Technology Adoption for Brazilian Socioemotional Initiatives at School

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Abstract: Socioemotional development in the classroom has gained spotlight in Brazil in recent years. It started to be recognized as a right of learning by brazilian pedagogical regulatory bodies that included socioemotional competences in the Common National Curricular Base. With the objective of mapping digital technological solutions to support socioemotional development in the classroom, solutions so important due to the social isolation scenario that the world faces, as a consequence of the pandemic. The present work presents a multivocal literature review, where the authors look for inputs from gray literature to collect initiatives from both the traditional literature as well as from organizations public information. This work depicted 13 initiatives and 9 digital solutions. The results show opportunities of technology adoption to improve socioemotional development, and highlight types of digital technologies that are being used in social pedagogical initiatives in Brazil.

1 INTRODUCTION

In 1995, the writer, psychologist and science journalist, Daniel Goleman, in his book Emotional Intelligence, suggested to teachers: "to consider the possibility of teaching the emotional alphabet in the classroom". Emphasizing also, that from actions like this, Brazilian education would benefit from the introduction, in the school curriculum, of a learning program that, in addition to traditional disciplines, includes teachings for a fundamental personal aptitude-emotional literacy.

Goleman (1995), talks about social malaise indexes associated with lack of socio-emotional education in the classroom. According to data from the Institute of Applied Economic Research - IPEA, a federal public foundation linked to the Ministry of Economy of Brazil, from 2010 to 2017, the number of cases of homicides, suicides and other indicators of social malaise grew substantially. With suicides, for example, an increase of 32% in the same period, throughout the country (IPEA, 2021)

These data express the behavior of how individuals have interacted with the world. And more than that, they explain how the socioemotional initiatives developed so far are still unable to react to this growth, to the point of minimizing this curve.

In 2017, the Brazilian Ministry of Education included the development of socioemotional competencies in the base that administers pedagogical practices across the nation, called: National Common Curricular Base - BNCC (BRASIL, 2018). Then instituting that, by 2020, all schools in the country were aligned with this evolution.

Reacting to this phase of change, important institutions for the country contributed with educational support initiatives, teacher training, didactic material and projects, applied to socioemotional development in the classroom, to align the education network with the BNCC guidelines.

In addition to the end of the deadline for implementing the BNCC rules, 2020 was marked by a year of distance learning for most of the population,

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as a result of the pandemic. The adoption of computer technologies gains more prominence and relevance, as a facilitator in distance learning. However, the "socioemotional" theme is still very recent. More than in other scenarios, there is a relationship with the worsening of relationships and social malaise.

So, we ask ourselves, how has the adoption of technologies been a facilitator in the classroom, for socioemotional development practices?

The present work explored the current scenario of initiatives that support socioemotional development in the classroom in Brazil. Our goals include (but are not restricted to): surveying projects and opportunities, as well as connecting people and encouraging the adoption of digital technologies that serve as tools to support education.

The research also captured data from analogue initiatives, as it assumed that there was still little representation of digital technological solutions as a way to support socioemotional learning in the country.

Confirming this hypothesis, the results showed that, in the current scenario of Brazilian education, there is still a lot to be explored for the promotion of digital technological solutions, as well as non digital ones, that enable the development of socioemotional skills and can be applied as a pedagogical object.

2 METHODOLOGY

This research had an exploratory process composed of four stages, segmented so that the researcher could deepen his results and hypotheses, in a more analytical way throughout the process.

Performing a multivocal literature review, the authors conducted searches for inputs from the gray literature available in public channels. "A Multivocal Literature Review (MLR) is a form of a Systematic Literature Review (SLR) which includes the grey literature (e.g., blog posts, videos and white papers) in addition to the published (formal) literature (e.g., journal and conference papers). MLRs are useful for both researchers and practitioners since they provide summaries both the state-of-the art and practice in a given area" (Garousia, V et. al, 2018).

Below is a descriptive summary of each step in the research process. These steps will be discussed in sections in this same article, presenting the results to the reader. The four steps that make up the development of the research are:

1. Initially, institutions that have one or more initiatives to support the inclusion of socioemotional methodologies in the curriculum of Brazilian schools were mapped;

2. After mapping the institutions, each initiative belonging to these institutions, that aimed at supporting socioemotional development in the classroom, was mapped. For a better understanding, both materials made publicly available by the institution itself, as well as inputs made available through research published by third parties (teachers, school managers, pedagogical coordinators, among others) about these projects were explored;

3. With the information on the characteristics of each mapped initiative, we sought to segment which of these initiatives have the adoption of digital or non digital solutions as facilitating instruments.

