

Chapter 189

The influence of the Brazilian mathematical olympic of public schools on the basic education development index: An analysis in the municipality of Coruripe-Alagoas



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ABSTRACT

This article aims to analyze the influence of the Brazilian Mathematical Olympiad of Public and Private Schools (OBMEP) on the Basic Education

Indexes (IDEB) in a municipality in Alagoas from 2007 to 2017. It was developed from the collection and analysis of data through interviews and semi-structured questionnaires prepared by the proponents themselves, and directed to the coordinators of the referred municipality, in order to analyze the influence of the Brazilian Mathematical Olympiad of Public Schools on the results of the IDEB. From the calculation of the data obtained, it was clear that since the insertion of programs aimed at improving the performance of students in the OBMEP was also reflected, also reflected improvements in the results of the IDEB of the municipality, which reached 6.3 points in 2017, which means an increase of 1.9 points compared to 2015.

Keywords: Brazilian Public School Mathematics Olympiad, Basic Education Development Index, Influences.

1 INTRODUCTION

The research and extension programs offered by CAPES directed to the university (PIBID, Pedagogical Residency), the internships worked throughout the undergraduate course, the experiences lived in the practical field, the studies directed to POLYA (1977) and OBMEP, all of these, are part of the master spring that motivated the development of this research.

The interest in this theme arises from the knowledge of studies of some theorists at the university, especially POLYA (1977), and their studies with emphasis on problem solving. From then on, we sought to understand their strategies in the applications of questions found in the OBMEP tests, leading to reflections on the relevance and main role of OBMEP in the teaching of mathematics. Because it is a tool of great value, in which its main bias is centered on problem solving and contextualization of mathematics teaching, we sought to analyze its influence on the improvement of mathematics teaching in the municipality of Coruripe-AL. The choice of this municipality is due to the fact that it presents high rates of awards in the OBMEP since 2005, the period of its implementation, as well as in the IDEB, where it stands out among the other municipalities of Alagoas.

To measure the quality of Brazilian education, the Brazilian Education Development Index (IDEB) was implemented in 2007 by INEP, having as analysis factors the Brazil Test and the Approval Flow, formulated to measure the quality of national learning and establish goals for the improvement of teaching.

Data from the IDEB of the municipality of Coruripe, indicate a significant growth between the years 2007, to the last result of 2017 published in 2018 (QEDU, 2919). In another survey conducted with OBMEP data having as research subject this same municipality of Alagoas, it was possible to verify an increase in the number of medals and honorable mentions during the annual editions (OBMEP, 2019).

This study aims to analyze the influence of OBMEP on the IDEB of the municipality of Coruripe-AL, considering the significant increase in the number of awards and results of the IDEB in the period from 2007 to 2017. From this, it is also intended to score the relevance of strategies and studies aimed at better results in the OBMEP, and how these studies end up reflected positively in the results of the IDEB. This research leads us to investigate how much the Brazilian Public School Mathematics Olympiad has influenced this growth in the aforementioned period. For this, a qualitative-quantitative research of the exploratory type will be carried out based on data collection in the final years of elementary school of the municipal network of the referred municipality.

2 MATHEMATICS OLYMPICS

2.1 WHAT IS A MATH OLYMPIAD?

When referring to the Olympics it is important to mention on the other hand the Greek Olympic Games, source of inspiration for the emergence of the mathematical Olympiads that brings with it in its range, disputes organized in modalities in which athletes compete among themselves for achievements in order to obtain winners, and finally receive their due awards (RUBIO, 2010).

When it comes to the Olympics, especially those of mathematics, Maciel (2009) explains that mathematical competitions had been organized for a long time, since the mid-sixteenth century, being famous the challenges in which important mathematicians committed their reputation, reasonable amounts of money and even their professorships in important universities. This type of challenge provided competitors with performance and prominence for solving highly complex challenges.

A Mathematical Olympiad is characterized by a sequence of tests, composed of thought-provoking problems, which employs mathematics to obtain the solution. In most of the tests, of the various existing competitions, the problems that compose them do not require from the student high mathematical knowledge, but rather, the ability to interpret, create and improvise as quickly as possible (BAGATINI, 2010, p.12).

The mathematical Olympiads arise with the purpose of improving the quality of mathematics teaching, arousing the interest of students to study, also influencing the taste for mathematical problems enriching and stimulating studies in the area.

