



Passo Project

Semiannual Report

Date	May 7th, 2024
Local	Passo de Camaragibe, AL, Brazil
Goal	Inform about the development of the Passo Project from September 2023 to April 2024
Website	educall.org

The Education + AI in Action | The Nudelman Initiative is dedicated to addressing challenges such as low literacy levels and resource scarcity in socially vulnerable communities. The *Passo Project*, the first undertaking of this initiative, aims to enhance primary education in Passo de Camaragibe, Alagoas. Its mission is to ensure every child has access to high-quality, AI-enhanced education, with a special focus on kindergartners.

The initiative operates on a scalable model that is designed for straightforward implementation in small towns, which are often neglected by large-scale philanthropic efforts. It incorporates rigorous local research to continually refine and adapt the program to align with the unique cultural needs of the community.

This project has been strengthened from the outset by strategic support from an Advisory Board composed of leaders in education, as well as indispensable backing from the Lemann Center and experts from Stanford University and other prestigious institutions. These partnerships have been fundamental in shaping and guiding the strategies of the project, ensuring that our initiatives are both impactful and well-informed.



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From September 2023 through April 2024, significant progress was made in the initiative in Passo de Camaragibe. This period was dedicated to establishing the foundational groundwork for the project, engaging with local educational authorities, and initiating the active implementation of our strategic plans to boost early childhood education by integrating technology, enhancing teacher training, and fostering community involvement.

This first report not only summarizes the key activities undertaken until April 2024 but also presents contextual data about the city and the project. These insights are critical for understanding the scope and impact of our efforts.



Passo de Camaragibe

Passo de Camaragibe is a small municipality located in the northeastern Brazilian state of Alagoas. The municipality had a population of approximately 13,804 as of 2021 and it covers an area of about 251 square kilometers (IBGE 2022).



Image 1. On the left: Map of Brazil with the State of Alagoas in red. | On the right: Map of the State of Alagoas with the municipality of Passo de Camaragibe in red. *Source: Wikipédia.*

Work and Income

In 2021, the average monthly salary was 1.7 minimum wages. The proportion of employed people in relation to the total population was 10.64%. In comparison with other municipalities in the state, it ranked 48 out of 102 and 37 out of 102, respectively. In comparison with cities across the country, it ranked 3962 out of 5570 and 3541 out of 5570, respectively. Considering households with monthly income of up to half the minimum wage per person, 50.8% of the population had these conditions, which placed it in position 67 out of 102 among the cities in the state and in position 1246 out of 5570 among the cities in Brazil (IBGE 2022).



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Economy

In 2021, GDP per capita was R\$22,090.3. In comparison with other municipalities in the state, it ranked 32nd out of 102 among the state's municipalities and 2933rd out of 5570 among all municipalities. The percentage of external revenue in 2015 was 88.9%, which placed it in position 57 out of 102 among the state's municipalities and 2445 out of 5570. In 2017, the total revenue generated was R\$42,381.76 (x1000) and the total committed expenses was R\$39,813.07 (x1000). This leaves the municipality in positions 51 and 49 out of 102 among the state's municipalities and in 2221 and 2133 out of 5570 among all municipalities (IBGE 2022).

Health and Environment

The average infant mortality rate in the city is 32.26 per 1,000 live births. Compared to all municipalities in the state, it is ranked 4th out of 102. When compared to cities across Brazil, this position is 395th out of 5570.

The city has 3% of households with adequate sanitary sewage, 18.9% of urban households on public roads with trees and 12.3% of urban households on public roads with adequate urbanization (presence of drains, sidewalks, paving and wire). When compared to other municipalities in the state, it is ranked 85th out of 102, 99th out of 102 and 39th out of 102, respectively. When compared to other cities in Brazil, its position is 5050 out of 5570, 5144 out of 5570 and 2558 out of 5570, respectively (IBGE 2022).

Education

In 2010, the school enrollment rate for 6 to 14 year olds was 97.3%. In comparison with other municipalities in the state, it was in position 23 out of 102. In comparison with municipalities across the country, it was in position 3221 out of 5570.