4. After processing the prepared database, quantitative and qualitative data were analyzed regarding how the adoption of technologies may be impacting the current Brazilian school scenario, from the perspective of socioemotional development in the classroom.

2.1 Mapped Institutions

As mentioned in the previous section, the research started with the mapping of institutions that have some type of socioemotional initiative composing their project framework. And, as a prerequisite, that the existing projects are aligned with the BNCC, encouraging the use of socioemotional educational practices in the classroom, in the Brazilian education network.

BNCC, as informed in the first section of this paper, is the regulatory base that governs the content and what will be developed in each school year of Basic, Elementary and Middle education in Brazilian schools (BRASIL, 2018). The term Socioemotional Education encompasses the promotion of socioemotional skills, both by direct instruction, and by the establishment of a favorable culture, from Pre-School to High School (Pfeilsticke, 2020).

As a result of this first stage, each institution, its objectives and values will be presented below. The institutions that meet the research prerequisites and were located are:

● Associação pela Saúde Emocional de Crianças (ASEC)
● Instituto Reúna
● Instituto Ayrton Senna
● Porvir
● Nova Escola
● Base Nacional Comum Curricular

ASEC is a non-profit organization and aims to make possible actions that promote the development of emotional and social skills in children and adults.

It has ongoing programs, teacher training and represents international initiatives in Brazil. It has many methods as an object of experimentation in published research (ASEC, 2021).

Instituto Reúna is a non-profit organization that develops projects aligned with the BNCC. It aims to bring together educators, organizations and education networks to work together towards the best pedagogical practices in basic education. Reúna produces intelligent materials, which facilitate communication between the BNCC formal document and the teacher. Suggesting pedagogical practices for different courses and school years, fostering research, training teachers and commenting on documentation to make it more enlightening (Instituto Reúna, 2021).

The Ayrton Senna Institute develops projects, educational solutions, research and knowledge in pedagogy, educational management, assessment and articulation, so that they can be replicated in the classroom, in the public education networks of Brazilian education. Founded in 1994, the Ayrton Senna Institute has already obtained recognition from respected institutions worldwide, such as UNESCO (the United Nations Educational, Scientific and Cultural Organization) and OECD (the Organization for Economic Cooperation and Development) (Instituto Ayrton Senna, 2021).

Porvir is the main content and mobilization platform on educational innovations in Brazil. Since 2012, it maps, produces and disseminates references to inspire and support transformations that guarantee equity and quality in education for all Brazilian students. In 2019, after seven years as an Inspirare Institute project, it became an autonomous and non-profit organization (Porvir, 2021).

Nova Escola is an Education organization and the most recognized brand by teachers and teachers of Basic Education in Brazil. It develops products, services and content for teachers that facilitate their daily lives and support their careers. Aiming to strengthen educators to transform public education in the country, enabling students to develop their potential to the fullest (Nova Escola, 2021).

2.2 Mapped Socioemotional Initiatives

After defining the institutions that make up the research, the process of deepening the search began. Selecting only those initiatives that contemplate, in their objective, socioemotional development in the classroom.

In all, 13 initiatives met the research prerequisites. These initiatives have several fronts of actions and activities: from teacher training and training to adapt to the new requirements of the BNCC, application of projects in the classroom, support to curriculum evaluation, sharing of ideas and innovations, and also by providing diary materials, that walk with the referential indication of the Ministry of Education, for each school year.

The title of each initiative and the institution responsible for implementing the project are listed below:

Table 1: Initiatives by institution.

