Efficacy Report

Núcleo de Apoio a Municípios e Estados (NAME)

March 23, 2016

Product Summary

In education in Brazil, a Sistema de Ensino is an integrated business solution designed for educational institutions and their educational environment, which optimizes teaching and learning efficacy through diagnosis, customization, implementation and monitoring of a particular set of dynamic educational resources and tools. NAME (Núcleo de Apoio a Municípios e Estados) initiated its activities in 1999, establishing pedagogical partnerships with public teaching in a few cities in the state of São Paulo. Based on the success of the set up in those locations, today NAME has expanded to cover all the Brazilian states, in 89 municipalities, with over 114,000 students.

NAME's commitment is to take to the students of associated municipalities the most advanced pedagogical, technological and administrative resources, always seeking to offer quality public education. The program consists of rendering services through the use of didactic material according to the Law of Basic Education Guidelines, the National Curriculum Parameters and the National Curriculum References, together with pedagogic consultancy, continued distance education, support service to inclusive education and also education technologies.

Intended Outcomes

Intended Outcome 1: NAME schools will have increased average IDEB scores.
Prova Brazil is the national standardized exam in Brazil, which is administered every other year for students in grades five and nine. Results from Prova Brazil are combined with information about student flow (or rate of grade promotion) to create a Basic Education Development Index, known as IDEB. School results on the IDEB are publically available through National Institute of Educational Studies and Research (INEP, 2016).

Intended Outcome 2: Learners will see increased average performance on internal 'simulated' national standardized exams (future research).
Simulated national standardized exams for Prova Brazil are administered in a subset of NAME schools. On average, individual students will increase their performance year over year on these exams.

Intended Outcome 3: NAME schools will become increasingly effective, through continuous improvement in the areas of classroom practice, assessment, monitoring learner progress and leadership (future research).
Overall NAME schools will become more effective through continuous improvement in the areas of classroom practice, assessment, monitoring learner progress, and leadership.

Intended Outcome 4: NAME schools will increase their 'student flow.'
Student flow is a measure of the students who at the end of the school year progress to the next grade in their school.

Intended Outcome 5: Increased school performance in external national standardized exams, with learners having a positive learning experience.
Learners' positive learning experiences are determined by the degree to which their social and emotional well-being is encouraged to meet their individual needs and ultimately support them in becoming flourishing members of society.

Intended Outcome 6: Learners will reach the level of adequate in math and Portuguese assessed in national standardized exams average(future research).
The National Plan for Education (PNE) is a law, valid for ten years since 2014, that establishes goals in the education field. The Ministry of Education defined level of adequate proficiency in math and Portuguese and is using several national exams to assess the level of the students (Provinha Brasil, ANA, Prova Brasil). Increased rates of students within the NAME partners' schools will reach adequate level in math and Portuguese.

Foundational Research

Overview of Foundational Research

The new NAME has been designed to achieve and overcome two main goals defined by the National Educational Plan (PNE, launched in 2014). Goals to be reached by 2025 include eradication of illiteracy for children up to the age of eight years old, and achievement of national marks for the IDEB (which measures both learning proficiency and student flow). The design follows laws and guidelines defined by the Government.

The Brazilian Government has instituted the IDEB (Índice de Desenvolvimento da Educação Básica), as an indicator of the quality of public teaching in 2005. Only 40% of fifth-grade students were adequately proficient in Portuguese, according to 2013 IDEB data. By ninth grade, this percentage drops to 23%. The rates in math are even more concerning to education experts; 35% of fifth-grade students are proficient in math—a number that falls to 11% for ninth-grade students, according to the same data. This presents an important opportunity for NAME to help support local schools in improving students' literacy and numeracy, as well as preparing them for the national exam.

NAME, as a partner of many public schools, has become outstanding since then among the more than 5,000 Brazilian municipalities. In the first year, 2005, the partnering municipality Dolcinópolis - SP reached the second highest IDEB rate of Brazil with one of its school (see INEP, 2005). In the following years, 2007, 2009 and 2011, the highest IDEB rate of Brazil was with one of our schools in each of the following partnering municipalities Adolfo - SP, Cajuru - SP and Nova Ponte - MG, respectively (see INEP, 2007, 2009, 2011).