In 2021, IDEB (Index of Development of Basic Education) for the elementary school level in the public school system was 4.7 and for the middle school level, 3.8. In comparison with other municipalities in the state, it was in positions 76 and 97 out of 102. In comparison with municipalities across the country, it was in positions 4177 and 4524 out of 5570 (IBGE 2022).



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In addition to data from IBGE (Brazilian Institute of Geography and Statistics), the Passo de Camaragibe education department made some data available to us about education in the municipality: IDEB 2023, Municipal Assessments Results and Reading Fluency Assessment.

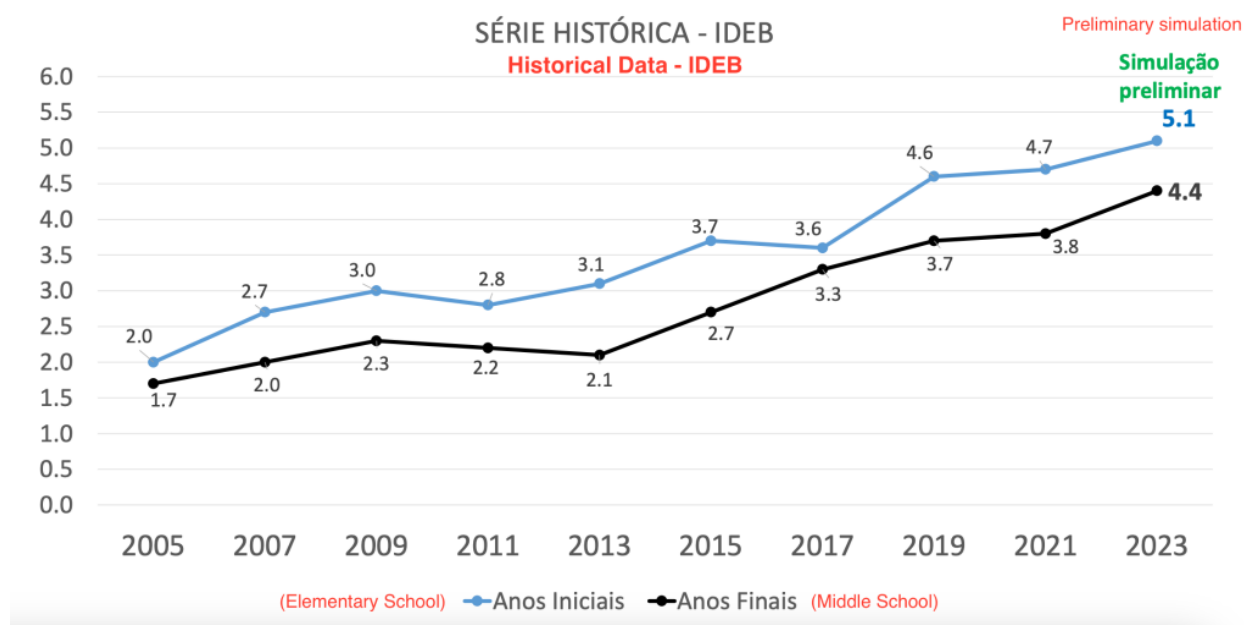


Image 2. IDEB (Index of Development of Basic Education) historical data of Passo de Camaragibe elementary and middle schools. In red: subtitles in English edited by the author. *Source: Department of Education of Passo de Camaragibe.*

According to the latest IDEB data, there were improvements in the index for both elementary and middle school levels, remaining at 5.1 and 4.4, respectively, in 2023.

Regarding the Municipal Assessments Results, from 2022, it is possible to verify that both students in the last year of elementary school (image 3) and students in the last year of middle school (image 4), got less than 50% correct in the Mathematics and Portuguese tests (elementary school) and Mathematics, Portuguese, and Natural Sciences tests (middle school).



