



CONNECTIVITY FOR STUDENTS OF THE XXI CENTURY AN OPPORTUNITY TO EXPAND ACTIVE AND HYBRID METHODOLOGIES

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abstract

The moment we live in has already made it clear that technology has changed our way of thinking, speaking, acting and working. The world is connected, whether by the internet of things, real-time information or constant updates of virtualized lives. The challenge for many government officials is to take from paper what has already been defined in BNCC in theory and make it happen in all public schools. Research (studies) in education reflect indications that technologies enable the transformations and reorganizations of new active and hybrid methodologies to develop our 21st century students. With this concern, the company WBT in partnership with Professor Edson Pedro Schiehl's research brings a technological structure that makes the connectivity between teachers and students safe and controlled.

Justification:

At the speed we need to pass on information in our daily lives, it would be impossible if we were not virtually globalized. However, it seems that the classroom has become a place apart, and his digital personality does not belong to him during that time at school.

For a long time, the use of smartphones in the classroom has been characterized as a device that hinders the progress of class and learning, but recent research show the growing number of students using mobile devices, in the most diverse environments, clearly in the intervals of the class (entrance and exit) and possibly inside the classroom in a hidden way. It is no longer the time to discuss the use of this technology within the classroom, but how the teacher can make sense of learning using this tool making our children and adolescents the protagonist in their learning.

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Therefore, allowing the teacher to control how much, when and how students will use the internet and its applications, builds a channel in which the student does not trivialize teaching and allows him to creatively and collectively build his learning.

Objective:

Present a structure and wi-fi network controlled by an agile and intuitive system, in which the teacher, with his smartphone, controls the access of students registered in each room. The system limits signal leakage to improper devices, collaborates with Marco Civil and streamlines classes with internet access for educational purposes.

Benefits:

Technological structuring is simple to do in any educational environment with quick installation. The system for registering and controlling access to the wi-fi network is innovative and easy to handle. The results with the practicality of streamlining the teachers' classes are incredible. The teacher who plans to use the internet or an online application can release access to the network at the time of his class and block that access with the same touch. Simple procedures, but that help the teacher to maximize his focus and objectives in teaching and learning.

Project / product scope

Network structuring with a controller system for teachers and students access.

Description of the methodology

The traditional teaching and learning process does not they serve the students of the 21st century more, much less the demands of this contemporary world (ANDRADE and DE SOUZA, 2016). This reality requires innovations, something that can break with the model that is passed on from generation to generation. Such a model, in which the teacher is the main agent and the students have a more passive posture in the classroom (MORAN, 2015), refers to the molds of the Middle Ages very different from the students already connected to the 21st century modernities (FARIA, 2013).

Innovating or simply changing is something that removes anyone from the comfort zone and these tribulations generate insecurity in many teachers and this is one of the factors

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that lead them to continue working in the same way as always (ABREU and NICOLACI-DACOSTA, 2006). Christensen, Horn and Staker (2013) observe that in order to minimize possible discomfort and assist in school innovations, technology is a great ally, as it makes it possible to adapt to the characteristics of the school and digital natives. However, it is a movement that needs to be thought, organized and planned so that technology improves the ways of teaching and learning (GÜSER AND CANER, 2013). In this approach, creative learning and hybrid teaching aims to support face-to-face and online learning (GÜSER AND CANER, 2013).

In the vast majority of innovative methodologies that are presented today, it develops activities that use, at least in parts, the online form. To guarantee the access structure and mainly to assign the responsibility for managing when and how much time is spent on activities using the internet on the students' smartphones and or tablets, it is up to the teacher, who plans and mediates all these processes.

OG Suite for Education “offers a set of communication and productivity tools that enables the 21st century students to“ develop the skills of: communication, collaboration, critical thinking and creativity ”. Some of these tools, which can assist the work of the teacher, are presented in Chart 1, but which require an appropriate online connection for teachers and students.

