

Education and Digital Inclusion Access in Brazil

“Apprentices... Between Networks or Walls?”

1. Why Helping APUSA

In Brazil Education continues to be a challenge and COVID has exposed this struggle to even more critical reality. According to IBGE, in 2019 40% of Brazilians above 25 years would not have completed secondary school, and only 1/3 of the kids below 3 years old has access to kindergarten. During the pandemic, 72% of the students stop frequenting schools, and almost 9 million students had zero education activity for more than 3 months.

The biggest challenge the education system is facing is lack of resources and capabilities to provide remote education and digital inclusion. Minimal infrastructure, limited internet access and scarcity of portable devices are key areas of immediate support required to maintain suboptimal education in remote areas.

APUSA is an organization that is trying to tackle this challenge in the front line of its reality and has the ability to impact significantly the trajectory of thousand of kids.

Justification

“COVID-19 caused social distance in Santo Antônio da Patrulha, State of Rio Grande do Sul / RS / BR, where we speak and live.

Our municipality is one of the first four in the state of RS, therefore, an old municipality, with economic activity in agriculture and small companies. It has 42,000 inhabitants, the majority of whom are residing in the town central area. The municipality maintains a public education network with provision of Kindergarten Education and Elementary Education and is a partner of the federal government in maintaining a University Hub at the “Open University of Brazil”, which operates in teachers training, undergraduate development, specialization and continuing education level standards.”

The Polo Universitário Santo Antônio has parallelly its own **non-profit organization**, the Santo Antônio University Polo Association - **APUSA**, which promotes the Polo's projects in training of public school teachers, through projects, donations and sponsorships.

In 2018, APUSA received from the Public Ministry a resource of R\$ 10,000.00 (\$3.000 USD) for the acquisition of 10 chromebooks for use by students, in a rotating format. With COVID-19, this system has become completely inefficient, with the number of students being 400 times more.

APUSA conducts training for teachers, focused on the use of digital tools that enable communication, collaboration and research, aiming at students' autonomy to continue learning, even when they are at home. In this process, many challenges are faced, most evident in this pandemic, due to the need for equity.

To minimize the problems, APUSA is counting on the teachers' effort to communicate with students, through digital resources, donations of internet quotas (data sharing between mobile phones), through donations from the community, sending printed material that are delivered on clotheslines (to maintain social distancing), in teachers' homes or voluntary deliveries, in short, efforts for students to continue learning.

“Our understanding is that, even without COVID-19, today's society and the advances in neuroscience are demanding from the school an innovative pedagogical practice, which uses technological resources to learn to research and produce with authorship. The traditional class no longer meets the demands of students and, according to neuroscientists, needs to be forgotten in order to give rise to a pedagogy that places the student at the center of the pedagogical process, building, collaborating and researching.”

For this new model, the teacher assumes the role of curator and mediator, making it necessary to select materials and articulate student interaction. In this methodology, the information available on the global communication network, internet, needs to be accessed and the computer becomes a necessary tool.

Analyzing the context of Santo Antônio da Patrulha, we noticed that schools at the headquarters have internet, via optical fiber, but computers, Proinfo 2006, do not run browsers with the necessary updates to open Classroom, a virtual

classroom, available to everyone municipal and state teachers. With COVID-19, it became essential to access the virtual classroom.

Given this reality, the project provides for the continuing education of teachers in digital technologies for education and the acquisition of equipment that can be used by students, in their homes, during COVID-19 and at school, after COVID-19, as well as a Kit food and school supplies for the most vulnerable students.

2. Project history

The “**Apprentices... Between Networks or Walls?**” Project it has been running for four years and new possibilities are added every year.

In 2016, APUSA partnered with the Google Educator Group of Santo Antônio da Patrulha to carry out the training of teachers in computer science and implement the institutional accounts donated by Google for the domain @ semed.pmsap.com.br and @ polosap.com.br .

In 2017, we enabled APUSA in the Criminal Execution Court and the project was awarded with funds for the acquisition of eight *chromebooks* that were used by students from some schools, where teachers underwent training to use the resources available in the Google account.

To illustrate, Ângelo Tedesco Municipal School, which carried out research and video production activities (Image 1).



Image 1: Students at Ângelo Tedesco Municipal School producing videos.

In 2018, we enabled APUSA and our project was expanded with the use of the MATIFIC Platform, which allows the creation of games with mathematical content for elementary school students. We acquired more Chromebooks (Image 2) and trained teachers to use institutional accounts, chromebooks and the MATIFIC Platform (Image 5).

To exemplify, students from 14 schools (Images 3 and 4) used chromebooks during the realization of the project that lasted until the end of 2018.