Intended Product Implementation

Overview of Intended Product Implementation

A ‘Sistema’ is an integrated learning system incorporating curriculum design, teacher support and training, print content and courseware, technology platforms, assessments and other services.

NAME provides learning systems to primary and secondary programmes in public schools, from kindergarten to the ninth grade respecting laws and guidelines defined by the Brazilian Government.

NAME is contracted by the municipalities through an annual bidding process. Each bid reflects the need of the municipality as defined by the Secretary of Education. Aware of the diversity of educational proposals in a country of continental dimensions and committed to quality education for all, NAME provides educational solutions that can be tailored to different orientations of education departments.

NAME can be acquired in three segments of primary education: kindergarten, elementary 1 (Fundamental 1 from first to fifth grades), elementary 2 (Fundamental 2 from sixth to ninth grades).

For each of these three segments and at all ages, students and teachers receive didactic materials (books, activities books, notebooks, etc.) covering, according to the curriculum, knowledge on cultural, artistic, environment, sciences, math, reading, Portuguese and technologies. The delivery cycle of theses resources is bimestral. The collection includes teacher guides and regular students books and notebooks for Portuguese language, math, science, history, geography, alphabetisation, arts, English and sports. The collections also include specific preparation books for the main external academic exam: ANA (Portuguese and math) and Prova Brasil (Portuguese and math).

The Elementary 1 curriculum is organized so that all students are literate by the third year. During fourth and fifth grades, the learning of the previous years is consolidated and expanded. The curriculum is fully aligned with the proposals of PNAIC (National Pact for Literacy at the Right Age). The materials offer individual assessment sheets for teachers to monitor student learning in all subjects. The Elementary 2 curriculum is organized by skills and abilities, giving priority to reading and writing in all subjects and ensuring literacy in all areas.

NAME also offers an effective program of evaluation of learning so that the skills are evaluated based on pre-defined matrices. An action plan for improvement of school work is created based on the results from the evaluation, which is focused on improving the academic achievement of students. The evaluation of learning for various grade levels includes:

- first to ninth grades: diagnostic evaluations with application guide and correction
- first to ninth grades: assessments related to bimonthly content
- third year: simulated ANA
- five and nine years: Simulated Prova Brasil (TRI - Item Response Theory)

NAME also provides two digital platforms to support the process of teaching and learning:

NAME Online, with 55,000 pages of content distributed in various areas of knowledge - from news, biographies, simulated the interactive activities, animations, to games, videos and encyclopedia - and Digital NAME for curriculum and classroom management.

Together with these print resources, NAME provides solutions and services for educational and pedagogical support and professional development. One of the great advantages of the education system is to support educators, both in teacher training, and in supporting the development of lessons. Therefore, in addition to in-person educational events and visits to schools, educators have an online learning platform: NAME Interactive.

NAME provides support services for an inclusive education program with didactic procedures guidance, indication of pedagogical mediations, clarification of doubts about inclusion and referrals suggestion.

Product Research

Overview of Product Research

The data provided by INEP are consistent, informing level of achievement, student flow, and detailed socio-economical and general education indicators. This enables in depth studies at the municipal or school level. However, since the Prova Brasil Exam is administered every other year only for grades five and nine, we lack data about achievement in other grades. Pearson Brazil structured itself to conduct rigorous research and plan for three studies in 2016-2017, which are further described in the ‘Future Research’ section of this report.

