Technologies	551	546	-0.8%
Human Sciences and their Technologies	591	599	1.4%
Natural Sciences and their Technologies	538	530	-1.4%

Source: MEC/Inep.

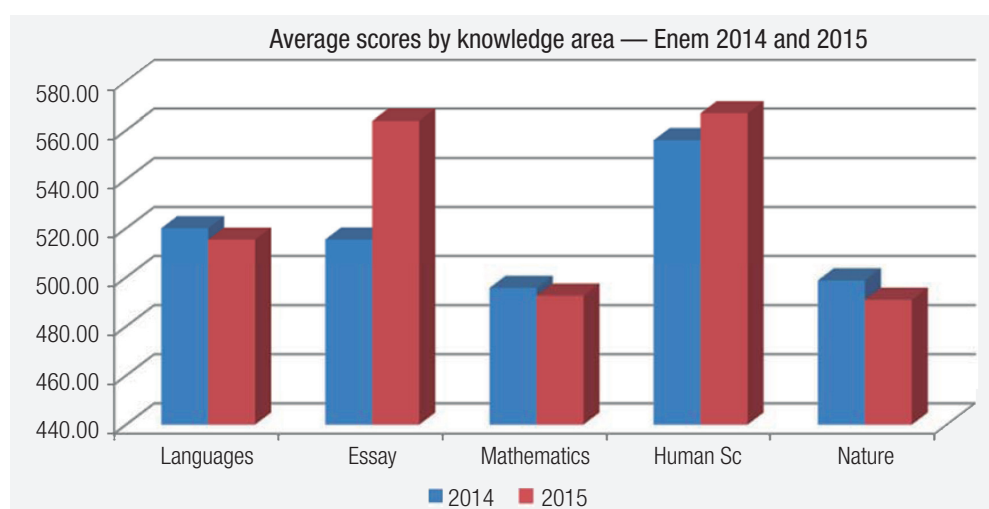
**TABLE 4** FEDERAL SCHOOLS' AVERAGE SCORES BY KNOWLEDGE AREA

Average Score — Federal Schools	2014	2015	%
Language. Codes and their Technologies	556	550	-1.1%
Essay	606	624	3.0%
Mathematics and its Technologies	568	551	-3.0%
Human Sciences and their Technologies	602	607	0.8%
Natural Sciences and their Technologies	546	531	-2.8%

Source: MEC/Inep.

From examining tables 1, 2, 3 and 4, we can see that in the 2014 and 2015 exams, federal and private schools' average scores for all knowledge areas and essay were higher than those of state schools.

It is noteworthy that, during the period analyzed, schools' essay average score increased considerably, particularly for state schools, where the average increased by 13.7% compared to the previous year, as shown in graph 3.

**GRAPH 3** COMPARISON OF AVERAGE SCORES BY KNOWLEDGE AREA

Source: MEC/Inep.

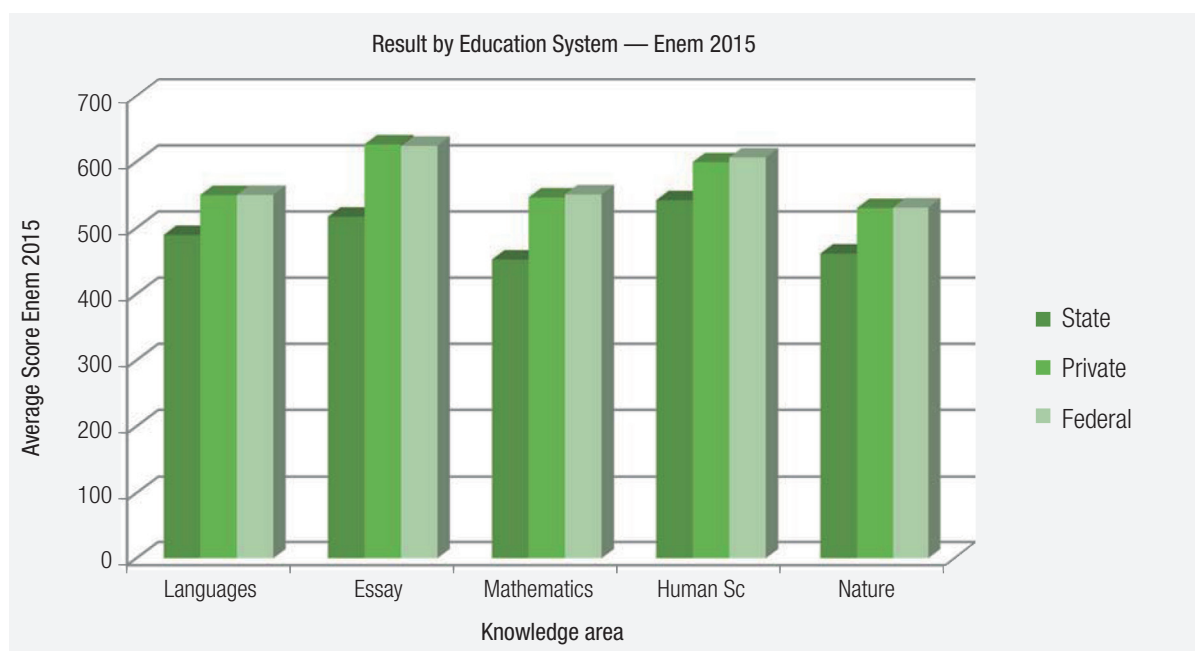
Graph 4 illustrates schools' average scores in the Enem 2015 for each knowledge area, separated according to education system.