2.2 THE BRAZILIAN MATHEMATICAL OLYMPIAD OF PUBLIC AND PRIVATE SCHOOLS (OBMEP)

The Brazilian Mathematical Olympiad of Public and Private Schools - OBMEP - is a national project aimed at Brazilian public and private schools, with the insertion of private institutions in its 13th edition in 2017, held by the National Institute of Pure and Applied Mathematics - IMPA and the Brazilian Mathematical Society - SBM, and encouraged by the Federal Government.

Created in 2005 and in order to arouse the interest of students in mathematics and identify talents in the area, its main objectives are:

Stimulate and promote the study of Mathematics; contribute to the improvement of the quality of basic education, enabling a greater number of Brazilian students to have access to quality didactic material; identify young talents and encourage their entry into universities, in the scientific and technological areas; encourage the improvement of public school teachers, contributing to their professional appreciation; contribute to the integration of Brazilian schools with public universities, research institutes and scientific societies and promote social inclusion through the dissemination of knowledge (OBMEP REGULATION, 2019).

It is important to highlight that the OBMEP was presented to the school community and to Brazilian society as a project of social and scientific inclusion inspired by the NUMERATIZAR Project developed in the state of Ceará in 2003, which aimed to develop strategies that make it possible to improve the quality of Mathematics Teaching in Basic Education, because "discover, disseminating and enhancing the talents of our youth is the most effective and rapid form of social inclusion." (NUMERATIZAR PROJECT, n. d.). As in the Numeratizar Project, OBMEP is divided into levels.

The OBMEP is aimed at students from the 6th grade of Elementary School to the last year of High School, from municipal, state and federal public schools, and private schools, as well as to the respective teachers, schools and education departments, all located in the Brazilian territory. Its realization is divided into two phases. In the first phase: application of objective test (multiple choice) to all students enrolled by schools, and second Phase: application of discursive test to students selected by schools for the Second Phase, according to the classification criteria.

Students participating in OBMEP are divided into 3 (three) levels, according to their level of education. Level 1 (one) students enrolled in the 6th or 7th year of Elementary School, level 2 (two) students enrolled in the 8th or 9th year of Elementary School and level 3 (three) students enrolled in any grade of High School.

In its 14th edition in 2018, OBMEP counted the participation of 54,498 schools in which 18,237,996 students were enrolled in its 1st phase. In the 2nd phase participated in the Olympiad 50 183 schools from all over the country with participation of 952 782 students.

At the time of the OBMEP award (medals, honorable mentions and scientific initiation scholarships) are awarded the students with the best scores in the second phase test, standing out among the other participants and can generate motivation and interest in mathematics. Students awarded medals are offered

the opportunity to participate in the Jr. Scientific Initiation Program (PIC Jr – OBMEP), which consists of making the student enter the contents and interesting questions of mathematics.

The Jr. Scientific Initiation Program (PIC) allows the students awarded in each edition to enter a bank of interesting mathematics questions, expanding their knowledge and preparing them for professional and academic entry. The student will have two options regarding classes, the PIC in the face-to-face or virtual format. At the disposal of the students the OBMEP provides a virtual forum with the help of moderators students can perform tasks aggregated to the classes. From the regulation are objectives of the PIC:

Awaken in students the taste for mathematics and science in general; motivate students in their professional choice for scientific and technological careers; deepen the mathematical knowledge of students, through solving and writing problem solving, reading and interpreting mathematical texts and studying topics in a more in-depth way and with greater mathematical rigor; develop in students some skills such as: systematization, generalization, analogy and ability to learn on their own or in collaboration with other colleagues; encourage the mathematical improvement of teachers, especially teachers of scholarship students and Stimulate an articulation between schools and universities (OBMEP, 2019).

When it comes to the participation of students in the PIC Jr. in the municipality of Coruripe, the program has the participation of 20 students until the recent year of 2019, contributing to greater learning in the area of mathematics, which has reflected positively on the school environment and the daily life of the student.

In addition to the PIC, there is also the disposition of students the Mentors Program that aims to meet the students of the PIC and offer the study of advanced content in different areas, and the availability of courses taught by university professors on specific topics.

In 2018, the OBMEP LEVEL A was launched for the first time held by the Pure and Applied Mathematics Institute (IMPA) with the support of the Brazilian Mathematical Society (SBM), the Ministry of Science, Technology, Innovation and Communications (MCTIC) and the Ministry of Education (MEC), aimed at students of the 4th and 5th grades enrolled in municipal public schools, Brazilian state and federal in order to reveal talents earlier, strengthening and seeking excellence in the area of mathematics.