Research Studies

Relationship Between Exposure to NAME and School IDEB Scores	
Study Citation	Not available, internal analysis based on publically available data.
Research Study Contributors	Rob Kadel
Type of Study	Correlational. This was a data mining study that matched NAME schools' performance on biennial national standardized exams (as measured by IDEB) with the number of bimesters each school used NAME in a given time period. There are two bimesters in an academic year, and the exams are administered every two years. Therefore, a maximum of four bimesters passes between each administration of national exams.
Sample Size	Number of schools included in analysis *Elementary 1 (Grades 1-5)* 2005: 129 2007: 329 2009: 574 2011: 661 2013: 816 *Elementary 2 (Grades 6-9)* 2005: 44 2007: 169 2009: 223 2011: 282 2013: 362
Description of Sample	All schools that used NAME at least one bimester in the years listed above.
Outcomes Measured	School achievement as measured by IDEB and number of bimesters of NAME implementation

Introduction

In 2005 Brazil began to administer Prova Brazil, which is a national achievement exam in math and Portuguese administered to public school students in grades five and nine every two years. Results from Prova Brazil are combined with information about student flow (or rate of grade promotion) to create a Basic Education Development Index, known as IDEB. School results on the IDEB are publically available through the National Institute of Educational Studies and Research (INEP, 2016).

Methods
All publically available IDEB data from 2005, 2007, 2009, 2011, and 2013 was downloaded from INEP on October 1, 2015. Internal records were used to identify NAME schools along with the year implementation began and, if applicable, the year it ended. All analyses were conducted at the school level since IDEB is calculated for an entire school, not individual students. Details of the sample size included for each testing period is included in table 1.

Table 1. Number of NAME schools included in IDEB analysis

Year	Elementary 1 (grades 1- 5)	Elementary 2 (grades 6- 9)
2005	129	44
2007	329	169
2009	574	223
2011	661	282
2013	816	362

In this study 'exposure' is measured by the number of bimesters each grade in a school was using NAME for. At the Elementary 1 level, there are five grades (one - five). Each grade level can use NAME for as many as four bimesters during each two-year cycle, making for 20 total possible bimesters prior to each biennial administration of Prova Brasil. At the Elementary 2 level, there are four grades (six - nine). Each grade level can use NAME for as many as four bimesters during each two-year cycle, making for 16 total possible bimesters prior to each biennial administration of Prova Brasil. Not all schools used NAME for each bimester or at each grade level, providing enough variability to correlate the number of bimesters used at each grade level and the school's corresponding average achievement score. For example, if an Elementary 1 school used NAME for four bimesters only in grades three - five, that would equal 12 bimesters.

Results
Analysis indicates that there are some moderate, statistically significant, positive correlations between exposure to NAME and IDEB (see tables 2 and 3). This indicates that during those years, schools that used NAME more consistently across multiple grade levels tended to have higher IDEB ratings. At this time, it is unclear why we see stronger relationships in some years than in others. The NAME brand was acquired by Pearson in 2012, therefore information is limited as to any changes that may have been made to the product in prior years.

Table 2: Grade 5 IDEB Correlations with Biennial Exposure to NAME, Elem 1 (Grades 1-5)

Prova Brasil Year (N)	Correlation Between School Avg. IDEB Score at Grade 5 and Elem 1 Biennial Exposure to NAME (* = p < .05; ** = p < .01; ***

	= p < .001)
2005 (120)	0.19*
2007 (203)	0.08
2009 (238)	0.51***
2011 (349)	0.38***
2013 (160)	0.44***

Table 3: Grade 9 IDEB Correlations with Biennial Exposure to NAME, Elem 2 (Grades 6-9)

Prova Brasil Year (N)	Correlation Between School Avg. IDEB Score at Grade 9 and Biennial Exposure to NAME (* = p < .05; ** = p < .01; *** = p < .001)
2005 (43)	0.53***
2007 (93)	0.24*
2009 (94)	0.57***
2011 (118)	0.23*
2013 (62)	0.03

Figures 1 and 2 display these results when grouping exposure to NAME by higher amounts versus lower amounts. Again, there appear to be some patterns, though they are weak. Schools that have more exposure to NAME tend to have higher average scores on IDEB. It should be noted that correlations at the school level may not be as sensitive as correlations that could be made at the individual grade level. However, at this time, data are not available for bimesters of NAME use within schools at each grade level. Furthermore, the reader should be cautioned against making any *causal* inferences from these results. While there appears to be a positive relationship between NAME exposure and IDEB performance, we cannot say at this time that NAME is the cause of higher IDEB performance.