From examining graph 4, we can see some homogeneity between the results achieved by private and federal schools; in contrast, state schools achieved an average general result<sup>1</sup> that is inferior to those of federal and private schools by 13.98% and 13.66%, respectively.

According to the analysis of data from the Inep for the 2014 and 2015 exams, we can see that the national average performance for the four knowledge areas and essay varied significantly according to education system (federal, state or private).

<sup>1</sup> Overall Average Score  $\bar{x} = \left(\frac{1}{5} \cdot \sum \text{averages for the four knowledge areas and composition}\right)$ .



**GRAPH 4** COMPARISON OF AVERAGE RESULTS BY EDUCATION SYSTEM

Source: MEC/Inep.

### 2.3 CORRELATION STUDY

With regard to relationships between variables, if we wish to establish a mathematical model that can predict the average value of a certain variable in function of the known values of other variables, we can use the “least squares method”, in which we seek to fit data to linear equations of the type  $y = ax + b$ , where “a” and “b” are the linear and angular coefficients,<sup>2</sup> respectively (Freund, 2006).

In the present work, we chose to determine data adherence to the least squares straight line by using the Pearson correlation coefficient,<sup>3</sup> which measures the degree of linear correlation between two variables and can take on any value between -1 and 1, so that the closer to the extremes, the stronger the linear association between variables; on the other hand, the closer to zero, the lower the degree of association. The sign (+ or -) indicates the correlation direction (i.e., negative or positive), so that in a positive correlation, increasing the value of one variable implies an increase in the other; while in a negative correlation, an increment in one implies a reduction in the other (Paranhos et. al., 2014).

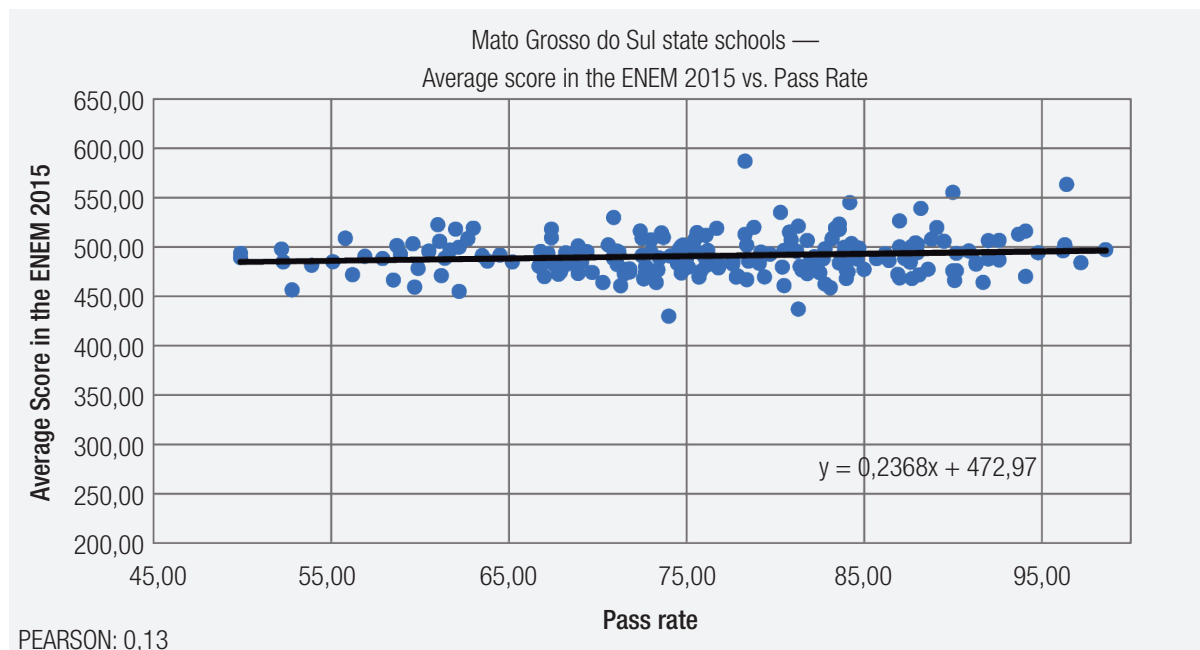
To investigate the different correlations between the variables, based on data published by INEP, we decided to use the method with the results achieved by state schools in the State of Mato Grosso do Sul in the 2015 exam, as shown in Graphs 5, 6, 7 and 8.