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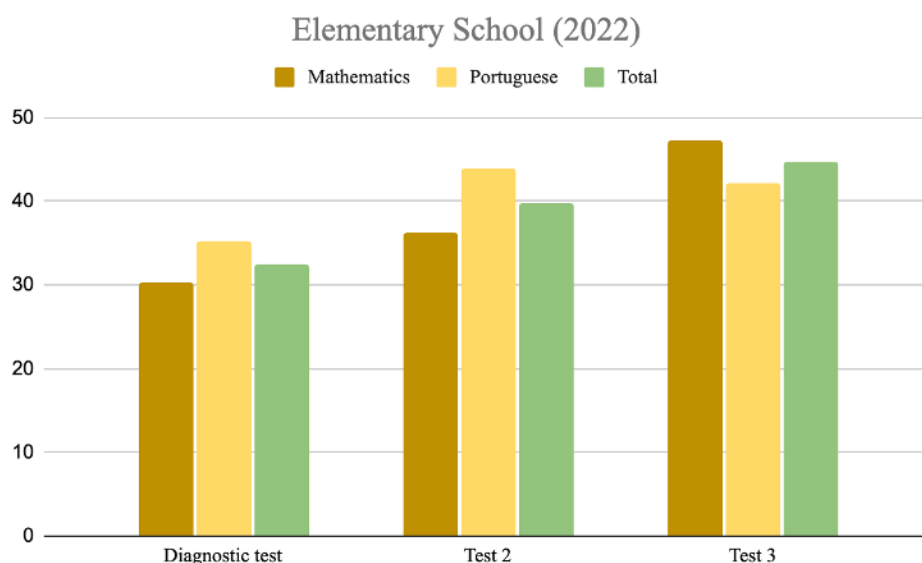


Image 3. Assessments scores, in percentage, for Mathematics and Portuguese for 4th year students (elementary school), in three different tests made throughout the academic year. *Source: Department of Education of Passo de Camaragibe.*

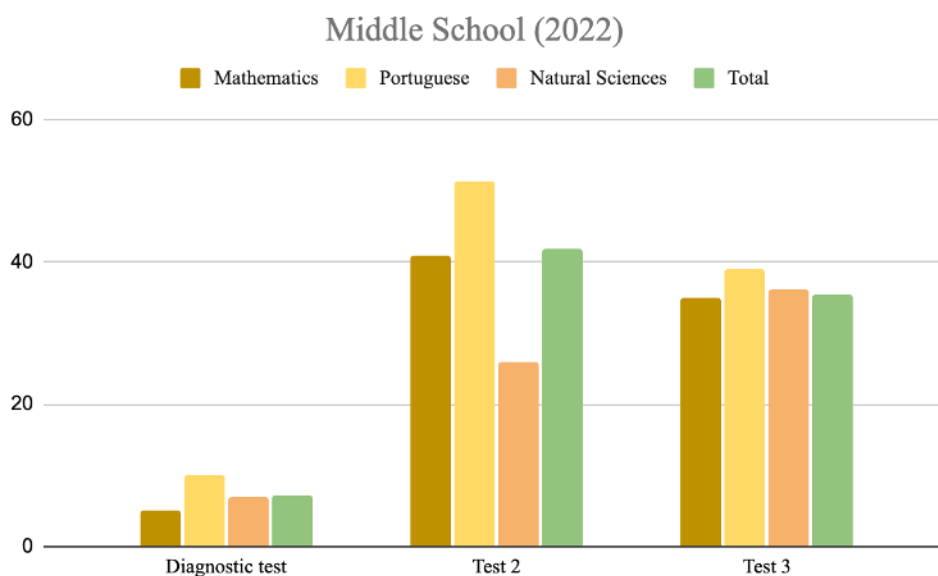


Image 4. Assessments scores, in percentage, for Mathematics, Portuguese, and Natural Sciences for 8th year students (middle school), in three different tests made throughout the academic year. *Source: Department of Education of Passo de Camaragibe.*



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The Reading Fluency Assessment shows that the majority of students from the second year of elementary schools in Passo de Camaragibe are considered “pre-readers” (represented by color yellow in the chart) or “beginning readers” (represented by light green color in the chart) with low reading fluency.



Image 5. Reading Fluency Assessment - Results by municipality - Comparison between editions. Yellow: pre-readers; Light green: beginning readers; Dark green: fluent reader. *Source: Department of Education of Passo de Camaragibe.*

Number of school, teachers, and students

The table below was made based on information provided by the Passo de Camaragibe Department of Education and refers only to **early childhood education**.

Table 1. Number of schools, teachers and students by area (urban, rural or coastal) in 2024.

