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Resources for education and results achieved in the Ideb of a Brazilian capital city

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Abstract

This article analyzes the relationship between education investments and indicators that monitor the development of education quality, particularly the Index of Development of Basic Education (IDEB). The research carried out a quantitative and bibliographical and documentary investigation. Public statistical sources were consulted, provided by agencies such as the Brazilian Institute of Geography and Statistics (IBGE) and the National Institute of Educational Studies and Research "Anísio Teixeira" (INEP). The data obtained allowed toidentify the performance of the schools in IDEB, correlating the IDEB score with the volume of resources destined for each school through the *Programa Dinheiro Direto na Escola* (program that offers grants directly to the institution) (PDDE) on a supplementary basis. Statistical tools of Pearson's Linear Correlation and Scatter Diagram were used. The results show a low relationship between the schools' budget and the result in IDEB, with situations where the institutions had received a comparatively high amount in grants but obtained a low score in IDEB, and schools that, even without receiving substantial grants, reached and sometimes surpassed the goals previously established for their score in IDEB. This shows that the correct application of available resources is crucial in school management.

Keywords: Education. IDEB. Performance. PDDE. Investment.

Recursos destinados à educação e resultados alcançados no Ideb de uma capital brasileira

Resumo

Este artigo analisa a relação entre investimentos em educação e os indicadores que acompanham o desenvolvimento da qualidade de ensino, especificamente com o Índice de Desenvolvimento da Educação Básica (Ideb). A metodologia adotada tem caráter quantitativo e recorre à investigação bibliográfica e documental. Foram consultadas fontes estatísticas públicas, disponibilizadas por órgãos como o Instituto Brasileiro de Geografia e Estatística (IBGE) e o Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira (Inep), que possibilitaram identificar o desempenho alcançado no Ideb para correlacioná-los ao volume de recursos destinados às escolas em caráter suplementar, por meio do Programa Dinheiro Direto na Escola (PDDE). Para tanto, utilizaram-se ferramentas estatísticas de correlação linear de Pearson e diagrama de dispersão. Como resultado constatou-se baixa relação entre o orçamento e o resultado no Ideb. Houve situações nas quais as instituições tinham à disposição valores comparativamente altos, mas obtiveram desempenho baixo, ao passo que escolas que não dispunham de repasses suplementares consideráveis atingiram e até superaram as metas previamente estabelecidas. Isso evidencia que a correta aplicação dos recursos disponíveis é determinante na gestão escolar.

Palavras-chave: Educação. Desempenho. Investimento. Índice de Desenvolvimento da Educação Básica. Programa Dinheiro Direto na Escola.

Recursos destinados a la educación y resultados alcanzados en el Ideb de una capital brasileña

Resumen

El presente artículo analiza la relación entre inversiones en educación y los indicadores que acompañan el desarrollo de la calidad de la enseñanza, específicamente con el Índice de Desarrollo de la Educación Básica (IDEB). Como metodología, se realizó una investigación de carácter cuantitativo, así como una investigación bibliográfica y documental. Se han consultado fuentes estadísticas públicas, suministradas por órganos como el Instituto Brasileño de Geografía y Estadística (IBGE) y el Instituto Nacional de Estudios e Investigaciones Educativas Anísio Teixeira (INEP), que permitieron identificar el desempeño alcanzado en el Índice de desarrollo de la Educación Básica para correlacionarlo al volumen de recursos destinados a las escuelas en carácter suplementario, a través del Programa Dinero Directo en la Escuela (PDDE). Para ello, se utilizaron herramientas estadísticas de correlación lineal de Pearson y el diagrama de dispersión. Como resultado se verificó una baja relación entre el presupuesto y el resultado en el IDEB, ocurriendo situaciones en las que las instituciones tenían a disposición valores comparativamente altos, pero obtuvieron un desempeño bajo, y escuelas que aunque no disponían de transferencias suplementarias considerables, alcanzaron e incluso superaron las metas previamente establecidas. Eso evidencia que una correcta aplicación de los recursos disponibles es determinante en la gestión escolar.

Palabras clave: Educación. IDEB. Rendimiento. PDDE. Inversión.

Article submitted on May 01, 2018 and accepted for publication on January 04, 2019.
[Translated version] Note: All quotes in English translated by this article's translator.
DOI: http://dx.doi.org/10.1590/1679-395174726x

INTRODUCTION

According to the Constitution of 1988 (CF/1988), Education is a right for all, and compulsory and free basic education must be guaranteed in official establishments, ensuring the guarantee of quality standards (BRASIL, 1988). Considering this premise, the National Institute of Educational Studies and Research "Anísio Teixeira" (INEP), a federal agency linked to the Ministry of Education (MEC), monitors the performance of education in Brazil, measuring the quality of education through quality indicator systems.

The law number 13.005/2014 approved the National Education Plan (PNE). It sets out goals, guidelines and strategies for education policy in a period of 10 years (2014-2024) so as to move forward with Education in Brazil. These are goals that involve issues such as quality education, diversity and appreciation of education professionals by means of investments in the area.

In order to guarantee public education for its citizens, the Brazilian government has the responsibility of allocating financial resources that enable the maintenance of education at all levels. In this context, the investments coming from public administration refer to the values applied in meeting the educational demands, financed with taxes and collections (BRASIL, INEP, 2015a).

In face of the public system's challenge in offering quality education for all, and its efforts in allocating financial resources for education, some questions arise, such as:

- To what extent do the values passed on to educational units influence the quality of public education?
- Are resources properly applied by school principals?

And, as the main question:

- Is there a relation between the financial amount received by the schools and the students' performance in educational indicators?

Thus, it was sought to understand how the level of quality of basic education in Brazil is measured, as well as to identify which financial resources are passed directly to schools and the impact that this type of investment causes in education. This way, a greater understanding of this subject was aimed so that the planning of public policies that contribute to the educational progress of the country can be better oriented.

EVALUATION AND EDUCATIONAL INDICATORS

To evaluate the application of public policies should be considered imperative for understanding the necessary actions for effective performance in the provision of public service. In this way, it is possible to recognize whether the objectives have been achieved by means of performance indicators as reference.

Consequently, educational indicators play an important role, as they help monitoring the level of quality of education, demonstrating students' performance through statistical values. Also, within the analysis they may include questions related to the social and economic environment from where the schools are located (INEP, 2015b).

According to Reynaldo Fernandes (2007, p. 8):

> To have a synthetic indicator of educational development would be desirable, among other reasons, i) to detect schools and/or educational networks whose students perform poorly; and ii) to monitor the temporal evolution of the students' performance from these schools and / or educational networks. For that, having to choose between a flow and a performance indicator in standardized tests may not be a simple task, due to the possibility of trade-offs between them.