<sup>2</sup> In the least squares method, the coefficients “a” and “b” in the straight line that minimizes deviation can be obtained through the following system of equations:  $\Sigma y = na + b(\Sigma x)$  e  $\Sigma xy = a(\Sigma x) + b(\Sigma x^2)$ .

<sup>3</sup> Pearson correlation coefficient (r):

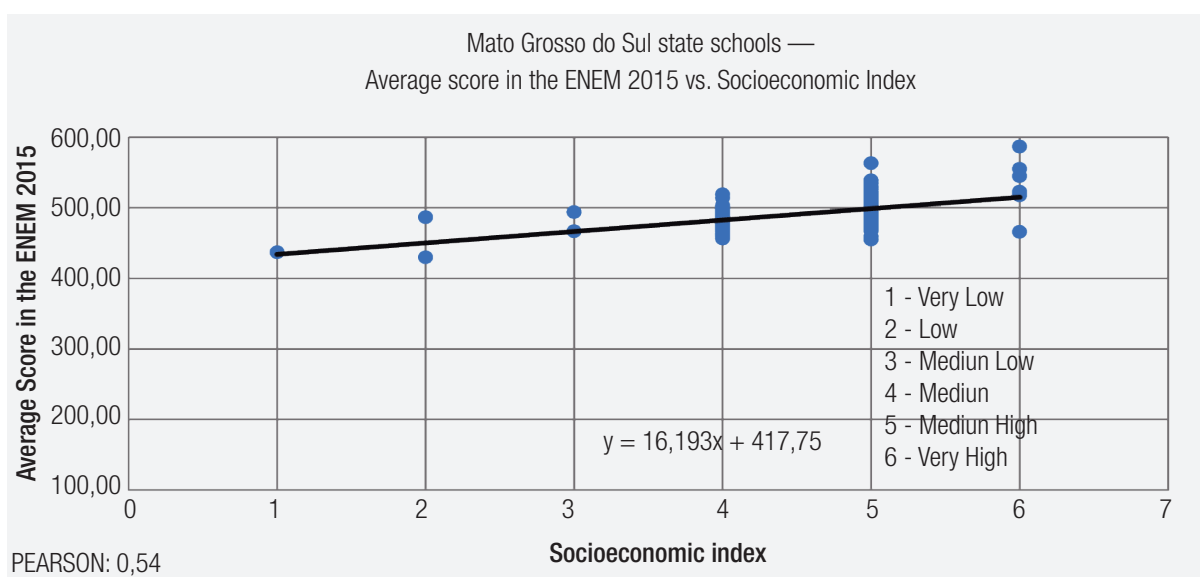
$$r = \frac{n \sum_{i=1}^n x_i \cdot y_i - \sum_{i=1}^n x_i \cdot \sum_{i=1}^n y_i}{\sqrt{n \sum_{i=1}^n x_i^2 - (\sum_{i=1}^n x_i)^2} \cdot \sqrt{n \sum_{i=1}^n y_i^2 - (\sum_{i=1}^n y_i)^2}}$$