2.3 PERFORMANCE AND OBJECTIVES OF OBMEP IN BASIC EDUCATION

Since its implementation, OBMEP has been developing a very important role in the teaching of mathematics promoting significant changes in public schools in the country, stimulating the study of mathematics through challenging problems, filled with strategies and logical reasoning arousing the interest of students and teachers through the contextualization and resolution of problems found in their tests modifying and contributing positively in the teaching and learning process.

In its organizational structure are challenging issues and a range of didactic materials, as well as a virtual platform directed to the study and deepening of Mathematics, also counting on programs directed to the preparation of students. The benefits and support programs, especially PIC Jr and OBMEP in school,

have aroused an increasing interest of students and teachers, directing them to expand their mathematical knowledge. In this sense, Biondi (2012, p. 04) states that, "OBMEP influences the quality of public education, increasing the average grade of Mathematics of schools in the Brazil Test [...]".

According to the research conducted by Biondi (2012) the OBMEP is a significant tool in the learning of mathematics in public schools also contributing to a greater deepening in the mathematical knowledge of teachers, reflecting positively on the life of the student who will be one of the main targets.

3 BASIC EDUCATION DEVELOPMENT INDEX

The Basic Education Development Index (IDEB), originated in 2007 by INEP (Anísio Teixeira National Institute for Educational Study and Research), is considered an indicator that encompasses two important characterizations for the quality of education: the school flow and the average performance of the evaluations. The IDEB also enables the improvement of educational policy aimed at the quality and advancement of education in the country. According to Fernandes (2007), the Ideb is an objective indicator that seeks to assign values from 0 to 10 to the education systems of Brazil from the combination of two factors: flow and learning.

According to the Ministry of Education, IDEB:

The Ideb works as a national indicator that enables the monitoring of the quality of education by the population through concrete data, with which society can mobilize in search of improvements. (MEC, 2009).

Working on top of the goals instituted since 2005, on a scale of 0 to 10, with the objective that in 2021, Brazil will reach a grade of 6.0, to be at the level of the OECD (Organizations for Economic Cooperation and Development), which is a supranational body based in Paris, which brings together the countries with the largest economies in the world. The OECD is responsible for implementing the Programme for International Student Assessment, PISA, carried out every three years, with a sample of pupils aged 15 to 16 from public and private schools.

Data from the latest PISA report in 2019, Brazil ranked 73rd in mathematics among the 79 countries that participated in the assessment in the areas of Science, Portuguese and Mathematics. In the 2018 edition, more than 13,000 Brazilian students participated, in which the results will be released in 2019. These allow the comparison of the performance of students and the learning environment between different nations. The objective of this evaluation is to produce indicators that contribute to the discussion of the quality of education in the participating countries.

According to Fernandes (2007), an ideal teaching model:

[...] it would be one in which all children and adolescents had access to school, did not waste time with repetitions, did not abandon their studies early and, at the end of it all, learned. (FERNANDES, 2007).

To increase educational quality, and achieve the established goals, INEP developed six indicators according to the country's reality, first published in 2002: (1) Sociodemographic context; (2) the conditions of offer; (3) Access to and participation in education; (4) school efficiency and performance; (5) School performance; (6) Funding and spending on education. According to the United Nations Organization of States (UNESCO) and the Organization for Economic Cooperation and Development (OECD), these are some factors that influence the quality and performance of a country's education.

From this, the IDEB is carried out on top of the performance of the Brazil Test and the Basic Education Evaluation System (SAEB), which are carried out in the final years of elementary school I (1st to 5th grade) and elementary school II (6th to 9th grade).

4 THE IDEB CALCULATION

The IDEB is calculated through the product of two factors, the Learning performance in the disciplines of Portuguese and Mathematics obtained in the Brazil Test, and the Performance, defined as flow, the approval rate of the school or system, obtained in the School Census, that is:

$$\text{IDEB} = \text{Performance} \times \text{Yield}$$

According to the IDEB 2019 Technical Summary, the IDEB calculation:

[...] obeys a formula in which the scores of the Portuguese Language and Mathematics tests are standardized on a scale from 0.0 (zero) to 10.0 (ten), then the average of these two grades is multiplied by the average (harmonic) of the pass rates of the series of the stage (initial years, final years and high school), which, in percentage, varies from 0 (zero) to 100 (one hundred). (INEP/MEC, 2021).