Table 1 - Some of the G Suite for Education Apps

Tool	Google Apps	Key Features
All	Characteristics Universal applications.	-Files are automatically saved and a complete revision history is created with a timestamp of all revisions of all files and all sharable ones. It allows multiple users to collaborate on a single document with a cloud-based processing environment, web commenting capability, so always access the latest version of the application.
Email	Gmail	-It is initially characterized by the communication between e-mails, however it is the main means of connecting and linking the applications to the user's profile.
Classroom - inside and outside the school	Classroom or Classroom.	- Classroom management system for teachers; -Manages multiple classes and levels; -Puts announcements messages (questions, notices and tasks) to one or more classes; -Manages tasks and file sharing (forms, documents, videos, links, etc.); -Classroom has a protected access code;
Calendar	Schedule	-Connected to a Google Account accessible through any web browser and enabled mobile device, organizing events and activities.
Cloud file storage	Drive	-Cloud-based storage system. Allows file sharing with another Google account or accounts outside the Google environment allows

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		files to be downloaded to a hard drive to be accessed offline.
Texts	Documents	-Has the ability to expand the available resources and functionality with an extensive list of add-ons to compose texts.
Spreadsheet	Spreadsheets	-Basic functionality of a spreadsheet has the ability to expand the features available with an extensive list of add-ons.
Slide show	Presentations on SlideShare	-Basic functionality of presentation software has the ability to expand the available features and functionality with an extensive list of add-ons.
Research form and data collection.	Forms	-Shipping of the form directly linked to a spreadsheet, to facilitate simple data capture and analysis of large volumes of data. Very useful tool in the formulation of diagnostic activities.
Drawing	graphics	-Basic tools of geometric and free designs.
Maps	My Maps	-Allows highlighting trajectories, location and measurements on maps. It also allows adding layers.
Website Creation	Google Sites	-Interface similar to other Google Apps allows the collaborative creation of a website can insert images, videos, as well as Google Documents, Spreadsheets and Presentations directly from their websites Google Drive can be private or public with teachers who control access for students of creation of simple tools and templates for quick start
Social media	Google+	It allows you to create groups to share documents and collaborate through online discussions in a social media environment.

Source: Professor Edson Pedro Schiehl's production adapted from WITT (2015)

There are many other apps that can support educational activities for free and online.

With a partnership work between WBT and prof. Edson Schiehl, the project was implemented as a pilot at the Mayor Carlos Zipperer Sobrinho (CZS) school in Santa Catarina. As a case of success, Chart 2 presents some details of the actions taken in the process for accessing the internet and the use of technologies.

Table 2 - Statement of actions at the CZS school

School	Internet access	Teacher development
CZS	<ul style="list-style-type: none"> - Requires the registration of the MAC of smartphones, tablets and notebook devices in the management system developed by WBT; - The registration of the teacher (a) and student devices, as well as the release of internet access are made in the management system; - The 18Mb signal is distributed by a routerbord installed in each room; - Internet access is initiated by the teacher, in a classroom, which indicates 	<ul style="list-style-type: none"> - Starts with the registration for Google for Education in 2016 by professor Edson with authorization from the direction; - The teacher in 2017 develops extra activities for students with the possibility of access at home to take advantage of this resource; - End of 2017 with the internet released, the first interactions between teachers and students in the classrooms begin;

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	<p>the time you want to leave the signal open to students. Such release can be done by the teacher's smartphone connected to the specific network created by the system or a computer connected to that network;</p> <p>- Equipment: routerboards, suits and network cable;</p>	<p>- Early 2018, the first Google Classroom training sessions are held, with teachers by the teacher who started the project;</p> <p>- Program agreed with management and teachers of one day every two weeks to extend the interval for mini courses or exchange of experiences in Google tools.</p>
CZS	<p>Positive point: The MAC of the student's device is registered in the virtual room he studies, this blocks any unauthorized external access.</p> <p>Point to be conquered: Community in need and needs to establish partnerships to maintain the contract.</p>	<p>Positive point: already perceives a movement of some teachers in the use of tools in the classroom and dialoguing their actions at intervals.</p> <p>Negative point: with the school, there is little time available for exchanges and little commitment from management, development tends to be slower to conquer the whole group.</p>

Source: Production professor Edson Pedro Schiehl

Therefore, we present an innovative product that can be adapted to the structures and conditions of any institution. This system of access control to the internet network ensures a balanced and controlled distribution by device, easy management of users and mainly management of the internet by the teacher for educational purposes.

Project organization

WBT INTERNET LTDA

Team:

- Benedito
- Rubens
- Daniel
- Edson Pedro Schiehl - Collaborating professor of the project and responsible for writing the text.

Financial costs

Under analysis of buildings and allocation of the system.

Execution cronogram

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Under analysis

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