In this context, Ideb seeks to measure the level of education, comprising in its analysis two important aspects: school flow and students' performance in evaluations.

Basic Education Development Index

The Ideb is an indicator developed to measure the quality level of education in the country. It is a tool used in the diagnosis of educational reality, acting as a guideline for public policies in setting goals for improving education (INEP, 2015c; MEC, 2016a).

Created in 2007 by Inep, it was legitimated as a benchmark for basic education with the decree No. 6.094, dated April 24th, 2007 (BRASIL, 2007), allowing the population to keep track, through the divulged results, of the performance, as well as the quality of basic education offered by public schools in the country (MEC, 2016a).

Ideb is based on the understanding that, with quality education, students acquire the necessary knowledge and achieve approval in the grades / year they are in.

The calculation of Ideb considers as reference two important components regarding the quality of education: a) the school flow (promotion, grade retention, school evasion) obtained annually through the School Census, and b) the performance achieved by the students in the assessments applied nationally. The combination of these two factors results in a grade ranging from 0 to 10 (CASTRO, 2009).

The performance grade scores are acquired through the National System of Basic Education Assessment (Saeb), which consists of three evaluations, each destined to a previously defined level of education and series: the National Assessment of Basic Education (Aneb); the National Assessment of Alphabetization (ANA) and the National Assessment of School Income (ANRESC), also known as "Prova Brasil", which is applied in municipality schools of Primary Education (INEP, 2017).

National Assessment of School Income (Prova Brasil)

The National Assessment of School Income, known as "Prova Brasil", is a biannual evaluation aimed at elementary students from the 5th grade to 9th grade in public schools (INEP, 2015d).

According to the ordinance of the Ministry of Education nº 931/2005 (MEC, 2005), in its Article 1, paragraph 2:

> Art. 1 [...]
>
> Paragraph 2. The National Assessment of Income in School Education - ANRESC has the following general objectives:
>
> a) to evaluate the quality of education delivered in schools, so that each school unit receives the overall result;
>
> b) to contribute to the development, at all educational levels, of an evaluation culture that stimulates the improvement of the standards of quality and equity of Brazilian education and adequate social controls of its results;
>
> c) to contribute for the improvement of education quality, reducing inequalities and democratizing the management of public education in official establishments, in accordance with the goals and policies established by the national education guidelines; [...] (Ordinance No. 931, of March 21, 2005).

In that way, ProvaBrasil allows the results to be calculated by schools, making it possible for every school unit to have access to its performance in Ideb. It is developed based on reference matrices, which encompasses the contents and abilities concerning what is expected from students at the end of the 5th and 9th years of elementary school, evaluating their performance in two areas of knowledge: Portuguese language, with emphasis on reading, and Mathematics, with emphasis on problem solving (MEC, 2013a).

In the 2015 edition, ANRESC was held during the period from November 3rd to November 13th, in all States and in the Federal District, as determined by Ordinance No. 174, dated May 13th, 2015, of the National Institute of Educational Studies and Research "Anísio Teixeira" (INEP, 2015f).

School Census

Coordinated by INEP, the school census is the main tool used by the Ministry of Education in obtaining information and statistical data concerning national basic education. With it, it is possible to obtain an overview of the educational situation in Brazil, given that such information includes issues such as: school structure, levels of education offered, age-grade distortion, income and flow rates, which are in the composition of Ideb (BRASIL, 2007; INEP, 2015e).

Data collection takes place annually within two steps. Firstly, the initial registration is declared, where information about students and school professionals is transmitted, as well as details about the educational establishments and classes created. The collection covers all units of basic and vocational education in public and private spheres. Secondly, the students' situation is informed, which was previously declared in the initial enrollment, identifying the results obtained at the end of the school year through information such as movement and income. Depending on the teaching modality there are other possibilities for declaration, such as: no moving, ongoing and concluding course (INEP, 2015e).

Alongside the Administrative Order No. 264/2007 (MEC, 2007) it was established the "National Day of the School Census of Basic Education", which established the last Wednesday of May as the reference date for data collection. All teaching establishments must provide the necessary information to complete the Census, through the system "Educacenso".

In addition to assisting in the generation of Ideb, the data from the School Census are used by the federal government as a reference in investments to education, distributing resources based on the number of students in each government sphere. These transfers may occur through various programs of the Ministry of Education, such as the National Book and Textbook Program (PNLD), the National School Feeding Program (PNAE) and the Direct Money at School Program (PDDE), the latter being adopted within the analysis in the present study.

EDUCATION INVESTMENTS

Several initiatives are adopted in Brazil with the aim of developing education. Among them, there is the application of financial resources that allow access to education as a right for all.

With CF/1988, specific determinations were made to contribute to the advance of education. According to the article 212, the contribution of the States, Federal District and Municipalities must be at least 25% of collected taxes, including transfers. The Union must allocate at least 18%.

Given such scenario, several resources are destined to the Municipal Department of Education in Manaus in order to attend to the main activities of education maintenance, such as: payroll, material supply and school meals, building maintenance, communication services expenses, water, power, amid others.

Among the several financial sources that provide subsidies for maintenance in the provision of educational services in schools in Manaus, stands: the Fund for Maintenance and Development of Basic Education and Valorization of Education Professionals (Fundeb), received by the Education Departments, where a minimum of 60% of the value is saved for expenses with personnel, being of high impact in the incentive to the labor activities of the servers; and the PDDE, used in this analysis, considers that financial resources are transferred directly to the institutions served by the program, and it is up to the directors, alongside the school community, to apply the money in order to develop the quality of teaching and students' performance throughout basic education.

Direct Money at School Program

The PDDE is a resource for schools, which provides financial subsidies to basic education units in a supplementary way, corroborating with the school self-management and enabling the director, alongside with the School Council, to act within the immediate needs of educational institutions (MEC, 2017a).

According to Article 2 of Resolution No. 10/2013 (MEC, 2013b)

> Art. 2. The Direct Money in School Program (PDDE) consists of the annual allocation, by the National Fund for the Development of Education (FNDE), of additional financial resources to public and private special education schools with enrolled students in elementary education, as well as to the campus of the Open University of Brazil (UAB), which offers initial or continuing training programs for basic education professionals with the purpose of not only contributing to the priority needs of the beneficiary educational establishments, but also guaranteeing its operation and promoting material and pedagogical infrastructure improvements, as well as encouraging schools' self-management and the exercise of citizenship of community participation when it comes to social control (Resolution Number 10, April 18th 2013).

What sets the program apart is the opportunity of depositing money directly into the School's Unit bank account. This consolidates school management's autonomy and simplifies administrative proceedings, making the application of available resources to a school's current situation possible.