**GRAPH 5** MATO GROSSO DO SUL STATE SCHOOLS' AVERAGE SCORE IN THE ENEM 2015 IN RELATION TO THE PASS RATE



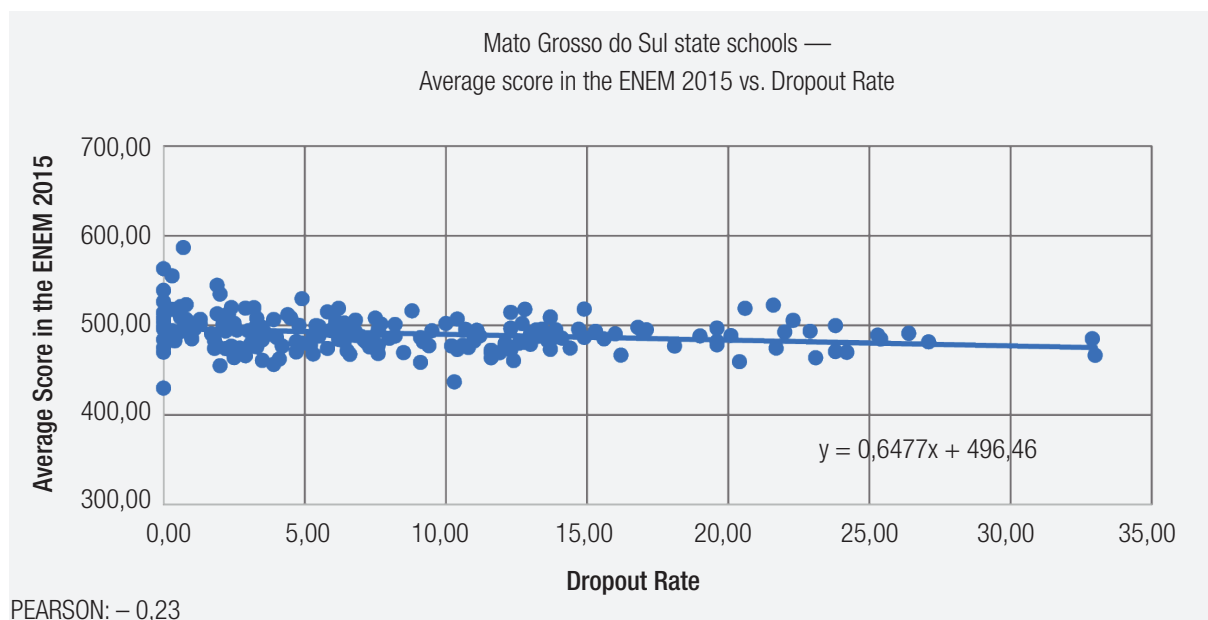
Source: MEC/Inep.