Figure 1: Average Grade 5 IDEB Ratings by Biennial Amount of Exposure to NAME, Elem 1 (Grades 1-5)

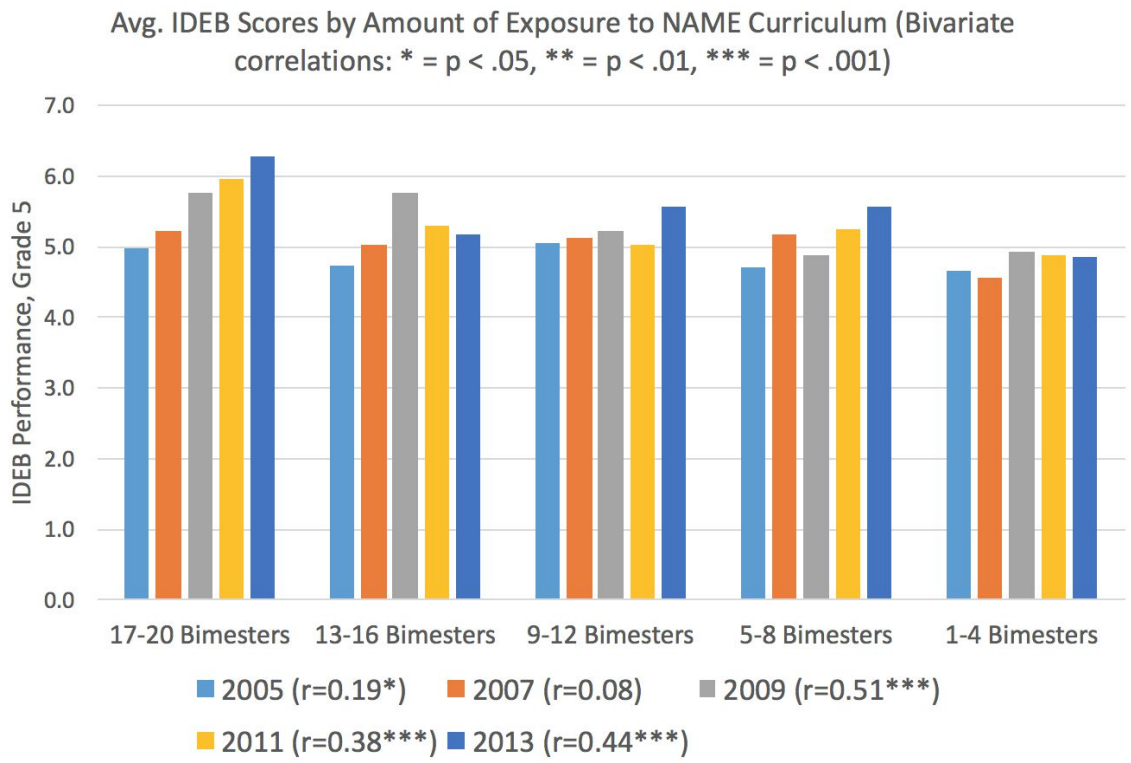
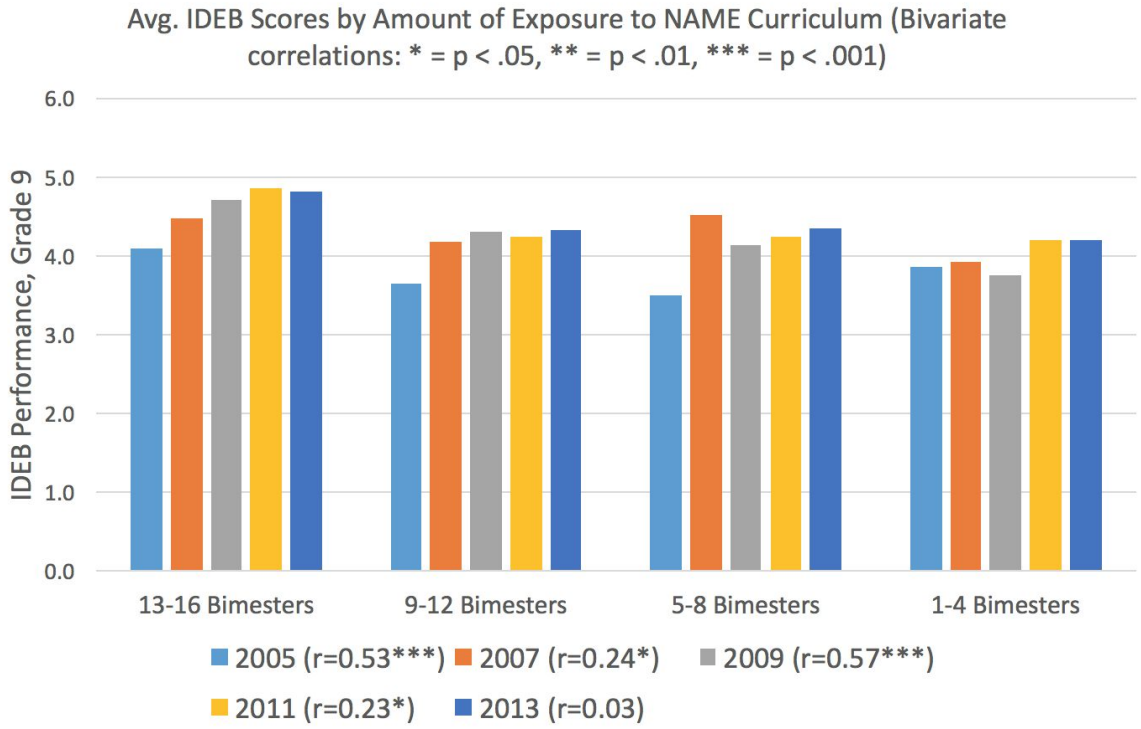