INSTITUTION	INITIATIVES
Associação pela Saúde Emocional de Crianças (ASEC)	Amigos do Zippy
Instituto Reúna	Matrizes Curriculares
Instituto Reúna	Mapas de Foco da BNCC
Instituto Reúna	Parâmetros de Qualidade para Avaliação do Currículo do Ensino Médio
Instituto Reúna	BNCC Comentada para o Ensino Médio
Instituto Reúna	O PNLD e o uso de Materiais Didáticos no Brasil
Instituto Reúna	Percurso Formativo para Educação Infantil e Ensino Fundamental
Consed, Undime, CAEd/UFJF, Instituto Reúna, Fundação Lemann, Fundação Itaú Social, Fundação Roberto Marinho, Banco Interamericano de Desenvolvimento e Instituto Ayrton Senna	Apoio à aprendizagem
Instituto Ayrton Senna	Atividades socioemocionais
Instituto Ayrton Senna	Letramento em programação
Porvir / Colégio Visconde de Porto Seguro	Etiqueta virtual com Minecraft
Porvir / Colégio Estadual Henrique Cirqueira Amorim	Borboletas amarelas
Porvir / Colégio Salvatoriano Bom Conselho	Tenho monstros na barriga

We can see in the table that some institutions have more than one initiative, also that Porvir carries articles from other institutions. To learn about the dynamics of each initiative, objective summaries were made, shown below:

Amigos do Zippy **(Zippy´s Friends):** Zippy is a stick insect, an insect that becomes friends with children from the 1st and 2nd year of elementary school for 24 weeks. He is present in the stories that are told throughout the program and experiences difficult situations that are familiar to the child, with themes such as: friendship, communication, loneliness, threats, changes, losses, among others. Zippy's friends have so much focus on development in the classroom, as well as in teacher training, and has already benefited more than 300 thousand children (ASEC, 2004).

Borboletas Amarelas **(Yellow Butterflies):** The project was created with a focus on stimulating the cognitive and socioemotional of students, addressing topics such as: self-mutilation, adolescent depression, panic syndrome, bipolar disorder, OCD (obsessive-compulsive disorder), aggressive behavior, school indiscipline, among others (Miranda , I., 2019).

Tenho Monstros na Barriga **(I have Monsters in my Belly):** The project helps children to identify what they are feeling, developing self-knowledge, using as a pedagogical tool a book that tells the story of the boy Marcelo and the little monsters he has in his belly. In fact, little monsters was the way the author chose to call out feelings, working on self-knowledge (Souza, S., 2017).

Matrizes Curriculares **(Curriculum Matrices):** Provision of Curriculum Matrices for the Final Years of Elementary School and High School, according to the Common National Curriculum Base and the Sustainable Development Goals of the UN 2030 Agenda were developed by the Roberto Marinho Foundation in partnership with the Reúna Institute.

Mapas de Foco BNCC **(BNCC Focus Maps):** The Focus Maps present a selection of focal skills for each year of elementary school, according to the Common National Curricular Base.

Parâmetros de Qualidade para Avaliação do Currículo do Ensino Médio **(Quality Parameters for High School Curriculum Evaluation):** The Quality Parameters allow the critical reading of the curricula based on evaluation rubrics. Its purpose is to contribute to the construction of curricula in line with the principles and guidelines of these documents guiding the High School stage, thus ensuring its greater alignment with the assumptions of the New High School and with BNCC.

BNCC Comentada para o Ensino Médio **(BNCC Commented for High School):** The Commented BNCC for High School is a tool that translates, comments and explains the specific competencies and skills of each area of knowledge in this stage. Written by a team of experts, it aims to assist in the development of curricula aligned with the BNCC.

PNLD e o Uso de Materiais Didáticos no Brasil **(PNLD and the Use of Teaching Materials in Brazil):** On one of its fronts, Instituto Reúna seeks to understand how teaching materials are used in schools by teachers and how they can contribute to education for equity. Based on this, Reúna develops subsidies to support the production, choice and use of materials aligned with the BNCC and that impact student learning.

Percurso Formativo para a Educação Infantil e Ensino Fundamental **(Formative Path for Early Childhood Education and Elementary Education):** Tools, research and inputs for continuing education and consistent with the new curricula aligned with the BNCC. We seek high standards of pedagogical quality, in addition to considering experiences that contemplate the real challenges of the classroom and provide collaboration between teachers.

Apoio à Aprendizagem **(Learning Support):** Initiative created from the union of forces of several important institutions for Brazil. Virtual teaching teaching platform, where the user has at his disposal tools related to combating Covid-19, socioemotional strengthening and prioritization of the curriculum, activities to verify student performance and pedagogical guidelines, in addition to a guide for the development of assessment instruments (CAED).

Atividades Socioemocionais **(Socioemotional Activities):** Materials for socioemotional development in the classroom, with practical tips, for download (Instituto Ayrton Senna).