**GRAPH 6** MATO GROSSO DO SUL STATE SCHOOLS' AVERAGE SCORE IN THE ENEM 2015 IN RELATION TO THE SOCIOECONOMIC INDEX



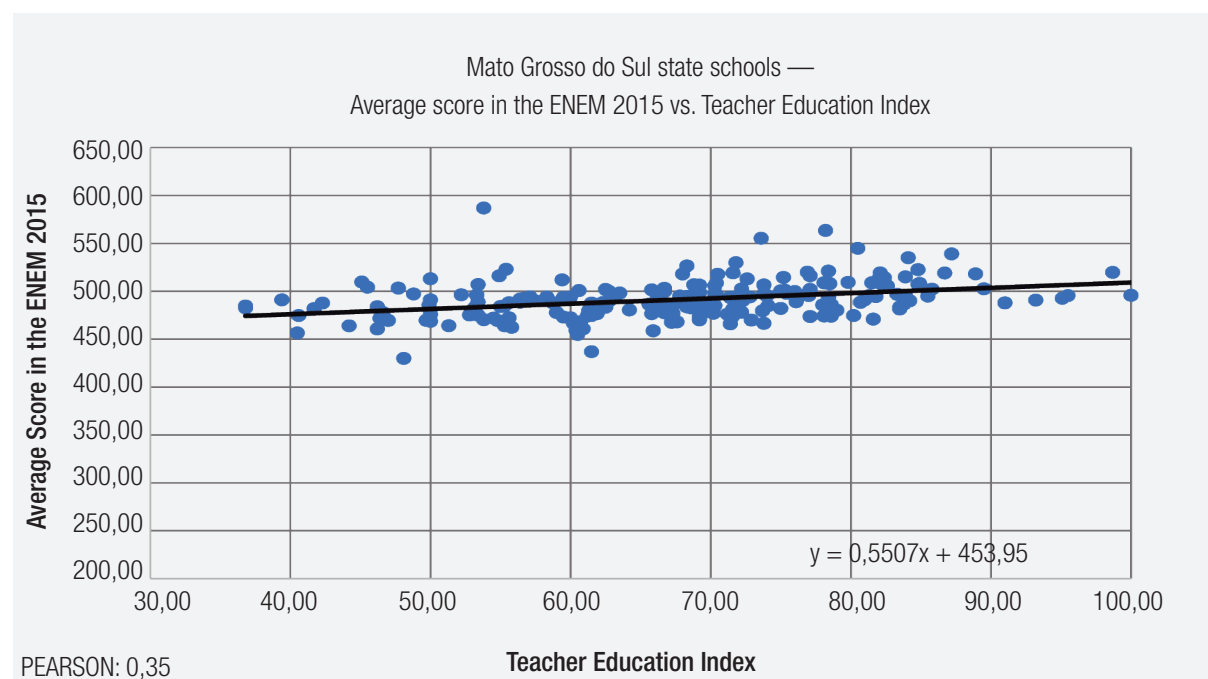
Source: MEC/Inep.

# GRAPH 7 MATO GROSSO DO SUL STATE SCHOOLS' AVERAGE SCORE IN THE ENEM 2015 IN FUNCTION OF THE DROPOUT RATE



Source: MEC/Inep.

# GRAPH 8 DISPERSION GRAPH — MATO GROSSO DO SUL STATE SCHOOLS' AVERAGE SCORE IN THE ENEM 2015 IN FUNCTION OF THE TEACHER EDUCATION INDEX



Source: MEC/Inep.

Although the correlation coefficients did not suggest any significant linear correlation (values close to the 1 or -1 extremes) which would allow to reasonably estimate the values of the variables through the regression equations, still, results become relevant when analyzed from the viewpoint of the correlation sign (+ or -).

From examining the results shown in graphs 5, 6, 7 and 8, we can see that:

- a) the variables “*passing rate*” and “*average score in the Enem 2015*” are positively correlated ( $r = + 0.13$ ), suggesting that an increase in the passing rate tends to increase the school’s average score in the Enem.
- b) the variables “*socioeconomic index*” and “*average score in the Enem 2015*” are positively correlated ( $r = + 0.54$ ), indicating that the higher the socioeconomic status, the better the scores in the exam. Candidates’ socioeconomic status was collected from the MEC, based on information provided by the students themselves, and it is divided in seven levels (1 to 7). Using regression analysis, we found that the social context in which the school is situated directly affects exam results.
- c) the variables “*dropout rate*”<sup>4</sup> and “*average score in the Enem 2015*” are negatively correlated ( $r = - 0.23$ ), i.e., the higher the dropout rate, the lower the school’s average score in the Enem.
- d) the variables “*teacher education index*” and “*average score in the Enem 2015*” showed a positive correlation ( $r = + 0.29$ ), suggesting that teacher education has a direct influence on exam results. This index was designed by the MEC, using data from the School Census on Basic Education, and it shows the percentage of teachers working in secondary education who have an academic background that is adequate to the subject they teach.

## 2.4 THE GREATER THE ESTIMATED AMOUNT OF FUNDS FOR THE FUNDEB, THE BETTER THE PERFORMANCE AT THE ENEM?

In this section, we question whether there is a linear correlation between the estimated figures allocated to the Fund for the Maintenance and Development of Basic Education and Enhancement of Education Professionals (Fundeb) and state schools’ results in Enem 2015 objective tests, in all Brazilian states.

To investigate the linear correlation between Fundeb’s estimated annual per-student amounts<sup>5</sup> in 2015 and Enem results, we designed table 6.

<sup>4</sup> Dropout Rate = (100 — Pass Rate — Grade Retention Rate).

