PROPOSAL OF A STRUCTURE ETHIC COMPUTATIONAL [1]

PROPOSAL FOR A COMPUTER ETHICS FRAMEWORK

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SUMMARY

The present work aims to analyze adaptive educational technology that acts as a tool to meet the demands of the specialized educational service room (AEE). As a basis for composing the studies and analysis, a case study of the educational platform Simplix is presented, which offers support and authorship and collaboration of digital content to work on alternative communication and interactive activities as well as pedagogical, psychopedagogical and neuropsychopedagogical interventions with people with disabilities. The platform developed by Brazilians has received numerous national and international awards with recognition as a disruptive technology and high-tech innovation that can positively impact up to a billion people. **Key words:**Adaptive educational technology. Specialized educational service. Simplix educational platform

ABSTRACT

This work aims to analyze adaptive educational technology that acts as a tool to meet the demands of the specialized educational assistance room (AEE). As a basis for composing the studies and analyses, a case study of the Simplix educational platform is presented, offering support and authorship and collaboration of digital content to work on alternative communication and interactive activities, as well as pedagogical, psychopedagogical and neuropsychopedagogical interventions with people with disabilities. The platform developed by Brazilians received numerous national and international awards with recognition as a disruptive technology and with high tech innovation that can positively impact up to one billion people. **Keywords:**Adaptive educational technology. Specialized educational assistance. Simplix educational platform

1. INTRODUCTION

1.1 About Communication and technologies in Inclusive Education

Human communication is a process that involves the exchange of information and uses symbolic systems (abstract, concrete, gestural and sound) as a basis for this purpose. We are surrounded by physical environments, but, above all, surrounded by the social and cultural environment, full of people with whom we relate and on whom we depend: we are social beings by nature, creators and results of our own society and culture.

Communication does not exist alone, as something separate from life and society: everything is communication and it is through communication that we share who we are and express what we feel. It is the channel through which our condition of life, our beliefs, values   and cultural characteristics were transmitted to us.

It is a basic need of the human person, of the social being and is intertwined with life itself, because every day, from birth to death and from waking up to sleeping, we carry out countless acts of communication: from a good morning kiss , including choosing the clothes and care and beauty products we are going to use, reading signs along the way, relaxed chatting over coffee or lunch, discussing reports at work, family conversation at dinner, at the same time time when we watch the soap opera on television, until good night at bedtime.

Human beings have come a long way between primitive communication and simple language, gestures, postures, screams and grunts, like other animals, and ideograms, until reaching the structure of language (verbal, non-verbal, written and gestural) and achieving clear and evolved ways of communication, opening, with typography, the era of social communication.

We all need to be understood and understand others and it was precisely through this need that we gained the main factor of evolutionary advantage: communication. Communication is a word derived from the Latin term "*communicate*", which means "to share, participate in something, make it common". Communication occurs when the sender translates their idea into a language or code that can be understood by the receiver. According to Harari (2015), the emergence of new ways of thinking and communicating, between 70 and 30 thousand years ago, constituted the cognitive revolution that enabled an unprecedented change in the way of thinking and communicating.

their existence, cooperate with each other. Communication is, therefore, an intrinsic characteristic of human evolution.

Human communication is the means by which people relate and maintain contact with others. It is what facilitates meaningful exchanges and cultural appropriation. Communication and interpersonal interaction are carried out comprehensively: we use oral language, accompanied or not by facial expressions, gestures, writing and other communicative elements that allow us to understand and be understood.

Language is acquired as the subject is inserted into society, that is, it is a product of this process of human development. Children acquire language as they interact with the environment and their peers. Through language itself, it constructs the notion of reality.

Therefore, it is clear that during interaction and sharing activities there is an exchange of significant cultural experiences and, for this to occur, there must be some type of communication. Based on the importance of language and communicative functioning for human development and formation, people who have an absence or deficit in communication need help to be able to carry out a form of communication and expression that also promotes the development of cognition.