In addition to this incentive for education development, there are also some "Actions Combined with PDDE", which represent financial onlendings destined for a specific purpose and can be divided into three groups: a) Novo Mais education, which comprehends activities within full-time schools; b) PDDE Qualidade, which includes actions such as More Culture in School, Athlete in School, Innovative High School and School Development Plan (PDE Escola); and c) PDDE Structure (Sustainable School, Water at School, Field School and Affordable School (MEC, 2017a).

Among these combined actions, the School Development Plan, (PDE School) stands out, as it refers to a program that specifically serves schools with low income in the Ideb, helping with the improvement of their results. PDE School was conceived in 1998, favoring only elementary schools located in areas with low Human Development Indices (HDI) in the North, Northeast and Midwest regions. In 2007, the Ministry of Education adopted the results achieved in Ideb as a parameter for adherence in PDE School, contemplating the educational units that had achieved critical results in the index. Subsequently, the PDE became part of the PDDE platform (MEC, 2015).

For the purpose of this paper, it was taken into account the consolidated schools' budget without discrimination of combined actions, considering that the sole purpose of this study is to verify the correlation between budget and Ideb results, that is, to verify the joint behavior of two variables and analyze their correlation without others, which can be studied in future researches. The correlation, then, only signals a certain situation between two variables. With the result in hands, an extended or new investigation proves necessary, in order to justify – or not – the increase of results achieved with Ideb.

In spite of school units' autonomy when it comes to the application of resources derived from PDDE, schools' directors have the accountability as one of their obligations, demonstrating how the budget assigned to the school was applied, thus seeking transparency and honesty within its activities.

PDDE, then, is conditioned to a myriad of specifications and can therefore be utilized when hiring services, as well as acquiring goods that contribute to the improvement of schools' educational activities, like consumer goods. It is not acceptable to use the money coming from the program with personal expenses, such as wages, bank fee payments, festivities, pedagogical prizes, among others stipulated by the resolutions (BRASIL, 2007; FNDE, 2017b).

The municipality and Ideb

Located in the Northern Region of Brazil, Manaus is the capital of the state of Amazonas. With an area of approximately 11,401,092 km, it has an estimated population of around 2,130,264 inhabitants, being the seventh most populous city in the country (IBGE, 2016).

Still, according to IBGE, Manaus has been emerging by having the largest GDP in the state of Amazonas, and the seventh largest in the national ranking (IBGE, 2015). It is globally known for its environmental, cultural and economic characteristics, and illustrated by its industrial park, the Free Economic Zone of Manaus.

When it comes to Education, the municipality has achieved a 5,4 grade in Ideb 2015 for the early years and 4,3 in the final years, surpassing its previous marks in Ideb 2013, as disclosed in the website of Semed (PREFEITURA DE MANAUS, 2016).

The Municipality of Manaus uses the results achieved in Ideb as criteria for education professionals to receive the "Incentive Prize for the Fulfillment of Primary School Goals", provided by the Municipal Law 1,627/2011, and regulated by the Decree No. 1,497/2012. As a form of incentive, schools that reach or even exceed the municipality goals receive an additional bonus, with the possibility of obtaining a 14th or even 15th salary.

METHODOLOGICAL PROCEDURES

As for technical procedures, a bibliographical research was carried out alongside a documentary research, whose main legislation concerning public policies for the development of education was consulted, as well as official reports and declarations published in the main communication channels of the government in the three spheres of administrative procedures.

According to Lakatos and Marconi (2003), a documentary research is composed of primary source data, obtained through documents that contain original information, which can be written or not, such as statistical data from census and laws. In turn, a bibliographic research is considered from secondary sources, comprising the existing and public information about the topic investigated.

The city of Manaus was chosen as this paper's field of study because recently it has shown advancement in Ideb's results for the early years of Elementary School, surpassing the proposed goal for the municipality and approaching the one predicted for 2019.

The research has a quantitative character, as it has analyzed the possible correlation between Manaus public schools' result in Ideb and the financial resources that were made available to them, through the Direct Money at School Program (PDDE).

According to Richardson (2012, p. 70), the quantitative approach,

> [...] as the name implies, is characterized by the use of quantification both in the modalities of collecting the information and in their treatment by means of statistical techniques. They range from the simplest ones, such as percentage, average, and standard deviation, to the most complex, such as correlation coefficient and regression analysis.

The data used for correlation analysis refer to the results obtained in the last published Ideb (2015) and the values received from PDDE for the years of 2014 and 2015, these being the previous and actual years in which the test took place, respectively.

In order to determine the schools that were part of the analysis, the following criteria were adopted:

1. Public schools belonging to the municipality education network, located in the urban area of the city;
2. Schools that have a registered result in the Basic Education Development Index (Ideb) for the 5th year of Elementary School in the year of 2015;
3. Schools that received financial onlendings through PDDE, including their combined actions, in the years of 2014 and 2015.

After authentication, 223 schools identified fit the established criteria, indicated later in Table 1, by the Inep code.

Information regarding Ideb results was obtained on the website *Ideb - Resultados e Metas*, restricting the search by municipality according to established criteria. Relatively to the information concerning financial onlendings, the consultation was carried out in the websites *Liberações – Consultas Gerais* and PPDDEREx, paying attention to the schools' National Registry of Legal Entities (CNPJ).

The money amount in Brazilian Reais, taken into account in the sum and identified in Table 1, is relative to the amounts that were deposited in the specified year, ignoring the transfers that were deferred to the following year and those that were made available in the current month or after the application of the test.

From the collected data, statistical analyzes of correlation between the proposed variables, presented in a dispersion diagram format, were performed. Ideb was assumed as a dependent variable, or variable response, and PDDE resources as independent variable, also called predictor variable.

It should be emphasized that the correlation calculation does not imply a causal relation, where one variable directly influences the other. It only reveals indications that the variables are associated or correlated (LARSON and FARBER, 2010).

ANALYSIS AND DATA DISCUSSION

The sample results extracted from the consulted websites are shown in the Table 1 below. It should be noted that the following data comply with the restriction of schools belonging to the municipality of Manaus, located in the urban area and that have received PDDE financial resources in the years of 2014 and 2015.