Area	Schools	Teachers	Students
Urban	2	29	486
Rural	8	18	248
Coastal	2	12	182
Total	12	59	916



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Main activities

In this section, we present a summary of the central activities carried out under the Education + AI | The Nudelman Initiative up to April 2024. Each phase of the project has been carefully documented to reflect both the progress made and the challenges encountered.

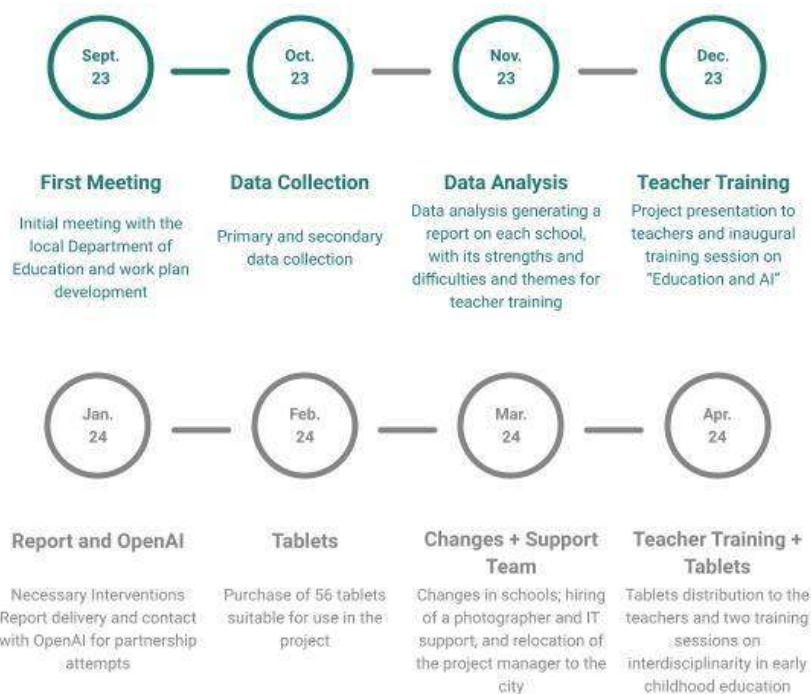


Image 6. Passo Project's main activities timeline from September 2023 to April 2024.

- **September 2023**

In September, an initial meeting with the local education secretary was conducted to present the project's scope and objectives. This was decisive in securing support and collaboration from local government bodies.

A comprehensive work plan and schedule were developed, detailing the phases of implementation and expected milestones.



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- **October and November 2023**

Throughout October and November, visits to all local schools were carried out. These visits included a thorough data collection phase (observations, questionnaires, and interviews), providing essential material for drafting a detailed report on each school and a general report on necessary interventions, highlighting the main challenges and strengths of each of them. It should be noted that early childhood education in the municipality is still greatly undervalued, and teachers are often seen as caregivers rather than professional educators. Also, the education secretary provided us with municipal, state, and federal education data on local schools. This crucial information offered a broader view of the educational landscape and was instrumental in developing tailored intervention strategies for the project.



Image 7. Visit to schools and data collection

- **December 2023**

In-service Teacher Training:

Held on December 14th and 15th, this training session on “Education and Artificial Intelligence” was targeted at early childhood educators in the municipality. The session was notably enhanced by the presence of André Nudelman, the founder of the project and president of the initiative. André delivered a significant opening speech, establishing the



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framework for this inaugural training session of the project. Participants expressed excitement about the potential learning, developments, and improvements the project could bring. Concerns were raised about meeting project expectations and the need for adequate support. There was a unanimous recognition of the potential benefits of technology in education. However, the main challenges mentioned were the lack of internet access and technological support in schools.