<sup>5</sup> Website available at: <[www.fnde.gov.br/financiamento/fundeb/fundeb-dados-estatisticos](http://www.fnde.gov.br/financiamento/fundeb/fundeb-dados-estatisticos)>. Accessed on: 21 Apr. 2017.

**TABLE 6**      **APPENDIX I — INTER-MINISTRY ORDINANCE NO. 17, OF DECEMBER 29, 2014 — FUNDEB 2015 ESTIMATED ANNUAL PER-STUDENT AMOUNTS AND ENEM 2015 AVERAGE SCORES<sup>6</sup> — STATE SCHOOLS — OBJECTIVE TESTS**

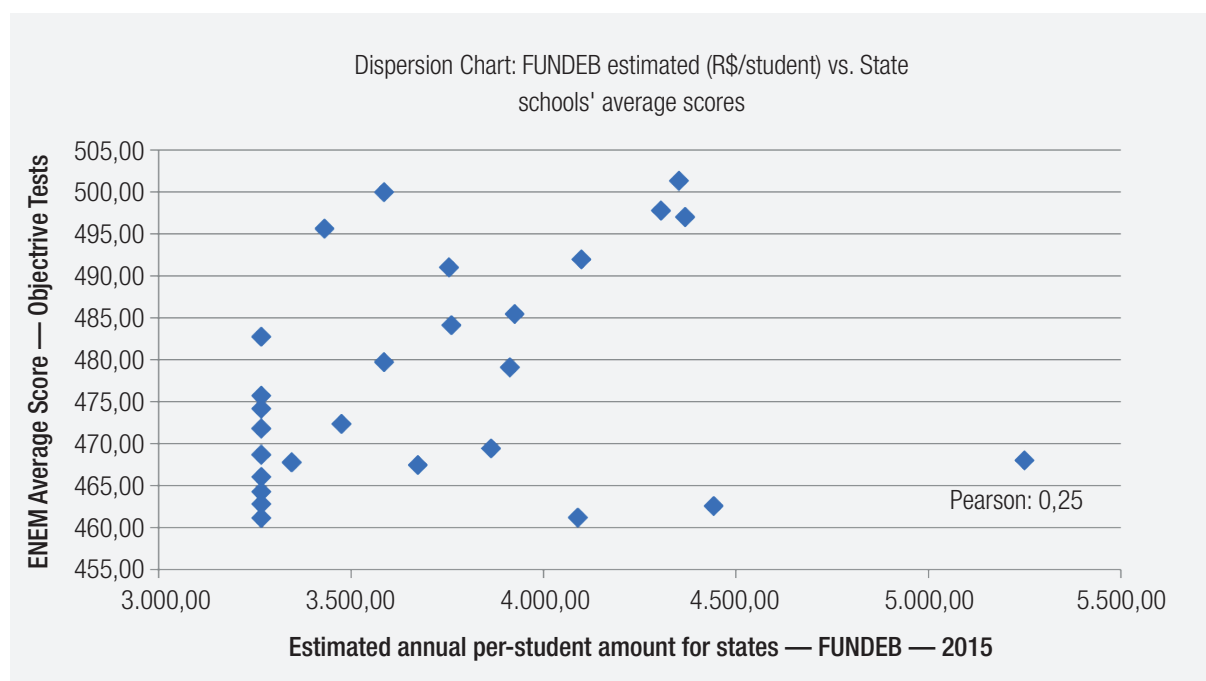
States	Secondary Education (state education system)			Estimated Amount (R\$/student)	Enem 2015 Average Score	No. of Schools
	Urban	Rural	Full-Time			
SP	4,238.13	4,407.65	4,407.65	4,351.14	501.33	1,445
PR	3,492.34	3,632.03	3,632.03	3,585.47	499.99	374
DF	4,192.77	4,360.48	4,360.48	4,304.58	497.79	82
RS	4,253.66	4,423.80	4,423.80	4,367.09	497.02	786
MG	3,341.62	3,475.29	3,475.29	3,430.73	495.65	1,054
SC	3,991.28	4,150.93	4,150.93	4,097.71	491.96	439
RJ	3,656.85	3,803.13	3,803.13	3,754.37	491.01	619
MS	3,822.56	3,975.47	3,975.47	3,924.50	485.45	205
ES	3,662.76	3,809.27	3,809.27	3,760.43	484.12	270
PE	3,181.64	3,308.91	3,308.91	3,266.49	482.76	385
RO	3,492.52	3,632.22	3,632.22	3,585.65	479.72	123
GO	3,810.94	3,963.37	3,963.37	3,912.56	479.10	399
BA	3,181.64	3,308.91	3,308.91	3,266.49	475.72	326
PA	3,181.64	3,308.91	3,308.91	3,266.49	474.18	160
MT	3,384.51	3,519.89	3,519.89	3,474.76	472.35	200
PB	3,181.64	3,308.91	3,308.91	3,266.49	471.79	257
SE	3,762.85	3,913.37	3,913.37	3,863.20	469.45	103
CE	3,181.64	3,308.91	3,308.91	3,266.49	468.68	592
RR	5,112.49	5,316.99	5,316.99	5,248.82	467.99	25
RN	3,258.58	3,388.92	3,388.92	3,345.47	467.77	149
AC	3,577.98	3,721.10	3,721.10	3,673.39	467.45	40
AM	3,181.64	3,308.91	3,308.91	3,266.49	466.03	109
PI	3,181.64	3,308.91	3,308.91	3,266.49	464.26	225
MA	3,181.64	3,308.91	3,308.91	3,266.49	462.81	206
AP	4,326.13	4,499.18	4,499.18	4,441.50	462.55	45
TO	3,982.94	4,142.26	4,142.26	4,089.15	461.19	135
AL	3,181.64	3,308.91	3,308.91	3,266.49	461.13	83
					<b>SOMA:</b>	<b>8,836</b>