Table 1

Ideb and PDDE results received by the schools of Manaus (2014 and 2015)

School Code Inep	Year result ideb 2015		PDDE Received by schools (R$)		
	Achieved	Planned	2014	2015	TOTAL (2 years)
13028219	4,9	5	27.170,00	27.170,00	54.340,00
13271237	5,6	4,2	18.730,00	24.980,00	43.710,00
13028243	5,6	5,3	40.202,88	22.243,88	62.446,76
13157213	6	...	31.460,00	31.460,00	62.920,00
13029312	5,9	5,1	23.959,93	17.959,93	41.919,86
13058550	6	4,9	36.477,31	38.776,59	75.253,90
13081586	4,5	4,5	27.367,04	17.770,00	45.137,04
13029428	5,6	4,7	51.759,64	51.997,64	103.757,28
13117203	4,8	4,6	15.816,14	15.816,14	31.632,28
13028308	5,7	5,6	25.473,00	3.830,00	29.303,00
13081292	5,3	4,9	43.070,01	49.260,01	92.330,02
13075519	4,8	5,1	30.669,81	9.840,00	40.509,81
13308220	5,5	4,3	19.067,37	19.067,37	38.134,74
13116606	5,7	4,6	45.366,92	22.870,00	68.236,92
13131869	4,7	4,3	36.112,99	34.608,47	70.721,46
13028340	5,1	4,3	49.523,27	11.010,00	60.533,27
13273213	5,5	4,3	20.174,47	3.790,00	23.964,47
13028359	5,9	5,0	19.915,36	19.915,36	39.830,72
13093533	6	5,2	12.144,47	4.840,00	16.984,47
13089250	5,1	4,3	37.082,28	7.040,00	44.122,28
13028367	4,9	4,9	7.999,45	7.999,45	15.998,90
13092774	5,2	3,8	23.489,65	23.489,65	46.979,30
13031597	5,4	5,1	33.750,00	5.550,00	39.300,00
13030060	6,5	5,2	50.002,57	30.002,57	80.005,14
13031260	5,8	5,2	43.106,74	24.870,00	67.976,74
13031678	6,9	5,2	26.780,00	26.780,00	53.560,00
13059068	4,8	3,9	64.754,10	50.739,10	115.493,20
13058460	5,3	5,4	22.155,00	22.155,00	44.310,00
13058924	5,4	4,5	43.236,71	36.236,71	79.473,42
13026828	6,7	5,5	29.820,46	28.571,46	58.391,92
13028472	6,1	5,2	22.009,68	22.009,68	44.019,36
13307231	5,5	5,5	6.721,53	6.721,53	13.443,06
13081713	5,6	4,7	33.252,90	27.252,90	60.505,80
13081420	5,3	5,0	39.023,33	29.023,33	68.046,66
13089226	5,5	4,2	41.890,00	35.890,00	77.780,00
13082990	6,3	5,9	32.350,52	20.350,52	52.701,04
13058894	5	4,5	42.757,76	11.280,00	54.037,76
13097113	5,8	5,3	28.420,00	28.420,00	56.840,00
13093525	5,5	4,2	25.349,57	34.099,57	59.449,14
13071793	5	4,8	52.394,84	55.144,84	107.539,68

Continue

School Code Inep	Year result ideb 2015		PDDE Received by schools (R$)		
	Achieved	Planned	2014	2015	TOTAL (2 years)
13071785	4,6	4,9	53.511,00	54.826,00	108.337,00
13082949	4,7	4,7	40.439,91	51.689,91	92.129,82
13098691	4,6	5,5	50.230,00	4.230,00	54.460,00
13075896	6	5,4	27.854,90	39.104,90	66.959,80
13028537	6	5,0	18.953,30	18.953,30	37.906,60
13073338	5,6	5,0	13.030,00	7.030,00	20.060,00
13087711	5,2	5,4	28.754,50	26.210,00	54.964,50
13097539	5,1	4,3	24.130,00	24.130,00	48.260,00
13093541	5,3	4,5	14.485,44	14.485,44	28.970,88
13092456	6,8	5,2	30.169,01	20.169,01	50.338,02
13093452	6,1	3,9	41.403,65	31.403,65	72.807,30
13092545	6,9	5,0	19.435,91	14.435,91	33.871,82
13275232	5	4,6	20.316,08	20.316,08	40.632,16
13092804	5,8	5,0	15.705,29	14.264,29	29.969,58
13028570	6	6,0	37.094,85	26.594,85	63.689,70
13309242	5,4	4,1	12.332,67	21.082,67	33.415,34
13025180	5,5	4,7	34.023,93	24.023,93	58.047,86
13028588	5,6	5,1	59.738,00	33.480,00	93.218,00
13274228	6,1	5,1	27.449,22	17.449,22	44.898,44
13089277	4,7	4,6	30.836,48	29.293,48	60.129,96
13092880	3,9	4,6	34.347,16	43.097,16	77.444,32
13058398	5,2	5,3	19.836,01	2.030,00	21.866,01
13092812	5,5	5,0	33.564,00	32.360,00	65.924,00
13272233	5,4	4,3	29.900,00	29.900,00	59.800,00
13081659	6	5,6	21.712,09	15.448,09	37.160,18
13089234	5,1	4,5	33.890,00	30.140,00	64.030,00
13028626	4,9	5,5	58.018,41	10.070,00	68.088,41
13093436	5,6	5,0	17.440,87	17.440,87	34.881,74
13092553	6,7	5,2	22.550,05	21.271,05	43.821,10
13028642	5,5	4,7	19.111,17	12.937,17	32.048,34
13093584	5,5	3,3	47.631,00	33.780,00	81.411,00
13029118	5,2	5,1	48.195,89	39.451,89	87.647,78
13025562	5,8	6,0	24.730,31	24.730,31	49.460,62
13275216	5,1	3,8	32.860,00	32.860,00	65.720,00
13030078	5,3	4,9	36.143,01	4.700,00	40.843,01
13031317	5,4	5,3	39.680,58	23.467,58	63.148,16
13087703	5,3	4,8	29.055,49	25.305,49	54.360,98
13081519	6	5,3	23.140,00	23.140,00	46.280,00
13071777	5,2	4,7	28.704,76	27.104,76	55.809,52
13059165	5,4	4,8	60.892,01	51.713,01	112.605,02
13032089	6,1	5,1	22.191,75	17.191,75	39.383,50
13089293	5	4,7	36.957,83	21.957,83	58.915,66
13092529	4,8	4,5	26.136,61	10.840,00	36.976,61
13309234	5,2	4,4	34.110,00	34.110,00	68.220,00
13025570	6,9	5,4	25.590,00	25.590,00	51.180,00
13089269	4,6	4,9	53.503,83	35.073,83	88.577,66
13058487	5,7	5,2	28.817,61	28.817,59	57.635,20
13028758	5,6	4,5	42.682,05	24.633,05	67.315,10