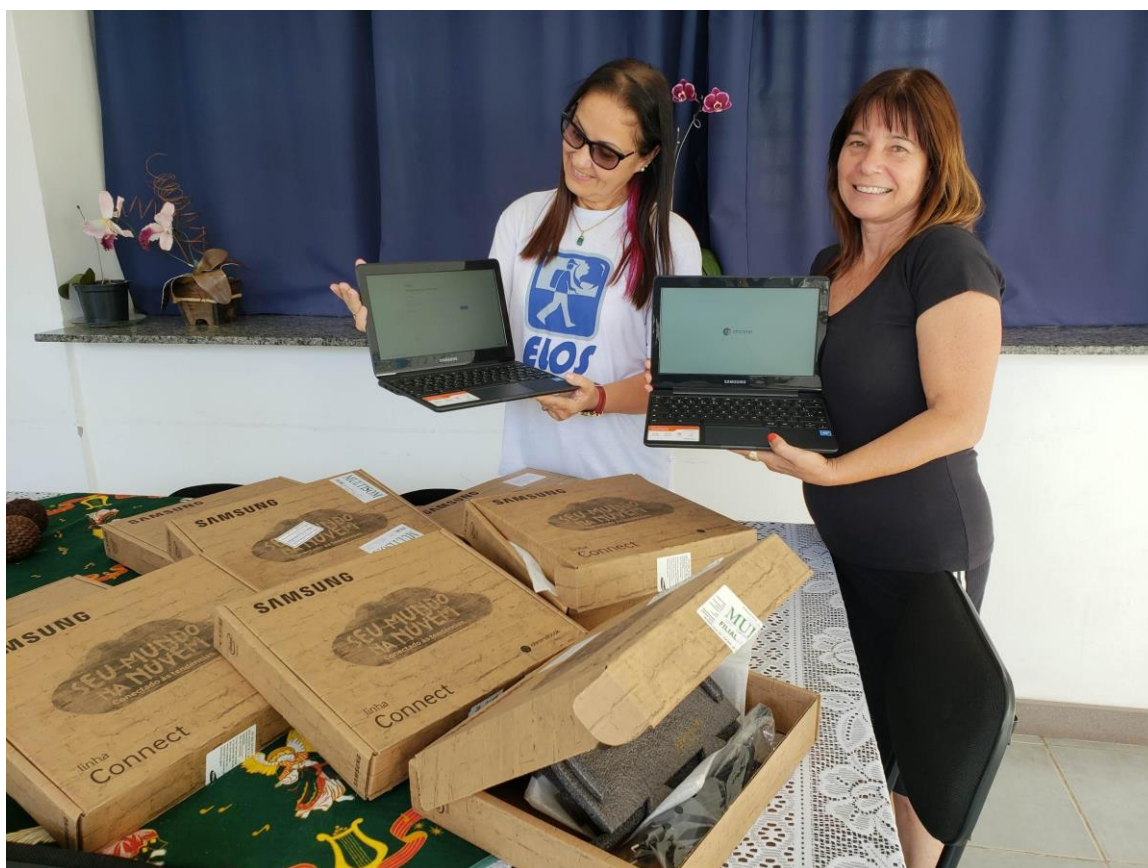


Image 2: Acquisition of chromebooks with resources from the Criminal Execution Court.



Image 3: Students using chromebooks - Secretary of Education visits the project.



Image 4: Mayor visits the project.



Image 5: Students using the MATIFIC Platform on Polo computers and Chromebooks

In 2019, we continued to train teachers in the Digital Technologies for Education course (Image 7), already started and with 50 participants.



Image 6: Google Maps workshop held on May 25, 2019.



Image 7: Group that participates in the continuing education in Digital Technologies for Education 2019.

This project continues to make it possible for teachers to bring a kit of Chromebooks to school and to carry out projects of learning with their students, use the MATIFIC Platform

The equipment acquired with resources from the Criminal Execution Court, in 2017 and 2018, are under the custody of the Santo Antônio University Pole and constitute the Kits, which, the teacher who did the training or who is doing training in digital technologies, can take it to your school.

The kit runs in schools during the school term.

Teacher training takes place at the Santo Antônio University Pole.

For 2020, with COVID-19, everything that has been done becomes insufficient and many students are left out of the process because they do not have any type of equipment that allows access to the virtual classroom.

What are institutional accounts?

These are Google accounts created from their own domain that make it possible to activate the apps in the Google for Education package. These accounts make it possible to create virtual classrooms that allow students to offer texts, videos, links to pages with specific subjects and activities to be carried out by various online editors. In these rooms, it is possible to associate applications such as Duolingo to study a foreign language, MATIFIC to learn mathematics, among many others.