Image 8. In-service Teacher Training held on December 14th and 15th

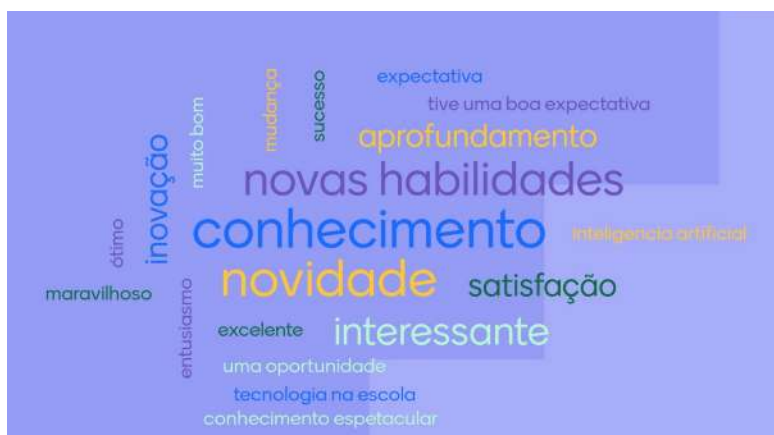


Image 9. Word Cloud made by the participants about “What words come to mind about today's training?” Responses: knowledge, new skills, novelty, satisfaction, interesting, artificial intelligence, good expectations, wonderful, excellent, excitement, deepening, innovation, changes, etc.



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Quão relevante e útil você acha que o treinamento pode ser para seu trabalho?

13 responses

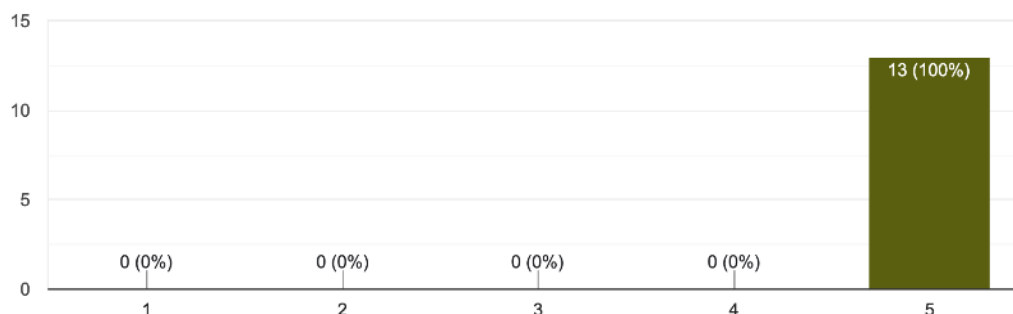


Image 10. Participants' responses for the question "How relevant and useful do you think this training can be for your work?" (consider 1: not relevant at all and 5: very relevant)

- January 2024

Intervention Report Delivery:

The comprehensive "Necessary Interventions Report" was officially submitted to the local education secretary. This document outlined specific recommendations for each school based on the data collected in the previous months. In this report, it was noted that the Passo Project would address some of the interventions. Other interventions were suggested to be provided by the municipality.

It was emphasized that the surveys were not intended to criticize the schools or their administrations and that the Project's focus was on analyzing data to understand the specific needs of each institution. Our team understands the municipality's challenges and is committed to contributing constructively.

At the end of this document, in the appendix, you will find a table summarizing the recommended interventions and the responsibilities associated with each.

Contact with OpenAI:

Since October, our team had been in contact with OpenAI, seeking to secure no-cost licenses for ChatGPT Plus to enhance the capabilities available to teachers through the Teacher Assistant feature, tailored from Nouvelle School's knowledge base. We were optimistic about establishing a partnership that would provide free access or some form of support for the



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teachers involved in the project. However, by January, it became apparent that we would likely need to proceed with the free version of ChatGPT. This development, although disappointing, has led us to explore other avenues and tools that can support our educators without the enhanced features of ChatGPT Plus.

- **March 2024**

Follow-Up and Evaluation:

A follow-up visit was conducted by the secretary, who escorted our team through each school to review the changes implemented and those still in progress, as recommended in the January intervention report. Notable improvements included renovations at several schools, new equipment purchases, and a building change for one of the schools. Each change was reviewed, showcasing tangible enhancements in the school environments. The education department team was keen to emphasize that the report was very useful to them.

Following this evaluation, a photographer/filmmaker was hired by the Passo Project to document the ongoing progress and the impacts of the project. This documentation will serve to visually capture the transformative changes in the educational environments and provide a dynamic record of the initiative's successes and areas for improvement.

Additionally, in a significant move to strengthen the project's management and oversight, the Project Manager relocated from São Paulo to Passo de Camaragibe. This relocation will allow for more direct and effective management of the project's daily activities and closer collaboration with local stakeholders.