Continue

School Code Inep	Year result ideb 2015		PDDE Received by schools (R$)		
	Achieved	Planned	2014	2015	TOTAL (2 years)
13028774	5	4,9	49.833,01	16.790,00	66.623,01
13067249	5,8	5,2	18.270,22	2.444,40	20.714,62
13028782	5	5,3	31.939,84	7.400,00	39.339,84
13271245	5,4	4,7	23.930,01	23.930,01	47.860,02
13028804	5,6	5,3	27.840,66	2.690,00	30.530,66
13099710	5,1	...	24.610,00	24.610,00	49.220,00
13031600	4,9	5,0	61.644,24	53.394,24	115.038,48
13026437	5,9	5,4	18.230,13	18.230,13	36.460,26
13089196	5,9	3,9	12.719,78	21.469,78	34.189,56
13081489	5,9	5,4	30.923,27	30.923,27	61.846,54
13274210	4,9	4,7	20.010,88	20.010,88	40.021,76
13028839	5,8	5,4	38.475,00	45.550,00	84.025,00
13089064	5,6	4,6	28.665,12	18.665,12	47.330,24
13089056	5,9	4,7	26.881,07	20.881,07	47.762,14
13093495	5,2	4,6	25.610,52	5.950,00	31.560,52
13028863	5,9	4,8	24.624,96	4.980,00	29.604,96
13096710	5,5	...	20.080,00	20.080,00	40.160,00
13076450	5,5	5,3	28.250,00	23.250,00	51.500,00
13058444	4,9	4,9	31.768,54	31.768,54	63.537,08
13093444	4,9	4,2	62.493,01	39.493,01	101.986,02
13089129	5,3	5,0	36.336,99	25.336,98	61.673,97
13092928	5,3	4,4	20.050,74	20.050,74	40.101,48
13031422	6	5,3	45.600,00	35.100,00	80.700,00
13028960	4,7	3,8	49.002,74	38.824,74	87.827,48
13092910	5,2	4,5	39.762,00	38.093,00	77.855,00
13092510	5,3	4,3	29.526,15	29.180,92	58.707,07
13030086	6	5,7	6.110,36	6.110,36	12.220,72
13081721	4,4	4,4	38.320,00	29.570,00	67.890,00
13029037	5,1	4,1	25.074,65	15.074,65	40.149,30
13058525	6	5,0	33.146,85	32.841,05	65.987,90
13081470	6,7	5,4	33.080,00	28.080,00	61.160,00
13093428	5,6	4,8	42.052,97	40.884,98	82.937,95
13030043	6	5,3	21.977,66	17.977,66	39.955,32
13092855	5,4	4,7	23.200,00	23.200,00	46.400,00
13092332	5,8	5,3	24.027,58	24.027,58	48.055,16
13092944	5,6	4,6	26.990,00	26.990,00	53.980,00
13093550	6,1	4,6	14.746,40	14.746,40	29.492,80
13093576	4,9	4,1	23.716,77	30.986,77	54.703,54
13093592	5,3	4,2	34.221,63	42.477,09	76.698,72
13026399	5,6	4,8	36.657,60	47.907,58	84.565,18
13092383	5,3	4,0	22.905,18	30.262,18	53.167,36
13029053	4,7	5,1	25.091,24	25.091,24	50.182,48
13088971	6,6	5,4	26.191,51	16.191,51	42.383,02
13029061	5,4	4,6	21.385,01	19.996,58	41.381,59
13029070	6	4,9	30.950,00	30.950,00	61.900,00
13272225	5,5	4,5	28.809,61	28.809,61	57.619,22

Continue

School Code Inep	Year result ideb 2015		PDDE Received by schools (R$)		
	Achieved	Planned	2014	2015	TOTAL (2 years)
13092839	5,3	4,5	46.653,96	43.391,96	90.045,92
13075748	4,4	5,0	34.866,95	37.616,95	72.483,90
13132229	5,7	3,5	38.643,00	6.900,00	45.543,00
13089285	4,8	4,2	17.445,73	8.410,00	25.855,73
13092863	5,6	4,7	19.791,90	18.497,90	38.289,80
13099230	5,5	3,4	24.600,00	24.600,00	49.200,00
13100432	5,1	4,3	35.740,00	32.610,00	68.350,00
13089200	5,5	4,4	23.220,00	31.970,00	55.190,00
13097393	5,5	3,4	39.200,00	35.950,00	75.150,00
13031368	5,6	5,1	27.095,37	16.930,00	44.025,37
13092600	6	5,2	38.565,89	23.565,89	62.131,78
13098110	5,5	4,9	32.600,00	32.600,00	65.200,00
13028510	5	4,4	33.179,79	21.836,13	55.015,92
13089242	5,3	4,9	17.959,78	17.959,78	35.919,56
13029231	5,5	4,7	51.571,43	22.340,00	73.911,43
13092588	6,2	5,5	40.769,54	30.269,54	71.039,08
13275224	4,9	4,9	17.407,23	17.407,23	34.814,46
13132601	5,6	4,0	39.407,53	36.445,53	75.853,06
13308238	4,9	4,3	25.137,50	24.680,00	49.817,50
13117009	6	4,8	41.260,00	28.760,00	70.020,00
13029150	5,6	4,4	24.196,77	24.196,77	48.393,54
13029169	5,4	5,5	42.394,35	2.774,70	45.169,05
13075870	5,7	4,8	17.231,31	17.231,31	34.462,62
13028731	7,3	6,1	25.198,93	16.090,93	41.289,86
13092766	6,1	5,1	29.894,22	29.894,22	59.788,44
13089099	5,4	4,6	23.844,62	23.844,62	47.689,24
13071726	4,6	4,7	23.959,81	30.227,81	54.187,62
13132407	7,1	5,2	6.715,52	6.715,52	13.431,04
13058614	6,1	5,0	15.127,42	15.127,42	30.254,84
13088980	6	5,0	37.251,87	44.086,87	81.338,74
13132210	5,4	5,8	23.558,11	22.336,11	45.894,22
13066994	5,6	4,8	35.298,86	29.000,86	64.299,72
13096729	6,3	4,9	19.602,18	19.602,18	39.204,36
13059114	5,6	5,1	29.103,24	8.430,00	37.533,24
13082981	6,1	4,9	20.664,55	13.824,55	34.489,10
13097881	6,5	4,2	23.010,18	29.260,18	52.270,36
13092561	5,9	5,2	17.044,26	17.044,26	34.088,52
13029240	5,9	4,7	30.580,00	30.580,00	61.160,00
13092820	5,1	4,5	26.314,85	26.314,85	52.629,70
13029177	5,1	5,0	20.213,38	20.213,38	40.426,76
13026720	6,2	5,3	35.540,00	25.040,00	60.580,00
13089102	6,1	5,0	37.135,65	24.635,65	61.771,30
13131842	5,4	4,0	24.140,00	24.140,00	48.280,00
13075730	4,4	4,7	46.170,16	46.540,16	92.710,32
13093517	5,5	4,6	8.356,35	8.457,59	16.813,94
13092936	5	4,7	39.664,00	28.400,00	68.064,00