Why Chromebooks?

Chromebooks are computers with operating system and updates managed by Google. The device runs online applications and editors, making it impossible to install any programs. In this way, we gain in battery time, agility to connect the equipment, resistance, **price** and, mainly, peace of mind regarding viruses.

What is MATIFIC?

Platform of mathematical games organized to meet the competencies of the Common Base National Curriculum, in Elementary Education. In this Platform, the role of the teacher is that of a curator. It is he who selects the games from the content he is working with the students, while the students are the actors and who access the platform to solve the games, however in a vision of the Games Platform. According to the score obtained, students can progress in the game and thus obtain new permissions. The pilot project provided free access in 2018 to 8 public schools: <https://www.matific.com/bra/pt-br/home/>. During COVID-19 the Platform remains free.

Why is investing in mathematics so important?

External evaluations have shown, every year, that the learning of Mathematics has been deficient, therefore, the need for new methodologies and technologies, which facilitate the educational process, involving teachers and students, always taking into account that teachers have a role mediation, building constant knowledge with students.

Below are the Santo Antônio da Patrulha indicators:

Indicadores Agregados

IDEB

Índice de Desenvolvimento da Educação Básica (IDEB). Indicador de qualidade educacional calculado a partir dos dados sobre aprovação escolar (Censo Escolar) e média de desempenho nas avaliações do Inep (Saeb e Prova Brasil). Varia de zero a dez, sendo que quanto maior, melhor a qualidade educacional. (Fonte: INEP - Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira/MEC)

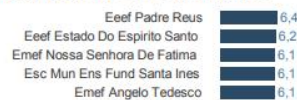
IDEB Ensino Fundamental - Anos Iniciais 2017



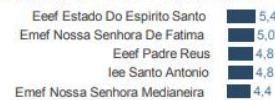
IDEB Ensino Fundamental - Anos Finais 2017



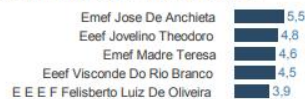
Escolas com Melhores IDEB - Anos Iniciais



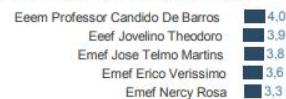
Escolas com Melhores IDEB - Anos Finais



Escolas com Piores IDEB - Anos Iniciais



Escolas com Piores IDEB - Anos Finais



Source:

https://www.mprs.mp.br/media/areas/mapa_social/arquivos/relatorios/sociais/SOC_114_114.pdf

Based on the above, the importance of the development of the project proposed by APUSA, with a view to improving patrolling education.

This project, at COVID-19, focuses on enabling access to content from all disciplines, including Portuguese and Mathematics, externally assessed areas that show the deficiency of the Brazilian school.

Based on what has already been built and the continuity of this work, we propose new actions for 2020.

3. Area served: Education

4. Target audience: Teachers and students from the municipal public school system.

5. Partners: Santo Antônio University Pole, Santo Antônio da Patrulha Municipal Education Secretariat and Santo Antônio da Patrulha Google Educators Group and Public Schools.

6. General objective:

The general objective of the project is to create conditions for the teacher to be able to communicate with students in a period of social distance and make the transformation from the traditional teaching process to a process inserted in the digital culture, through the continuous training of public school teachers. and the socialization of digital technologies that enable access to applications that contribute to the learning process with authorship, ethics and intellectual autonomy, skills that are so necessary for contemporary citizens.

7. Specific Objectives:

7.1 To enable continuing education in informatics in education for teachers in the municipal network, offering conditions for them to innovate their pedagogical practice, through applications and online editors, some offered free by Google and, in this period of social distance, enable the continuity of the educational process.

7.2 Acquire a kit of technological equipment;

7.3 Purchase a kit of food and school supplies for the most vulnerable students.

8. Implementation schedule for the project

2016- Acquisition of 4 chromebooks by APUSA - Associação Polo Universitário Santo Antônio, through donations and partnership with GEG - Grupo de Educadores Google to carry out training with voluntary work.

2017 - Acquisition of 8 chromebooks, through APUSA qualification and project approval by the Criminal Execution Court and partnership with GEG to carry out the training with voluntary work.

2018 - Acquisition of 10 chromebooks, through APUSA qualification and project approval by the Criminal Execution Court and partnership with GEG to carry out training with voluntary work and implementation of MATIFIC as a pilot project with free access to 14 public schools in Santo Antônio da Patrulha.