As the mean of the IDEB is on a scale from 0 to 10, it is necessary to multiply by 10, and it is also used for attribution of grades of schoolwork. To set the Learning Rate (Performance), just use the following algorithm:

$$\text{PERFORMANCE (D)} = \frac{\text{PROFICIENCIA NA PROVA BRASIL-LIMITE INFERIOR DAS PROFICIÊNCIAS}}{\text{LIMITE SUPERIOR-LIMITE INFERIOR}}$$

Table 01- Lower and Upper Limits of Standardization

Series/Year	Mathematics		Portuguese	
	Inferior	Superior	Inferior	Superior
Year 5	60	322	49	324
Year 9	100	400	100	400

SOURCE: IDEB Technical Note (INEP, 2009)

The lower and upper limits are values presented in table 1, located at 3 standard deviations above and below the average proficiency of all students who took the 1997 SAEB, the year in which the scale was defined.

To illustrate, we will use the data of a school X of a given year of elementary school of the final years. This municipality was able to obtain the averages 243.25 and 249.51, respectively, in Portuguese

and Mathematics in the final years of elementary school according to the results of the Prova Brasil. The Performance in Portuguese is calculated:

$$D_{\text{Port}} = \frac{243,25-100}{400-100}$$

$$D_{\text{Port}} = \frac{143,25}{300}$$

$$D_{\text{Port}} = 0,477$$

Performance in Mathematics

$$D_{\text{Mat}} = \frac{249,51-100}{400-100}$$

$$D_{\text{Mat}} = \frac{149,51}{300}$$

$$D_{\text{Mat}} = 0,498$$

Now just average between both performances.

$$\text{PERFORMANCE} = \frac{0,477+0,498}{2}$$

$$\text{PERFORMANCE} = \frac{0,975}{2}$$

$$\text{PERFORMANCE} = 0.488$$

The income, or approval flow, is made at the end of each year through the school census. If there is no transfer or death, it is placed on top of three categories, Approved, Failed and Quitter. Those approved are those who, at the end of the school year, met all the requirements of performance and attendance, according to the school's bylaws. Those who fail are students who have not fulfilled the necessary conditions, such as performance and/or attendance according to the legislation of the school unit. The dropouts are those who left the school during the school year, having their enrollment canceled.

The performance rate is defined as the ratio between the number of successful students and the sum of students in the three categories. The performance indicator used in the IDEB is the number of school years a typical school student spends to complete a grade. In a situation, where there is neither failure nor dropout, this amount would naturally be one, that is, only one school year would be spent to complete each school year. Mathematically the number of school years for a student to complete each grade is given by the inverse of the pass rate of the respective grade.

Continuing our demonstration with the same school and considering the final years of elementary school, we constructed Table 02 to present the calculation of performance.

Table 02 – Calculation of IDEB Income

	6th grade	7th grade	8th grade	9th grade
Approval Rate %	88,3	89,5	90,5	95,0
Approval Rate (decimals)	0,883	0,895	0,905	0,95
Years of study required to complete grade	1,13	1,11	1,10	1,05

SOURCE: QEdU (2019a)

Considering the pass rate in the 6th grade was 0.883, it takes $1/0.883 = 1.13$ years for a regular student to complete their first year in the final years. Applying this algorithm in the rest of the following school years, we have the values shown in the last row of Table 02.

To know how many school years are needed to complete elementary school, 6th to 9th grade, it is enough to add the four school years, $(1.13 + 1.11 + 1.10 + 1.05 = 4.39)$, that is, it will take 4.39 years to complete the final years of elementary school.

Therefore, the income indicator is the result of dividing the number of grades/year by the number of school years to complete the stage. In the case shown, the Yield is:

$$\text{YIELD} = \frac{4}{4,39}$$

$$\text{YIELD} = 0.91$$

To get the IDEB from this school, just make product of PERFORMANCE by PERFORMANCE and by 10.

$$\text{IDEB} = 0.488 \times 0.91 \times 10$$

$$\text{IDEB} = 4.44$$

5 METHODOLOGY

The research was conducted in the municipality of Coruripe-AL, through the municipal education secretariat. The starting point of the research is centered on the analysis of data collection of the IDEB of the referred municipality and its prominence among the other municipalities of Alagoas when it comes to awards in the OBMEP, leading us to analyze the relationship between OBMEP/IDEB. In order to analyze the influences of the Brazilian Mathematics Olympiad of Public and Private Schools (OBMEP) on the Basic Education Development Index (IDEB), the work was developed from research and information provided by the general coordinator of projects, coordinator responsible for monitoring the IDEB and the secretary of education of the municipality.