Continue

School Code Inep	Year result ideb 2015		PDDE Received by schools (R$)		
	Achieved	Planned	2014	2015	TOTAL (2 years)
13082922	6,3	5,9	21.200,00	21.200,00	42.400,00
13092464	4,5	4,9	26.274,14	16.274,14	42.548,28
13029185	6,2	4,5	49.618,00	28.393,00	78.011,00
13097075	5,5	4,6	23.049,20	21.512,20	44.561,40
13119001	5,4	5,1	20.981,56	4.140,00	25.121,56
13100513	5,6	4,4	30.950,00	30.950,00	61.900,00
13029690	4,2	3,9	82.983,00	68.776,00	151.759,00
13092871	5,3	5,0	26.125,09	26.125,09	52.250,18
13264281	4,7	3,5	24.744,07	24.744,07	49.488,14
13273230	5,5	4,0	23.370,00	23.370,00	46.740,00
13096702	5,3	4,6	48.870,00	13.780,00	62.650,00
13081730	4,1	4,4	44.162,00	17.670,00	61.832,00
13031279	5,8	5,6	20.728,47	19.563,45	40.291,92
13029290	4,7	5,1	32.453,69	38.787,69	71.241,38
13081756	5	4,5	24.672,68	24.672,68	49.345,36
13081543	5,5	4,9	34.647,34	11.050,00	45.697,34
13067907	5,7	5,1	59.381,80	29.984,23	89.366,03
13029320	6,7	6,0	18.862,47	18.862,47	37.724,94
13269224	4,7	4,7	8.919,05	8.919,05	17.838,10
13075861	5,7	5,3	39.874,86	3.180,00	43.054,86
13029622	6,3	4,2	55.226,88	26.726,88	81.953,76
13029339	5,5	5,1	37.578,66	27.578,66	65.157,32
13029371	6,1	5,1	32.840,00	29.090,00	61.930,00
13025953	5,8	5,0	20.197,31	20.197,30	40.394,61
13029452	4,6	4,3	43.964,01	50.463,01	94.427,02
13029479	5,2	4,6	33.600,00	44.850,00	78.450,00
13029525	5,4	4,2	40.943,00	42.193,00	83.136,00
13029541	6,9	4,9	24.698,00	23.320,00	48.018,00
13096737	5,4	4,8	23.400,50	8.540,00	31.940,50
13092790	5,3	4,9	22.990,00	22.990,00	45.980,00
13029576	5,4	4,6	29.267,20	36.276,99	65.544,19
13268210	5,1	3,6	36.354,28	25.854,28	62.208,56
13081527	5,3	4,6	44.071,84	41.916,84	85.988,68
13092480	5,4	4,8	33.557,31	21.057,31	54.614,62
13088947	5,1	4,8	41.067,33	15.870,00	56.937,33
13029665	4,9	5,2	37.853,58	37.853,58	75.707,16
13029193	6	5,2	16.637,83	16.637,83	33.275,66
13029703	6,4	5,4	21.002,54	19.600,54	40.603,08
13268228	4,9	4,8	24.969,60	24.969,60	49.939,20
13030051	7,6	5,6	30.149,58	3.800,00	33.949,58
13132202	4,7	4,0	17.054,58	17.054,58	34.109,16
13029223	7,4	5,3	55.773,00	37.043,00	92.816,00
13309218	6,1	5,9	24.460,35	19.460,35	43.920,70
Average:	5,5	Standard Deviation:	0,6	Grand total:	R$ 12.381.165,73

Source: Elaborated by the authors.

Note: ... Numeric data not available.

According to Table 1, 223 participating schools have met the criteria for having records in the INEP report, presenting results in the Ideb (2015) and receiving resources from the PDDE in the years of 2014 and 2015. It is also noted that, although in some cases the school did not plan the Ideb's outcome, the result as a participant in the evaluation process was registered.

Another highlight that can be observed in Table 1 is the result of the Ideb Average of 5.5 with a Standard Deviation of 0.6. This value is considered low, demonstrating that there was no relevant departure from the mean value of the Ideb of 5.5. This assertion can be strengthened by the Coefficient of Variation (CV) calculated at 10.9%. These elements demonstrate that the values of Ideb do not have amounts with substantial differences type 1 to 7. All values are between the minimum value of 3.9 and the maximum value of 7.6, reached by a school that does not receive the highest value of PDDE as well as the 3.9 Ideb was not assigned to the school that received the lowest total PDDE.

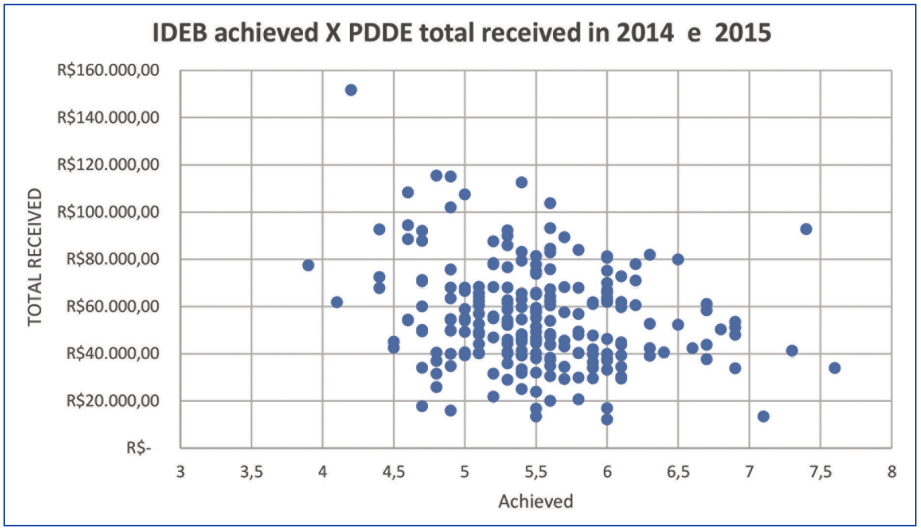
With the purpose of verifying whether there is a relation between IDEB schools' values and their respective PDDE received in the years considered by this study, as well as with the intent of better visualizing the information of the data presented, two statistical instruments were used, the Dispersion Diagram and Pearson's linear correlation.

According to Moore, Notz and Fligner (2014), the Dispersion Diagram graphically reveals the existence of a possible relationship between two quantitative variables measured in the same individual under study. In this way, the values of one of them appear on the horizontal axis and the values of the other appear on the vertical axis. Each pair of values is represented a point in Graphic 1. Agresti and Finlay (2012) claim that the Scatter Chart is a graph of "n" pairs of observations, where each pair of variables involved represents a point on the graphic.

The result of applying the Dispersion Diagram to the data in Table 1 is shown below.

Graphic 1

Ideb achieved X PDDE total received in 2014 and 2015



Source: Elaborated by the authors.