Alternative communication proposes, then, to compensate for the difficulty of people with disabilities in communicating, temporarily or permanently, also transforming itself into enriching resources for Inclusive Education, ultimately providing their full development, a since, according to Vigotski (1997), the defect does not produce a less developed being, but rather presents a qualitatively differentiated development.

In this scenario, Alternative and Augmentative Communication (AAC) emphasizes diverse forms of communication, aiming at the following: promoting and supplementing speech, thus guaranteeing an alternative form of communication for the individual who has its absence, impairment or impairment.

Alternative communication, in this way, focuses on promoting communicative capacity, ensuring autonomy and providing opportunities for effective participation in different communication contexts: in family, social, school and professional environments.

Nowadays, thanks to technological advances, new media are within the reach of most people and insert them into teaching and learning processes, as tools

extremely rich and facilitating, it favors the expansion of knowledge and the improvement of the quality of teaching. One of the main objectives guiding the introduction of ICT in education is to provide quality content that promotes learning and encourages innovation in pedagogical practices.

In the educational environment, technology makes it possible to create countless ways to engage, stimulate and explore new strategies, according to the needs of today's world, expanding the learning experience, making communication and teaching more dynamic and interactive.

Also in educational management, there are several instances in which the use of ICT can add and play a relevant role, such as enabling planning, monitoring pedagogical actions, student learning and resource allocation.

ICT also plays a very important role in the continued training of teachers and professionals working in education, so that they are not just holders of content, but agents of transformation, since their roles are being permanently redefined and reconstructed, aiming to the full development of people.

It is already known that educational technologies expand cognitive powers and can help development, through communication and constant exchanges. In the globalized and competitive world in which we live, those who know where to look for information and knowledge, make critical observations and work collaboratively will have an advantage.

Technology aimed at education, however, needs to be a tool that is based on an interactionist and collaborative learning concept, in which both the student and the teacher are active subjects, making use of available resources to build learning spaces, because:

> [...] human learning presupposes a specific social nature and a process through which children penetrate the intellectual life of those around them, [...] an essential aspect of learning is the fact that it creates the zone of development proximal; that is, learning awakens several internal developmental processes, which are able to operate only when the child interacts with people in his environment and when in cooperation with his peers. Once internalized, these processes become part of the child's independent development acquisitions (VIGOTSKI, 1988, p. 115-118).

In Brazil, the importance of technology has already been described in the National Education Plan (2014-2024). Goal 5 states "to make all children literate, at most, by the end of the 3rd year of elementary school" and technology is therefore recognized as a valuable strategy:

> Strategy 5.3 – select, certify and disseminate educational technologies for children's literacy, ensuring the diversity of methods and pedagogical proposals, as well as monitoring results in the education systems in which they are applied [...] (BRASIL, 2015).

The National Common Curricular Base (BNCC), approved in 2017, also recognizes the importance of technology and includes it among the ten general competencies to be developed by all Brazilian students: Competency nº 5:

> Understand, use and create digital information and communication technologies in a critical, meaningful, reflective and ethical way in different social practices (including school ones) to communicate, access and disseminate information, produce knowledge, solve problems and exercise protagonism and authorship in life personal and collective (BRASIL, 2018).

We know that as digital technologies evolve, they begin to serve different objectives and actors, and the fact is that technology will be of no use if it does not serve pedagogical work and is not entirely focused on promoting learning and socio-digital inclusion. .

Inclusive Education and, especially, the promotion of accessibility through assistive technology are means capable of creating conditions for student autonomy, in addition to acting as mediating instruments for learning.

In this sense, it is necessary to value difference as a human condition and consider that diversity of development is a reality that needs to be addressed.

As we have already seen, educating for citizenship is a transversal goal of educational policies and needs to be incorporated into pedagogical projects through the appreciation of needs, in the creation of new spaces for socialization, new cultural manifestations, in the broader issue of accessibility and inclusion. of specific resources, which provide access to ICT as a learning instrument, in order to enable the cognitive and creative development of students.

Given all this, it is clear that the intertwining between the use of digital technologies and education is an extremely important discussion when we think about

learning and skills development, as technology starts to act as an instrument and alternative for the construction of knowledge.