2019 - Pilot robotics and programming project, developed on Tuesday afternoons, inside the Physics laboratory, with students from the eighth and ninth year of Elementary School and first year of High School.

2020 - Teacher training, on online teaching days;

Acquisition of technological equipment kit for use by students, at home and at school;

Acquisition and donation of food kit and school supplies to the most vulnerable students.

8. Proposed Actions:

8.1 Ongoing training in computer science for education, aimed at public school teachers, through online pedagogical journeys, in 40 hours. The training prepares the teacher to work with information, communication, collaboration and geo-collaboration, using the applications of Google accounts, including Classroom, MATIFIC and others.

8.2 Conducting a seminar with all teachers who completed the course, to socialize the experiences lived in social distance;

8.3 Acquisition of a technological equipment kit for students to work at home or at school;

8.4 Acquisition of food kit and school supplies for students in vulnerability caused by the difficulties generated by COVID-19, such as unemployment.

9. Budgets:

The technological resources kit comprises the purchase of a smartphone with an approximate value of R \$ 650.00 to 800.00, according to the budget in Magazine Luiza, on May 3, 2020, accessed at <https://www.magazineluiza.com.br/smartphone-samsung-galaxy-j4-core-16gb-cobre-4g-quad-core-1gb-ram-tela-6-cam-8mp-selfie-5mp/p/155545800/te/sj4c/>

The Food and School Supplies Kit will be purchased in the Basic Food Basket accompanied by a notebook, pencil, eraser and pen.

Teacher training will be carried out by the Santo Antônio University Pole and the local Google Educators Group, on a voluntary basis.

Access to mobile data is donated by the local community.

Thus, for every R \$ 1,000.00 or approximately 200 US Dollars, a Kit will be purchased that includes a family, usually with two or three or more students who can take turns using the Smartphone.

10. Infrastructure to carry out the project:

The project will be carried out on the premises of the Santo Antônio University Pole, with APUSA being responsible for resource management, acquisition of materials and distribution in partnership with the Municipal Department of Education and the direction of the municipal schools.

11. Monitoring and evaluation of the proposed actions:

The proposed actions are planned, monitored and evaluated by the Associação Polo Universitário Santo Antônio and the partners.

12. Continuity of the Project:

The continuous training of teachers in information technology in education has been taking place since 2007 at the Santo Antônio University Pole. The project “Apprentices... Between Networks or Walls?” has been carried out since 2016, and its actions have been expanded every year.

Sharing Chromebooks has made it possible for schools with internet to bring the equipment to school.

The smartphones purchased will be used by students at home and after COVID-19, the devices are under the responsibility of municipal schools.

The University Pole has been contributing for the initial and continuous training of teachers in Santo Antônio da Patrulha for 12 years.

It should be noted that the continuing education projects are of their own initiative with voluntary work and partnerships through APUSA.

Dilce Eclai de Vargas Gil Vicente

Coordination University Polo Santo Antônio

Cláudio da Rocha Valin

President Management Council University Polo Santo Antônio / Academic of the Bachelor Course in Rural Development

Dalva Maria Provenzi de Carli

President Association Polo University of Santo Antônio / Academic of the Specialization Course in Media On education

12. Continuidade do Projeto:

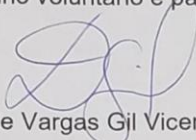
A formação continuada de professores em informática na educação acontece desde 2007 no Polo Universitário Santo Antônio. O projeto "Aprendizes... Entre Redes ou Paredes?" vem sendo realizado desde 2016, e suas ações têm sido ampliadas a cada ano.

O compartilhamento dos Chromebooks possibilitou que as escolas que possuem internet possam levar até a escola o equipamento.

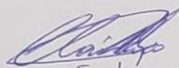
Os smartphones adquiridos serão utilizados pelos estudantes em casa e após COVID-19, os aparelhos ficam sob a responsabilidade das escolas municipais.

O Polo Universitário vem há 12 anos contribuindo na formação inicial e continuada dos professores de Santo Antônio da Patrulha.

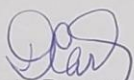
Ressalta-se que os projetos de formação continuada são de iniciativas próprias com trabalho voluntário e parcerias através da APUSA.



Dilce Eclai de Vargas Gil Vicente
Coordenação Polo Universitário Santo Antônio



Cláudio da Rocha Valin
Presidente Conselho Gestor Polo Universitário Santo Antônio/ Acadêmico do Curso de Bacharelado em Desenvolvimento Rural



Dalva Maria Provenzi de Carli
Presidente Associação Polo Universitário Santo Antônio/ Acadêmica do Curso de Especialização em Mídias na Educação