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Image 11. Photos of Pr6-Infância School in October 2023 on the left and in March 2024 on the right.

- April 2024

Technology Integration and Training:

Android tablets were distributed to early childhood education teachers across the municipality (59 tablets, in total) to facilitate the integration of AI tools into their teaching practices. Along with the tablets, manuals titled "ChatGPT Command Guide for Early Childhood Education Teachers" were provided. This guide was developed to assist educators in integrating artificial intelligence technology into their pedagogical practices. Additionally, individual technical support was offered to the teachers to help with handling the tablets and using the AI tool effectively.

Additionally, the project website educall.org was updated to better reflect its intentions and present the actions carried out.



Image 12. Distribution of tablets and technical support



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Two additional in-service teacher trainings were conducted, with enthusiastic participation from the entire school community:

On April 6th, training at the Pró-Infância School focused on “Curriculum Projects and Concept of Teaching and Childhood in Early Childhood Education.”

On April 12th, training on “Interdisciplinarity in Early Childhood Education” was held for teachers from all local schools.

The community’s involvement was truly remarkable. They engaged wholeheartedly to make the trainings happen, actively contributing to the sessions. This collective effort was instrumental in the success of the trainings and the engagement of all participants. Both sessions received highly positive feedback, indicating a growing acceptance and enthusiasm for the project’s initiatives.



Image 13. In-service Teacher Training held on April 6th



Image 14. In-service Teacher Training held on April 12th



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Em uma escala de 1 a 5, o quanto a formação foi relevante para a sua prática profissional?
(considere 1: nada relevante e 5: muito relevante)

48 respostas

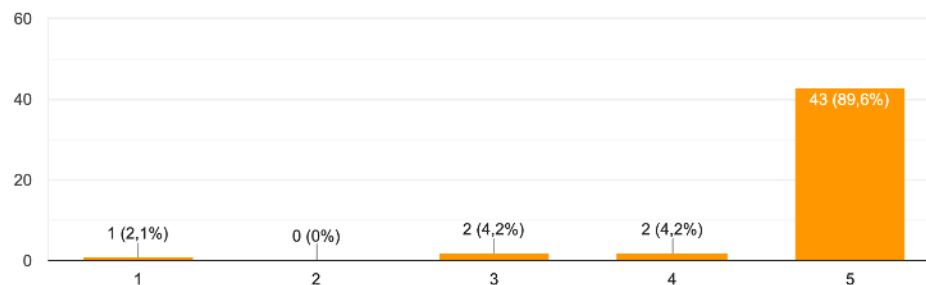


Image 15. Participants' responses for the question “On a scale of 1 to 5, how relevant was the training to your professional practice? (consider 1: not relevant at all and 5: very relevant)”

Você se sente mais preparado(a) para enfrentar desafios em sala de aula após esta formação?

48 respostas

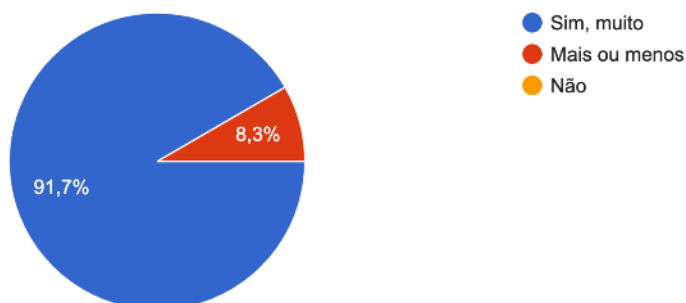


Image 16. Participants' responses for the question “Do you feel more prepared to face challenges in the classroom after this training?” (Blue: Yes; Red: More or less; Orange: No)



Monitoring and Evaluation

To ensure that the Education + AI | The Nudelman Initiative achieves its objectives and adapts to the evolving needs of the educational landscape in Passo de Camaragibe, a comprehensive and structured monitoring and evaluation framework is needed. This framework is designed to assess the impact of interventions, gather insights from various stakeholders, and make necessary adjustments to the program. Recognizing the complexity of this task, we anticipate seeking the guidance and expertise of our Advisory Board to refine our monitoring and evaluation strategies. Their input will be invaluable in ensuring that our approaches are effective and responsive to the needs of the community. Here's an outline of the key components of this framework:

1. **Formal Assessments:** Utilize municipal, state, and federal student assessments to measure the educational outcomes and possible impacts of the project over the long term. These formal evaluations will serve as a quantitative basis for assessing improvements in literacy levels and other educational metrics. It is important to recognize that the impacts of current interventions might only become evident after four years or more. Additionally, these outcomes can be influenced by a range of external factors beyond the project's control, making it essential to consider these variables when interpreting the data from these assessments.
2. **Annual Interviews:** Conduct annual interviews with teachers and school managers to gather qualitative data on the project's implementation and its effects on teaching practices. The first round of these interviews was completed in October and November 2023, establishing a baseline for future comparisons.
3. **Classroom Observations:** Regular classroom observations throughout the year will be used to directly assess the integration of new teaching methods and technologies. These observations will help identify areas where teachers may need additional support and training.
4. **Video Recordings:** Implement video recordings of classroom sessions to visually document teaching interactions and student engagement. These recordings can serve as a valuable tool for feedback and professional development for educators.



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5. Annual Surveys: Deploy annual surveys to all teaching staff and management to collect comprehensive feedback on the program's reach and effectiveness. These surveys will help in understanding the broader impact of the initiative on the school culture and educational environment.
6. Parent Feedback: Collect feedback from parents through surveys or focus groups to incorporate their perspectives on how the changes affect learning and school experience. This feedback is important for assessing the social and emotional impacts of educational interventions.

Observations and Future Directions

Throughout the initial phase of the Education + AI | The Nudelman Initiative, several key observations have emerged that will inform the project's trajectory going forward:

1. Community Engagement: The active participation of the entire school community has been pivotal to the success of the initial interventions and training sessions. Future efforts will continue to leverage this community engagement, focusing on deepening collaboration.
2. Technology Integration Challenges: Despite the enthusiasm for technological enhancements, challenges such as internet access and technological support in schools remain significant hurdles. Addressing these barriers will be crucial in maximizing the effectiveness of the AI tools and ensuring all educators can fully utilize the provided resources.
3. Additional Structural Challenges: During our activities, we encountered deeper structural issues such as inadequate sanitation, poor ventilation system and child malnutrition. These issues directly impact educational outcomes, and addressing them will require a holistic approach that goes beyond educational interventions alone.

These directions will guide the next phase of the Education + AI | The Nudelman Initiative, ensuring that the project sustains its momentum and expands its impact.



Conclusion

The Education + AI | The Nudelman Initiative has successfully completed its first phase from September 2023 to April 2024, marking the beginning of its efforts to enhance primary education in Passo de Camaragibe, Alagoas. This phase focused on integrating technology, providing teacher training, and fostering community involvement, which has started to yield visible improvements in the educational settings and received positive feedback from the community.

While the project has demonstrated potential, it has also uncovered challenges, such as the need for improved technological infrastructure and ongoing professional development for educators; and some more critical structural challenges, such as poor sanitation, poor ventilation system and child malnutrition, which significantly affect educational outcomes. These challenges remind us that the path to transforming education is a continuous, complex process intertwined with other social difficulties, requiring dedication and adaptation.

Moving forward, the initiative will continue to build upon the initial successes and address the areas needing improvement. By remaining responsive to the feedback from the community and committed to refining our strategies, the project aims to enhance its effectiveness and reach within Passo de Camaragibe and potentially to other regions. The guidance and expertise from our Advisory Board, including the strategic insights from the Lemann Center and collaborations with professionals from Stanford University and other respected entities, have been and will continue to be vital in navigating these complexities.

The journey ahead will leverage the insights gained during this initial phase to better serve the community and contribute constructively to the educational advancements of the region. There is optimism about the potential for meaningful and sustainable impact as the project progresses.