Figure 2: Average Grade 9 IDEB Ratings by Biennial Amount of Exposure to NAME, Elem 2 (Grades 6-9)



Relationship Between Cumulative NAME Implementation and IDEB Score	
Study Citation	Not available, internal analysis based on publically available data.
Research Study Contributors	Rob Kadel
Type of Study	Correlational. This was a data mining study that matched NAME schools' performance on biennial national standardized exams (as measured by IDEB) with the cumulative number of bimesters each school used NAME prior to each testing cycle.
Sample Size	Number of schools included in analysis *Elementary 1 (Grades 1-5)* 2005: 129 2007: 329 2009: 574 2011: 661 2013: 816 *Elementary 2 (Grades 6-9)* 2005: 44 2007: 169 2009: 223 2011: 282 2013: 362
Description of Sample	All schools that used NAME at least one bimester in the years listed above.
Outcomes Measured	School achievement as measured by IDEB and cumulative number of bimesters of NAME implementation.

Introduction

It is not uncommon for a municipality that is preparing to administer state examinations to purchase NAME for its schools shortly before testing to help students 'cram' for the tests, then drop NAME after testing is complete. We questioned whether this short-term use of NAME is effective or whether using NAME for an extended period of time might yield stronger results on state tests.

Methods

Using the same measurement of 'exposure' as above, each school's total number of bimesters was summed across all years that the school used NAME from 2005 to 2013 to create a 'cumulative' measure of NAME exposure. For example, if an Elementary 2 school used NAME

in all grades six - nine at each interval 2007 - 2011, that would equal four grade levels x four bimesters x three Prova Brasil administrations, equalling 48 bimesters.

Also of note, these cumulative totals represent *any* amount of time that a school used NAME, even if not recent. For example, if a school used NAME in 2009, 2010, and 2011, and it accumulated 24 bimesters over those three years, that 24 bimester total would be included in any IDEB analysis that came from 2009 or later (i.e., 2009, 2011, and 2013). There is no rationale at this time for excluding a school from these analyses, as it is not known what the lasting effect of NAME would be.