Source: Siope.

<sup>6</sup> Overall Average Score = arithmetic mean of the objective tests scores.

Graph 9 represents data regarding Fundeb's estimated annual per-student amounts in 2015 for the Federal District and the other states in relation to state schools' overall average scores in Enem 2015.

**GRAPH 9 FUNDEB'S ESTIMATED ANNUAL PER-STUDENT AMOUNT IN 2015 FOR THE FEDERAL DISTRICT AND THE OTHER STATES IN RELATION TO ENEM 2015 OVERALL AVERAGE SCORES — STATE SCHOOLS**



Source: MEC/Inep.

From examining the dots plotted on graph 9, we can see the low linear correlation between the variables, which is confirmed by the Pearson correlation coefficient ( $r = 0.25$ ).

However, one must note that this result does not suffice to support the assertion that there is no association of any kind between the variables studied since it only reports that for the data presented there was no relevant linear correlation.

### 3. CONCLUSION

The recent structural changes in Brazilian basic education introduced by Provisory Law No. 746/2016 have triggered national debates on the issue. In this changing education policy scenario, the MEC announced that the Inep will stop publishing the spreadsheets containing Enem results by school as of 2017.

In this changing context, notwithstanding the various arguments against the Enem, we consider that the agency's decision limits access to information and reduces the availability of data for evaluating the new public policies.

The far-reaching repercussions of the publication of Enem results by school in our society could represent a form of social control over public management, which is widely advocated and expected since it is the means through which citizens can realize the democratic and republican ideals by orienting the administration to meet the collective interests.

Moreover, if we consider the Enem results by school as information of collective interest, its non-disclosure would represent, in theory, a violation of the fundamental right set forth in Article 5, item 33, of the Federal Constitution of 1988.

With regard to the results of our quantitative data analysis, it is worth highlighting that the national average performance in the four knowledge areas and essay varied significantly according to the school's educational system (i.e., federal, state or private system). In addition, federal schools were found to achieve, on average, the best results in all knowledge areas and essay.

As for correlations between the variables, although the correlation coefficients do not suggest any linear correlation strong enough to allow a safe use of regression equations to reasonably estimate the values of the variables, still, results become relevant when analyzed from the viewpoint of the correlation sign (+ or -).

The variables "pass rate", "socioeconomic index" and "teacher education index" for Mato Grosso do Sul state schools showed a positive correlation with Enem average score, indicating that schools with a higher pass rate, socioeconomic status and teacher education index tend to achieve better results in the exam.

On the other hand, the study indicated a negative correlation between the "dropout rate" variable and exam results, indicating that schools with a higher dropout rate tend to achieve lower scores in the Enem.

As concerns the analysis of the linear correlation between Fundeb's estimated figures and state schools' results in the Enem for all Brazilian states, we could not find any significant linear correlation.

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