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References

Instituto Brasileiro de Geografia e Estatística (IBGE). 2022. Cidades e Estados do Brasil.
Available on: <https://cidades.ibge.gov.br/brasil/al/passo-de-camaragibe/panorama>



Appendix

Table 2. Interventions suggested for each school

Intervention	Quantity	Priorities	Responsibility suggestion	Notes
Tablets	56 teachers	All schools. One tablet for each teacher.	Passo Project	Carried out in full on April 2024 by Passo Project
Teacher Training a. Technology b. Inclusive education c. Reflections on Paulo Freire d. BNCC e. Early childhood education f. Reader teacher	56 teachers	All schools	Passo Project	It is being done by the Passo Project
Fans or Air Conditioning	38 units	All schools Urgent: schools 4, 9, 12	Municipality	It is being done by the Municipality
Teaching materials: teaching games, abacus, globe, maps, geometric set, etc	According to the number of children in each school	All schools Priority: schools 3, 8, 10, 11, 12	Passo Project	Price research process
Toys: make-believe toys and sets, outdoor toys, puzzles, materials for sensory activities and motor skills, building blocks, etc	According to the number of children in each school	All schools Priority: schools 5, 8, 10, 11	Passo Project	Price research process
Materials in general: painting kit, colored papers, glue, string, etc.	According to the number of children in each school	Schools 1, 3, 4, 5, 6 Priority: school 4	Passo Project	Price research process
Lockable cabinets	According to the number of children in each school	All schools Priority: schools 1, 2, 5, 7	Passo Project	Price research process
Improve outdoor area	8 schools	Schools 1, 2, 3, 6, 9, 10, 11, 12	Municipality	It is being done by the Municipality



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Intervention	Quantity	Priorities	Responsibility suggestion	Notes
		Priorities: schools 1, 6, 9, 10, 12		
Bathroom adaptation and improvement	9 schools	Schools 3, 4, 5, 6, 7, 8, 9, 11, 12 Priorities: schools 4, 7, 12	Municipality	No actions yet
Small repairs	According to each school	All schools Priority: schools 1, 4, 9, 12	Municipality	It is being done by the Municipality
Furniture	According to each school	Schools 2, 3, 7, 9, 12 Priorities: schools 7 and 12	Passo Project	Price research process
Internet	According to each school	Schools 2, 9, 12 Priorities: schools 9 and 12	Municipality	It is being done by the Municipality
Resting area for children	According to each school	Schools 3, 7, 9, 10, 12 Priorities: schools 7 and 12	Municipality	No actions yet
Reading area for children	According to each school	Schools 1, 2, 12 No priority	Municipality + Passo Project	Price research process
Improve aesthetics	According to each school	All schools Priority: 1, 4, 5, 12	Municipality	It is being done by the Municipality
Playground toys	According to each school	All schools Priority: schools 5, 9, 10	Municipality + Passo Project	It is being done by the Municipality
Printer	2 units	Schools 4 and 7 Priority: school 4	Passo Project	Price research process
Books	According to each school	Schools 4 and 10 No priority	Municipality + Passo Project	No actions yet



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Intervention	Quantity	Priorities	Responsibility suggestion	Notes
Showers and changing table	8 units (two for each school)	Schools 5, 6, 7, 8 Priority: school 7	Municipality	No actions yet
Adequate space for meals	11 schools	All schools, except school 2. No priority.	Municipality	No actions yet
Materials for autistic children	According to the number of children within the autism spectrum (around 45 in total)	All schools Priority: school 2	Municipality + Passo Project	Price research process
Classroom lighting	Six classrooms	Schools 5 and 12 Urgent: school 12	Municipality	It is being done by the Municipality
Change building	One school	School 12 Check the possibility of renting the building next door	Municipality	Carried out in full on April 2024 by the Municipality
Psychological support for teachers	56 teachers	All schools Priority: school 5	Municipality	No actions yet
Increase traffic safety	One school	School 6 The school is close to the highway and to a dangerous curve. It is needed to install traffic signs and/or speed bumps near the school.	Municipality	No actions yet

Schools: 1. Dom Bosco Preschool (urban); 2. Pró-Infância Preschool (urban); 3. Castro Alves School (rural); 4. Conselheiro Cícero School (rural); 5. Dep. José Bernardes School (coastal); 6. Ernesto G. Maranhão School (rural); 7. Francisca de Assis Lira School (rural); 8. João Durval School (coastal); 9. José S. Nogueira (rural); 10. Maria Letícia C. Maranhão (rural); 11. N.S. da Conceição (rural); 12. N.S. das Candeias School (rural).

Note: The number of teachers increased from 56 to 59 in 2024.