The present work was based on the survey and analysis of data found on the OBMEP and INEP website and on a semi-structured questionnaire. This was applied on May 14, 2019 and consisted of ten open and closed questions, arranged in printed material. In the questionnaire there were questions regarding the training of the coordinators, time of exercise of the function, experience in the function, continuing education for the faculty, the performance of the students, the tools that contributed to the IDEB, the

programs directed to Prova Brasil, the programs directed to OBMEP, and, finally, the relationship between the OBMEP and the IDEB. According to Moreira and Caleffe (2006) there are some advantages in the use of questionnaires because they provide the use of time efficiently, ensures anonymity for the affected public, the return is guaranteed most of the time, and the questions follow a pattern.

In addition to the questionnaire, information was extracted from the municipal secretary of education and other coordinators responsible for monitoring the school performance of the institutions of the municipal education network. The research made it possible to know the vision of these professionals on the influences of OBMEP in IDEB, and how this work has been developed over the years leading the municipality to stand out in the framework of awards and consequently in the IDEB in the state of Alagoas.

6 RESULTS AND DISCUSSION

Throughout the evaluations of the Basic Education Development Index (IDEB), the state of Alagoas, in the final grades of elementary school of the public network managed to reach the goal proposed by INEP only in 03 (three) years, as shown in the table below.

Table 03: IDEB – Alagoas/Projected Goals

YEAR	IDEB	GOAL
2005	-	2,3
2007	2,6	2,3
2009	2,7	2,5
2011	2,6	2,7
2013	2,8	3,2
2015	3,2	3,5
2017	3,9	3,8

Source: INEP (2019b)

The state of Alagoas, in 2017, had a number of 36,552 students enrolled in the final grade of public elementary school, in the same year the Prova Brasil had the participation of 85% of this student. As can be seen in detail below, just over 10% learned what was considered suitable for the final grade of elementary school.

Table 04: Proficiency Levels of the Evaluated

Discipline	Advanced	Proficient	Basic	Insufficient
Portuguese	3%	21%	56%	20%
Language				
Mathematics	1%	9%	51%	39%

Source: QEDu (2019c)

Analyzing the table above it can be seen that most students in Alagoas are in the basic and insufficient levels. About more than 70% of the students are in these two levels in Portuguese, and more than 90% are also in these levels in Mathematics. Making a comparison with the other states of the federation it is observed that Alagoas presented low rates when it comes to the Brazil Test.

On the other hand, it can be observed that the municipality of Coruripe counting in the total of 17 (seventeen) schools of attendance for elementary education has stood out achieving expressive results over the years in relation to the other municipalities of the state when it comes to the municipal average of the IDEB. For better analysis let's look at the following table:

Table 05: Result of the IDEB 8th Grade/9th Year of Coruripe - Projected Goals

Year	Ideb	Goal
2005	2,7	-
2007	3,1	2,7
2009	3,9	2,9
2011	3,3	3,1
2013	3,8	3,5
2015	4,4	3,9
2017	6,3	4,7

Source: INEP (2019)

According to the table above we can analyze a continuous growth in the IDEB score since its implementation, in the last grade the municipality obtained an increase of 1.9 points, surpassing the projected grade for 2021 that would be 4.7.

In 2011 the municipality is awarded the first gold medal in the OBMEP (see table 07), and from then on the rates of the awards have a significant growth throughout the editions of OBMEP. Let's see the following tables that deal with the awards at levels 1 and 2 of the OBMEP, since the research is directed to Elementary School II, the intention is to analyze the number of medals of levels 01 and 02.

Table 06: OBMEP Level 1 Awards – Coruripe – AL

Year	Honorable Mention	Bronze	Silver	Gold
2005	4	-	-	-
2006	-	-	-	-
2007	1	-	-	-
2008	1	-	-	-
2009	-	1	-	-
2010	-	-	-	-
2011	-	-	-	-
2012	4	-	-	-
2013	12	3	-	-
2014	8	4	-	-
2015	12	8	-	-
2016	12	4	-	-
2017	8	9	-	-
2018	14	5	-	-

Source: OBMEP (2019a)

Given the data presented in the table above, we highlight the significant increase in the number of awards in the period from 2012 to 2018, only in the case of Level 01.