Cumulative bimester totals were then correlated with the schools' IDEB ratings at each biennial administration of Prova Brasil (e.g., in the example above, with 2011 Prova Brasil results), yielding the results below.

Results

There were mostly weak to moderate positive significant correlations between IDEB ratings and schools' total exposure to NAME (see tables 4 and 5). At this time, it is unclear why we see stronger relationships in some years than in others. It should be noted that correlations at the school level may not be as sensitive as correlations that could be made at the individual grade level. However, at this time, data are not available for bimesters of NAME use within schools at each grade level. Further, larger sample sizes in later years may contribute to inflated significance levels as tests of statistical significance are sensitive to larger samples. Lastly, the reader should be cautioned against making any *causal* inferences from these results. While there appears to be a positive relationship between NAME exposure and IDEB performance, we cannot say at this time that NAME is the cause of higher IDEB performance.

Table 4: Grade 5 IDEB Correlations with Cumulative Exposure to NAME over Multiple Years, Elem 1 (Grades 1 - 5)

Prova Brasil Year (N)	Correlation Between Grade 9 School Avg. IDEB Score and Cumulative Number of Bimesters of NAME Use (* = p < .05; ** = p < .01; *** = p < .001)
2005 (120)	0.19*
2007 (329)	0.25***
2009 (574)	0.30***
2011 (661)	0.29***
2013 (816)	0.24***

Table 5: Grade 9 IDEB Correlations with Cumulative Exposure to NAME over Multiple Years, Elem 2 (Grades 6 - 9)

Prova Brasil Year (N)	Correlation Between Grade 5 School Avg. IDEB Score and Cumulative Number of Bimesters of NAME Use (* = p < .05; ** = p < .01; *** = p < .001)
2005 (43)	0.53***
2007 (169)	0.26***
2009 (222)	0.31***
2011 (281)	0.37***
2013 (362)	0.28***

Future Research Plans

Overview of Future Research Plans

Due to limitations in the data provided by INEP (National Institute of Educational Studies and Research) current analyses of achievement data on NAME students are limited to the school level types of analyses described in the previous section. Further, there were changes in 2015 to NAME products, including a new learning management system. These prohibited in-depth data collection at this time. However, we have plans to conduct three studies in 2016-17 as detailed below.

Future Research Plans

There are three planned research studies, including an implementation study, a post hoc matched comparison study of achievement, and a psychometric analysis of the concurrent validity of our internal simulated exams with Prova Brasil Exam. All future studies will be led by Pearson, but some may include external partnerships with local research organizations or universities.

Implementation Study	
Intended Start Date	Back to school 2017
Anticipated Length of Study	1 year
Type of Study	Descriptive
Research Leads	Pearson led
Intended Sample Size	10 schools
Description of Sample	Stratified random sample of NAME schools
Outcomes to be Measured	School effectiveness, as measured by observational measures of implementation fidelity and educator interviews, academic achievement, student engagement, and parent satisfaction.

Propensity Score Matched Comparison Study of NAME and Non-NAME Schools	
Intended Start Date	2016
Anticipated Length of Study	1 year
Type of Study	Matched comparison data mining study
Research Leads	Pearson led
Intended Sample Size	All NAME schools and matched comparison schools (e.g. non-NAME schools) based on Prova Brazil teacher surveys and school demographic information.
Description of Sample	A sufficiently large sample of a variety of NAME municipalities with a matched sample of non-NAME municipalities, with approximately 100 NAME schools and matched comparison schools.
Outcomes to be Measured	Achievement as measured by Prova Brazil and student flow.

Psychometric Analysis of Simulated Exams	
Intended Start Date	2017
Anticipated Length of Study	1 year
Type of Study	Correlational study to look at the relationship between internal simulated exam scores and scores on externally mandated exams, as well as determine the technical quality of the simulated exams.
Research Leads	Pearson led
Intended Sample Size	To be determined based on volunteer participation in the study.
Description of Sample	NAME schools that agree to participate in the study.
Outcomes to be Measured	Achievement as measured by newly developed simulated exams for Prova Brazil and simulated ANA.

References

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