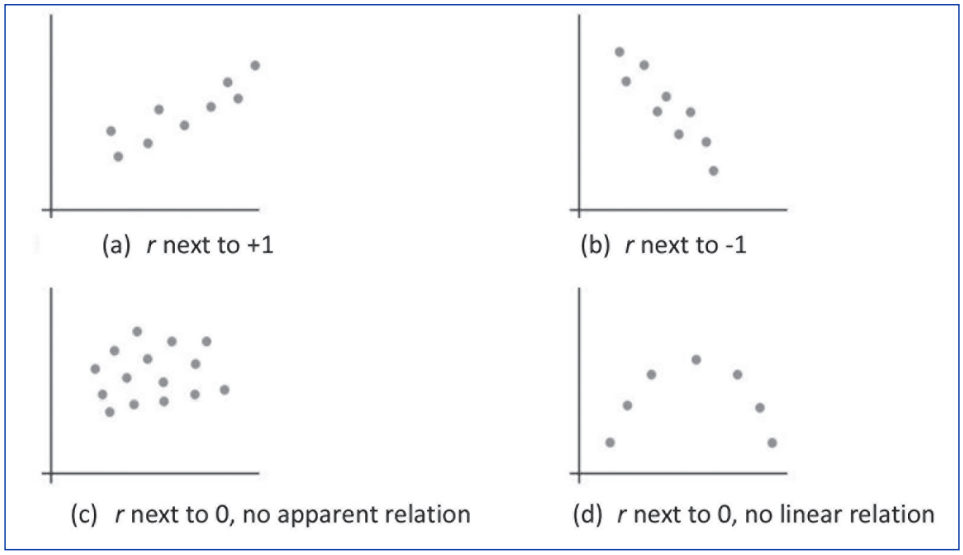
The result of this set of points visualized in Graphic 1 allows the verification of the behaviors between these variables relation. Among them, it can be verified that for a same value of X one has several values of Y, or not. As an example, for the value of 5.5 of the Ideb there are at least ten schools that have reached this score, but that have received different PDDE values. These amounts vary from a minimum amount of R$ 13.443,06 up to a maximum amount of R$ 81.411,00.

As for the Ideb value of 3.9, only one school obtained this score and received from PDDE a value of R$ 77.444,32. In the same line of analysis, only one school obtained the Ideb of 7.6 with the total receipt of R$ 33.949,58.

According to Devore (2006), there are situations where the objective of studying the behavior of two variables is to check how they are related and not to use one to predict the outcome of the other. For this, another statistical instrument called

the correlation coefficient (*r*) is utilized. The instrument serves as a measure to identify how strong two variables are related. In accordance with the author, this coefficient varies from -1 to +1, passing through zero. Where -1 means that all pairs are on a negatively sloped line and +1 if all pairs form a positive slope line, and zero if there is no correlation, that is, pairs of points appear scattered without a tendency to form a straight line. The *r* value near 0 must be interpreted with caution, since it is not an evidence that there is no strong relation, but the absence of a linear relation. For a better understanding, Figure 1 below shows the diagram of the pairs of points with their correlation coefficients.

Figure 1
Examples of Dispersion Diagrams and their Correlation Coefficient



Source: Devore (2006).

Comparing Graphic 1 of the present research to that of Figure 1, letter (c), it is inferred that the data do not present strong correlation or tending to values +1, letter (a) or -1, letter (b), but a correlation low moving towards zero value, letter (c). In other words, the value received in the PDDE had little influence on the Ideb result. Therefore, there must be other variables that contribute or influence more strongly to the result of the education quality indicator.

Applying the Pearson's Correlation Coefficient calculation tool to the data in Table 1, we find the approximate value of r = -0.23. It is a value considered low, demonstrating weak or low relation between PDDE and Ideb values. The negative sign still indicates that the elements that received lower values obtained better result in the Ideb. This coefficient ratifies that there is a need to improve the mechanism for control and application of financial resources in education.

CONCLUSION

Based on the results obtained, it has been evidenced that the mere receiving of financial support does not necessarily imply a direct relationship with the improvement of performance considering the test results of the schools submitted to analysis. Therefore it is fair to consider that there are other relevant elements that influence on the enhancement of the results of education performance, suggesting the need of complementary studies to enrich the debate about the subject.

As stated in Moore, Notz and Fligner (2014), the relationship between two variables can be statistically influenced by different factors. Thus, it is important to observe aspects that may interfere with the students' performances during the school day, such as socioeconomic issues, family participation, adequate environmental structures for teaching, among others.

Additionally, the results indicate the need for further research, one which identifies how schools' budgets have been applied, which practices lead to better outcomes, or even which management methodologies for budget applications may favor IDEB's growth, demonstrating how a correct utilization of available resources is determinant for school management.

Other research objects would allow us to understand the elements with the greatest relationship within Ideb's results, such as: school structure, teacher training, access to technological resources and logistic access of students. These constitute as motivations for future research that may clarify the paths to be covered in educational management.

The present paper's result contradicts conceptions that only more financial resources can improve results. Beyond capital goods, there are other elements that may be essential to cause an increase of Ideb.

Finally, as an illustration, according to data from the Organization for Economic Co-operation and Development (OECD, 2017), Brazil is one of the countries with the lowest expenses with elementary students annually, when compared to the countries that make up OECD. As disclosed by OECD, Brazil spends approximately US$ 3,800 per student in primary education (early years of elementary school), being far from the one that is top of the list, Luxembourg, which disburses about US$ 21,200 and below of the OECD average, around US$ 8.7 thousand.

As for the tool used, its simplicity and replicability is emphasized in any educational institution, preceding other necessary verifications and that will enable the direct managers of the resources to find creative alternatives for the achievement of the planned goals and the consolidated development of education.

REFERENCES

AGRESTI, A.; FINLAY, B. **Métodos estatísticos para as ciências sociais**. 4. ed. Porto Alegre: Penso, 2012.

BRASIL. **Constituição (1988)**. Constituição da República Federativa do Brasil. Brasília, DF: Senado, 1988.

BRASIL. Decreto n. 6.094, de 24 de abril de 2007. Dispõe sobre a implementação do Plano de Metas Compromisso Todos pela Educação. **Diário Oficial da União**, Brasília, Apr. 25, 2007. Seção 1.

BRASIL. Lei n. 13.005, de 25 de Junho de 2014. Aprova o Plano Nacional de Educação - PNE e dá outras providências. **Diário Oficial da União**, Brasília, June 26, 2014. Seção 1.

CASTRO, M. Sistemas de avaliação da educação no Brasil: avanços e novos desafios. **São Paulo em Perspectiva**, v. 23, n. 1, p. 5-18, 2009.

DEVORE, J. **Probabilidade e estatística**: para engenharia e ciências. 6. ed. São Paulo: Cengage Learning, 2006.

FERNANDES, R. Índice de Desenvolvimento da Educação Básica (Ideb). Brasília, DF, Inep, 2007. (Texto para discussão n.26).