]Table 07: OBMEP Level 2 Awards – Coruripe – AL

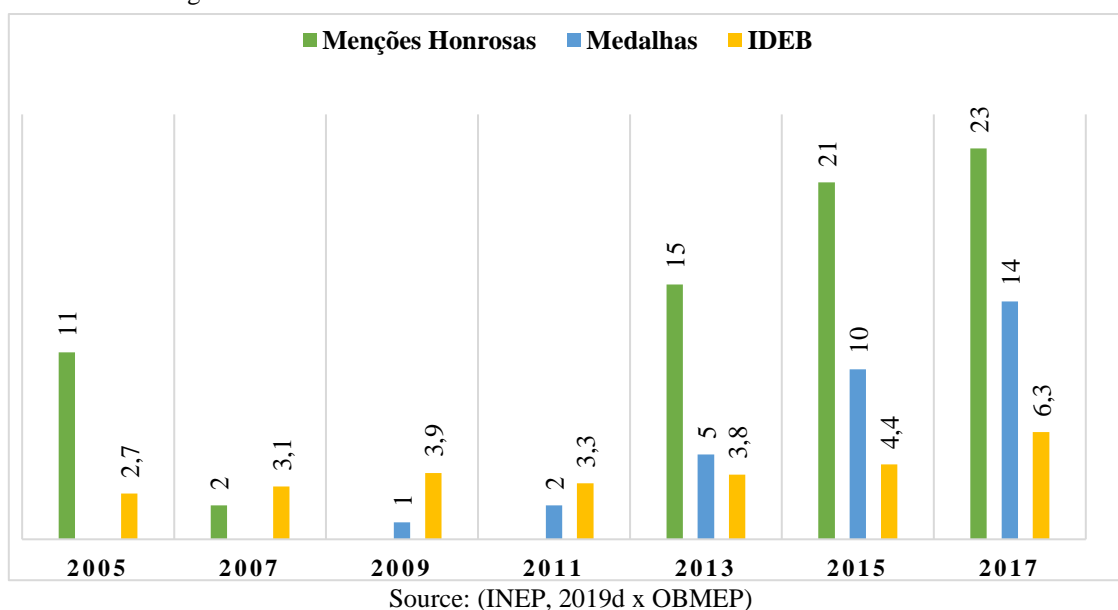
Year	Honorable Mention	Bronze	Silver	Gold
2005	7	-	-	-
2006	2	-	-	-
2007	1	-	-	-
2008	-	-	-	-
2009	-	-	-	-
2010	1	2	-	-
2011	-	1	-	1
2012	2	-	-	-
2013	3	2	-	-
2014	12	2	-	-
2015	9	2	-	-
2016	21	3	-	-
2017	15	4	1	-
2018	13	4	-	-

Source: OBEMP (2019b)

When it comes to Level 02, the awards have a greater expressiveness from 2011, the year in which the municipality receives its first Gold medal until the 14th edition of OBMEP receiving a large number of Honorable Mentions and Bronze Medals. Doing a survey in graphs of the OBMEP awards and comparing the performance of the municipality of Coruripe in the IDEB, we analyze that from the significant growth in the number of awards in the OBMEP the municipality has presented significant results in the IDEB throughout the editions until 2017. According to studies by Soares and Candian (2011), by preparing to perform well at OBMEP, students improve their performance in the classroom.

Graph 01 shows the evolution of IDEB in the municipality of Coruripe and the growth in the number of awards in OBMEP.

Figure 01: Evolution of IDEB indices / Awards in OBMEP Level 01 and 02



From the graph it is possible to note that since 2011, there is a growth whose tendency is to increase both the number of awards and also the IDEB indexes, exceeding the projected goals during the aforementioned period. It is important to add that in 2014 the municipality of Coruripe adopts the training programs for OBMEP, such as the Olympic Pole of Intensive Training (POTI), in which it offers classes directed to the improvement of the performance of students from the 6th to the 9th grade of elementary school and students enrolled in any grade of high school in the OBMEP and OBM Olympiads through financing of face-to-face classes in poles, the OBMEP in School, whose purpose is to contribute to the training of mathematics teachers in municipal and state public schools by stimulating more in-depth studies and adoption of new didactic practices in the classroom.