1.2 Objectives

1.2.1 General Objective

Present a case study of a Brazilian company that develops adaptive educational technologies to be used in interventions with people with disabilities.

1.2.2 Specific Objectives

● Understand the importance of communication in the learning processes of people with disabilities;

● Analyze the various forms of application of adaptive technologies in their most diverse theories and approaches;

● Understand the use and adaptation of alternative communication methods and approaches as well as interactive activities with people with disabilities and;

● Understand the application and use of educational technologies adapted for pedagogical, psychopedagogical and neuropsychopedagogical interventions by education professionals with people with disabilities.

The technology is compatible with the demands and objectives foreseen in the teaching plan and the policy of Inclusive and Comprehensive Education throughout Brazil, acting as a support instrument for the construction and/or development of activities that will subsidize pedagogical, psychopedagogical, neuropsychopedagogical and diagnostic techniques, within the scope of Specialized Educational Assistance (AEE), contributing to the quantitative and qualitative improvement of these interventions, as well as to the improvement of teaching and learning processes, undertaken mainly in the fields of alternative and augmentative communication and initial literacy .

Another motivating factor in the process of creating and making available a disruptive technology that was capable of meeting the demands of people with disabilities not only, but also around the world. According to UNESCO:

More than a billion people around the world live with some form of disability, of which almost 93 million are children. In Brazil, there are 45.6 million people, representing almost 24% of the Brazilian population with some type of disability ("Inclusive education in Brazil, c2019, section people with disabilities).

The School Census/MEC/Inep is carried out annually in basic education schools, which allows the measurement and monitoring of Special Education indicators, such as: access and enrollment, entry into common classes, provision of specialized educational services, accessibility in schools, municipalities with enrollment of students with special educational needs, teacher training for service special educational needs and others. Data from 2019 reveal that the number of enrollments of students with disabilities, pervasive developmental disorders and high abilities or giftedness, in regular classrooms, grew at all stages of education (INEP, 2019).

According to the National Special Education Policy (PNEE): equitable, inclusive and with lifelong learning, originating from the Secretariat of Specialized Education Modalities, since 2008, the number of enrollments in inclusive special education has shown exponential growth: in just 12 years, there has been a growth of around 256% in the number of enrollment in the regular education network (BRASIL, 2020).

Graph 1 – School Census Microdata – INEP/MEC (2008-2019)

*Em **Milhares** de matrículas.
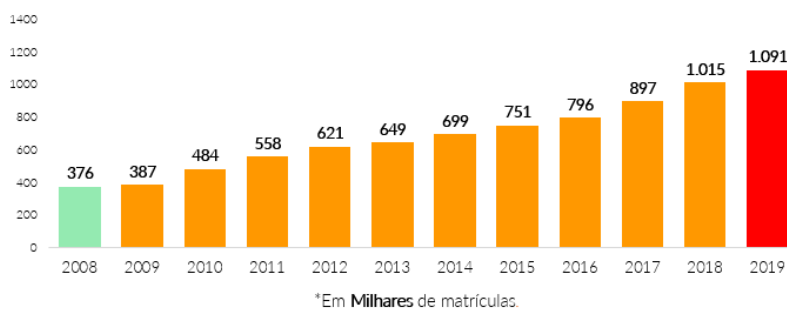
Source: Inep (2019)

With a real increase of around 79.8% in the period from 2008 to 2019, there was, in this period of time, an increase from 696 thousand enrollments to more than 1.25 million in 2019. According to the document, in 2008, 320 thousand enrollments referred to exclusive classes and 376 thousand referred to common schools (conventional or regular). According to the 2019 School Census, 87.2% of students in the target audience for inclusive special education were enrolled in common classes and 12.8% were in specialized schools.