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA – IBGE. **Produto interno bruto dos municípios**: 2010-2015. Available at: <https://biblioteca.ibge.gov.br/visualizacao/livros/liv101458.pdf>. Accessed on: Feb. 01, 2018.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA – IBGE. **Conheça cidades e Estados do Brasil**. Brasília, DF, 2017. Available at: https://cidades.ibge.gov.br/brasil/am/manaus/panorama> Accessed on: Feb. 02, 2018.

INSTITUTO NACIONAL DE ESTUDOS E PESQUISAS EDUCACIONAIS ANÍSIO TEIXEIRA – INEP. **Investimentos Públicos em Educação**. 2015a. Available at: <http://portal.inep.gov.br/web/guest/investimentos-publicos-em-educacao>. Accessed on: Oct. 01, 2017.

INSTITUTO NACIONAL DE ESTUDOS E PESQUISAS EDUCACIONAIS ANÍSIO TEIXEIRA – INEP. **Indicadores Educacionais**. 2015b. Available at: <http://portal.inep.gov.br/indicadores-educacionais>. Accessed on: Oct. 20, 2017.

INSTITUTO NACIONAL DE ESTUDOS E PESQUISAS EDUCACIONAIS ANÍSIO TEIXEIRA – INEP. **O que é o IDEB?**. 2015c. Available at: <http://portal.inep.gov.br/IDEB>. Accessed on: Oct. 28, 2017.

INSTITUTO NACIONAL DE ESTUDOS E PESQUISAS EDUCACIONAIS ANÍSIO TEIXEIRA – INEP. **Sobre a Anresc (Prova Brasil)**. 2015d. Available at: <http://portal.inep.gov.br/educacao-basica/saeb/sobre-a-anresc>. Accessed on: Nov. 03, 2017.

INSTITUTO NACIONAL DE ESTUDOS E PESQUISAS EDUCACIONAIS ANÍSIO TEIXEIRA – INEP. **Censo Escolar**: O que é o Censo Escolar. 2015e. Available at: <http://portal.inep.gov.br/web/guest/censo-escolar>. Accessed on: Oct. 28, 2017.

INSTITUTO NACIONAL DE ESTUDOS E PESQUISAS EDUCACIONAIS ANÍSIO TEIXEIRA – INEP. Portaria n. 174, May 13, 2015. 2015f. **Diário Oficial da União**, 4 mai 2015. Seção 1.

INSTITUTO NACIONAL DE ESTUDOS E PESQUISAS EDUCACIONAIS ANÍSIO TEIXEIRA – INEP. **SAEB**: Principais itens do Saeb. Brasília, DF, 2017. Available at: <http://portal.inep.gov.br/web/guest/educacao-basica/saeb>. Accessed on: Oct. 28, 2017.

LAKATOS, E. M.; MARCONI, M. A. **Fundamentos de metodologia científica**. 5. ed. São Paulo: Atlas, 2003.

LARSON, R; FARBER, B. **Estatística aplicada**. 4. ed. São Paulo: Pearson, 2010.

MANAUS (Município). Lei n. 1.627, de 30 de dezembro de 2011. Dispõe sobre o "Prêmio de Incentivo ao Cumprimento de Metas do Ensino Fundamental", e dá outras providências. **Diário Oficial do Município**, Manaus, Dec. 30, 2011. Caderno 1 .

MANAUS (Município). Decreto n. 1.497, de 23 de março de 2012. Regulamenta a Lei n. 1627, de 30 de dezembro 2011. **Diário Oficial do Município**, Manaus, Mar. 23, 2012. Caderino 1.

MINISTÉRIO DA EDUCAÇÃO – MEC. Portaria Ministerial nº 931, de 21 de março de 2005. **Diário Oficial da União**, Brasília, Mar. 22, 2005. Seção 1.

MINISTÉRIO DA EDUCAÇÃO – MEC. Portaria nº 264, de 26 de março de 2007. Institui o Dia Nacional do Censo Escolar da Educação. **Diário Oficial da União**, Brasília, Mar. 27, 2007. Seção 1.

MINISTÉRIO DA EDUCAÇÃO – MEC. **Prova Brasil**: avaliação do rendimento escolar 2013. 2013a. Available at: <http://download.inep.gov.br/educacaobasica/provabrasilsaeb/resultados/2013/caderno2013_v2016.pdf>. Accessed on: Nov. 03, 2017.

MINISTÉRIO DA EDUCAÇÃO – MEC. **Resolução CD/FNDE n. 10, de 18 de abril de 2013**. 2013b. Available at: <http://www.fnde.gov.br/acessibilidade/item/4386-resolu%C3%A7%C3%A3ocdfnden%C2%BA-10-de-18-de-abril-de-2013>. Accessed on: Nov. 10, 2017.

MINISTÉRIO DA EDUCAÇÃO – MEC. **O que é o PDE Escola**. Brasília, DF, 2015. Available at: <http://pdeescola.mec.gov.br/index.php/o-que-e-pde-escola>. Accessed on: Nov. 21, 2017.

MINISTÉRIO DA EDUCAÇÃO – MEC. **Ideb**: apresentação. 2016a. Available at: <http://portal.mec.gov.br/conheca-o-ideb>. Accessed on: Oct. 28, 2017.

MINISTÉRIO DA EDUCAÇÃO – MEC. **Programa Dinheiro Direto na Escola**: apresentação. 2017a. Available at: <http://www.fnde.gov.br/programas/pdde/sobre-o-plano-ou-programa/sobre-o-pdde>. Accessed on: Nov. 12, 2017.

MINISTÉRIO DA EDUCAÇÃO – MEC. **Programa Dinheiro Direto na Escola**: sobre as finalidades do PDDE. 2017b. Available at: <http://www.fnde.gov.br/programas/pdde/perguntas-frequentes/item/10727-pf-sobre-as-finalidades-do-pdde>. Accessed on: Nov. 12, 2017.

MOORE, D. S.; NOTZ, I.; FLIGNER, A. **A estatística básica e sua prática**. 6. ed. São Paulo: LTC, 2014.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT – OECD. **Education at a glance 2017**: OECD indicators. 2017. Available at: <http://dx.doi.org/10.1787/eag-2017-en>. Accessed on: Feb. 21, 2018.

PREFEITURA DE MANAUS (Município). **Manaus supera meta do MEC e atinge projeção para 2019 em nota do Ideb**. 2016. Available at: <http://semed.manaus.am.gov.br/manaus-supera-meta-do-mec-e-atinge-projecao-para-2019-em-nota-do-IDEB/>. Accessed on: Aug. 09, 2017.

RICHARDSON, R. J. **Pesquisa social**: métodos e técnicas. 3. ed. São Paulo: Atlas, 2012.

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