According to the coordinator's conception, "students who attend the training directed to OBMEP, present excellent results in the classroom, ensuring a correct approval".

It is possible to analyze in the chart above that in the year 2015 there is an increase in the number of awards in the Olympiad and consequently in the IDEB indexes. In the same year the municipality is awarded with a quantity of 21 Honorable Mentions and 10 medals, and in the year 2017, this number goes to 23 Honorable Mentions and 14 medals. We analyzed the period from 2015 to 2017, due to the fact that the training began in 2015, awaiting significant results in the following years.

In view of these data, as well as analyses of the IDEB indexes, Coruripe stands out in relation to the other municipalities in the state. Thus, some questions arise in the face of this panorama. How to explain that the municipality of Coruripe has achieved good results in the Brazil Test? When it comes to the increase in the number of awards in the OBMEP, is there any influence of the OBMEP in the IDEB of the municipality? Through the interview conducted with the managers, the intention is to show that the research data are consistent with the answers obtained according to the following questions mentioned above.

For the coordinator, "from the gold medal, all management, from the secretary to the teachers were motivated to work more intensely so that all schools could achieve awards, thus reflecting on the performance and learning of students in the classroom, and contributing to the growth of IDEB in our municipality."

Through the semi-structured interview with the coordinator, it is perceived that the IDEB has advanced positively due to the monitoring of educational institutions and the projects adopted by the Secretary of Education of the Municipality (SEMED) as pedagogical monitoring in Portuguese Language and Mathematics, training for OBMEP, continuing education for teachers and attractions directed to sports. In addition, partnerships with foundations, such as the Lemann Foundation, which is an entity active in the area of education, whose some of its objectives are to carry out a series of actions aimed at innovation, management, educational policies and the formation of a network of young talents, and institutes directed to education have played a fundamental role in the educational process, contributing positively to these results.

In the coordinator's perspective, "the work focused on OBMEP has influenced us so that we did not participate not only in the OBMEP, but in other Olympics such as the Kangaroo of Mathematics, the municipalities, and we always got awards. Our students excel through existing projects and reinforcements."

In addition to the work carried out by the educational management and the entire school community, it is important to highlight the incentive for teachers proposed by the education secretariat itself, in which awards are directed to these professionals who are of great importance in the teaching/learning process and consequently in the IDEB. In addition, over the years the outstanding students also had the opportunity to be rewarded for their school development, which has led to the present day a greater engagement and motivation in the environment. The good relationship between all, contributes to successful practices. (LIBÂNEO et.al., 2012, p. 251-252).

7 FINAL CONSIDERATIONS

This article presents an approach on the influence of the Brazilian Mathematics Olympiad of Public and Private Schools (OBMEP) on the Basic Education Indexes (IDEB). The studies carried out demonstrate the real importance when dealing with the relationship between OBMEP and IDEB. Thus, it is necessary to return to the starting point of the research and direct to its objective, which was to analyze how much the OBMEP has influenced the IDEB of the municipality of Coruripe.

We analyzed that the work adopted by the municipality and the strategies developed and directed to the IDEB, and the OBMEP itself, presented positive effects on the educational process and consequently on the averages of the educational indexes. It is also observed that from the greater engagement of students participating in the programs directed to OBMEP there is a significant result in school performance, also reflecting in the increase in the averages of the IDEB. Recognizing the fundamental value of OBMEP in

the educational process is of great importance, which have demystified the teaching of mathematics through the challenging problems found in the tests and a greater contextualization of the mathematical contents.

In addition, the insertion of the Olympic has contributed to a greater involvement and deepening of mathematics education professionals, modifying and innovating their pedagogical practices, contributing to the teaching and learning process generating results in the school context, and later, in the averages achieved in the Brazil Test.

Thus, the study shows that there is an influence of OBMEP in the IDEB, causing a constant and significant growth in the indices related to education in Coruripe/AL. Through the data presented we can verify the performance of managers, teachers and students engaged in the preparation for OBMEP. In addition, analyzing the work plan of the education of the municipality can be perceived a concern with the OBMEP, adhering to the projects of preparation, professional qualification of teachers and pedagogical monitoring, with this, is reflected in the index published every two years.

And, therefore, the municipality has been standing out both in the IDEB and in the OBMEP among the other municipalities of the state of Alagoas, as was presented in the work, being a model being treated in projects and pedagogical monitoring in mathematics.

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