Figure 1 – Special Education in Brazil. Enrollment in common and exclusive classes – MEC/2019 Census
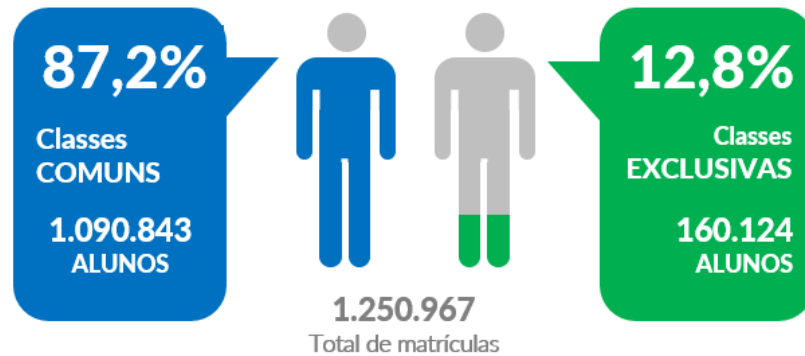
Source: Brazil (2020)

It is important to emphasize that, diametrically opposite, the census found a 50% drop in the number of enrollments of people with disabilities of school age in special education, and who were duly enrolled in the regular education network. According to this report, in 2008, as already mentioned, 320 thousand enrollments in special classes were recorded; however, in 2019, the number was only 160 thousand.

Based on the scenario presented, the adaptive technology object of this analysis was created to meet existing demands.

1.3 Methodological procedures

For the analysis, the qualitative research methodology (Case Study) was used associated with observation techniques and applied with a bibliographic theoretical foundation. As Minayo argues:

> Qualitative research answers very particular questions. It is concerned, in the social sciences, with a level of reality that cannot be quantified. In other words, it works with the universe of meanings, motives, aspirations, beliefs, values and attitudes, which corresponds to a deeper space of relationships, processes and phenomena that cannot be reduced to the operationalization of variables. (MINAYO, 2001, p. 22).

In the same direction and sense, Musse in his comments on Durkheim's social fact states:

> The sociological study of education allows us to understand, in a general and summarized way, the ways in which social beings are constituted throughout history. But it also makes it possible to examine the cultural determination of consciousness, that is, the procedures that lead individuals to internalize ideas, values, beliefs and collective feelings.

The way is opened for the investigation of the modifications of collective representations (responsible for maintaining or reinforcing individual consciousness) due to the interference of other aspects of social life. (DURKHEIM, 2011, p. 14)

1.4 Theoretical Foundation

The construction of the legal framework regarding inclusive education in Brazil was constituted by struggles and achievements of the entire society that aims to achieve an inclusive culture that is intertwined throughout the social fabric. According to IBGE (2010), around 24% of the population declare themselves to have some type of disability. In this sense and direction, the education of people with disabilities in Brazil in the last decade has shown exponential growth in terms of increased enrollment in the regular education network. According to the 2019 School Census, 87.2 of the students in the special education target audience were regularly enrolled in regular classes.

Total enrollment in special education in regular education systems from 2008 to 2019, both in specialized and common classes.

Graph 2 – Enrollment of people with disabilities in Brazil.
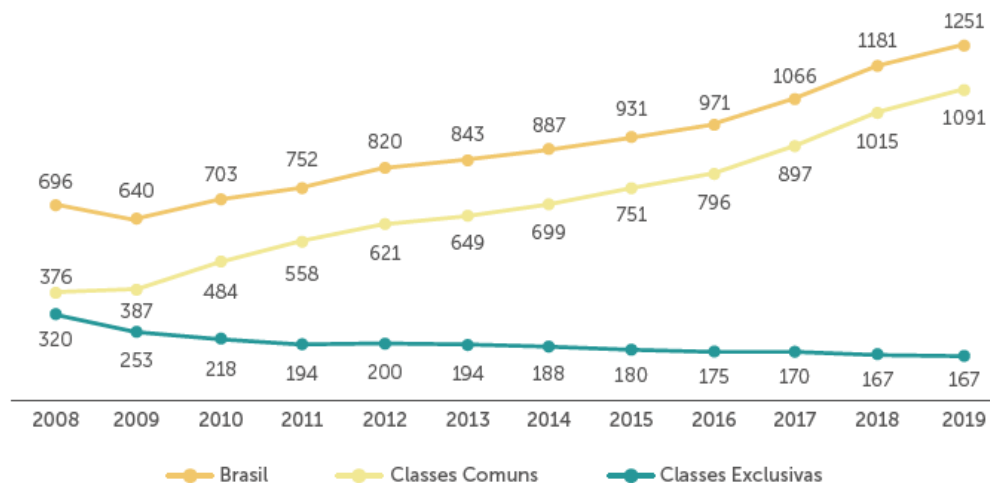
Source: Inep (2019)