Letramento em Programação **(Programming Literacy):** Students are challenged to build artifacts with the help of programming languages working in teams to build games, applications and other media, sharing and celebrating their learnings at events with

the entire school community (Instituto Ayrton Senna, 2019).

Etiqueta Virtual com Minecraft: The project relied on the use of a world created in Minecraft, where students would learn labels for using the internet. Topics such as the correct way to behave, how and when to open the microphone in a video call, knowing how to speak and collaborating so that everything happens correctly were applied to situations within the game, where the student should learn how to deal with them (Tupy, 2020) .

2.3 Segmented Initiatives: Fronts of Action, Modality and Technologies Adopted

Finally, after all the exploratory process, an analysis of the adoption of technologies for socioemotional development in the classroom is carried out, classifying it into two major analysis groups: digital and non digital initiatives.

Table 2: Modality of technologies for each project.

INITIATIVE	MODALITY
Amigos do Zippy	Non digital
Matrizes Curriculares	Digital
Mapas de Foco da BNCC	Digital
Parâmetros de Qualidade para Avaliação do Currículo do Ensino Médio	Digital
BNCC Comentada para o Ensino Médio	Digital
O PNLD e o uso de Materiais Didáticos no Brasil	Digital
Percurso Formativo para Educação Infantil e Ensino Fundamental	Digital
Apoio à aprendizagem	Digital
Atividades socioemocionais	Digital
Letramento em programação	Non digital
Etiqueta virtual com Minecraft	Digital
Borboletas amarelas	Non digital
Tenho monstros na barriga	Non digital

As a result of all the cases where the modality of applied technologies was "Digital", there are three types of digital resources:
● Interactive sites
● Downloadable digital documents
● Games

2.4 Results Discussion

This study aimed to map projects and opportunities, connect people and encourage the adoption of computer technologies that serve as tools to support the practices of socioemotional development in education.

Recently, socioemotional education has become a Brazilian learning right, included in the BNCC. Its results provide us with some reflections such as:

Possibly, there will be an increasing movement in the adoption of digital technologies as solutions to support socioemotional development in education. We can base this interpretation on two pieces of information:
● Once we diagnose the absence of several digital technological tools that today are already used for cognitive development, such as projects that use virtual reality, augmented reality, LMS platforms, digital animations, internet of things, among others.
● The current global social scenario requires solutions that promote socioemotional well-being also in a technological way. Overcoming geographical constraints imposed on human relations today.

Of the 13 initiatives explored, 9 use digital technological resources and 4 use non digital technological resources. The concept of digital technology is directly associated with the transforming action of data, languages and commands in binary numbers, 0 and 1 (Ribeiro, A. E., 2018). Although the number of initiatives using digital resources is greater than the number of analog initiatives, there is no significant variety of types of digital solutions applied in the classroom for socioemotional development.

3 CONCLUSIONS

This research was carried out to map Brazilian initiatives, which promote solutions focused on the theme of socioemotional development in the classroom (in support of BNCC changes), whether or not they adopt digital technologies.

Serving, then, as a document of academic knowledge, that can be used as an instrument of research of opportunities for new computational solutions that collaborate with socioemotional development in education.

Its main results demonstrate that there are still several possibilities for technological innovations in the current scenario of socioemotional education in Brazil.

A very small number of initiatives are aimed at addressing the possible emotional impacts caused by the pandemic.

It is expected that the relevance of this theme will provoke teachers, school administrators, parents and educators to reflect on the positive impact that socioemotional interventions can have on individuals and help in their formation as citizens, protagonists of their own well-being.

Although the research provided sufficient inputs to validate the hypothesis and fulfill the objective, limitations of the research were experienced.

During the discovery of information about each initiative, some questions arose and due to the lack of collected inputs, could not be answered such as: in the teaching perspective, what are the current limitations in the classroom for the application of didactics of socioemotional development? What are the results that teachers who have experienced projects like Amigos do Zippy have had?

For future work, it is suggested the development of case studies contemplating interviews with teachers, so that it is possible to understand even more about the benefits and results of didactics of socioemotional development in the classroom.

Assigning digital versions to non digital projects might yield results in different socioeducational realities.

Furthermore, that the adoption of technological computational solutions is yet another facilitator for human development.

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