Public policies regarding people who need specialized educational assistance are a reality in public schools, which absorb the largest portion of the population. Faced with this challenge of providing a market with technologies that meet the repressed demands of this sector, as well as in line with the

determinations to substantially offer products and services for the education sector that works incisively with the inclusion of people with disabilities.

In fact, there is also a contingent of education professionals with continued training in the fields of special education and this stratification has an important relevance in this scenario, because these professionals understand determining issues in the use of new technologies as a fundamental part of the education of people with disabilities. .

Graph 3 – Enrollment in AEE, in Brazil, from 2009 to 2019

Source: Brazil (2020, p. 23)
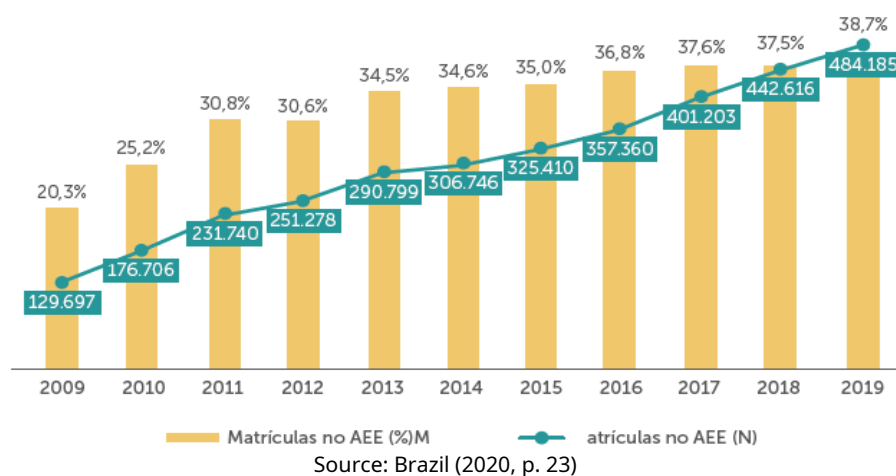
The increase in the number of enrollments of the target audience for special education reinforces the need for educational technologies designed to include this audience. Thus, in this study, it was possible to scientifically analyze a case study of a Brazilian company and understand how these educational technologies can be applied as tools to support greater efficiency and effectiveness in interventions for people with disabilities in line with public policies and the national scenario. Brazilian on inclusive education.

Evidently, the role of the teacher becomes fundamental for inclusion to happen. In this direction and sense that combining your practice (interventions) with the use and application of technology is based on a kind of Symbiosis.

> The most important thing is the teacher's credibility, his ability to establish bonds of empathy, affection, collaboration, encouragement, and to maintain a balance between flexibility and organization. [...] The main part, what the teacher is relevant to, which is helping the student to develop cognitive, socio-emotional skills, vision of the future, technology will not do that. The fundamental role of the teacher is that of mentor, of guiding (BRANDÃO, 2000).

In addition to the importance of the inclusive profile of professionals who work directly with this public in schools, it is necessary to reflect on educational technologies

adaptations for people with disabilities, which, as a rule, provides information on the current situation of a very important topic that is even supported by a list of legislation that deals with this subject:

- ● LBI (Brazilian Inclusion Law) in articles 27 and 28
- ● Federal Constitution, in articles 205, 206 and 227;
- ● Child and Adolescent Statute (Law no. 9089/1990);
- ● National Education Guidelines and Bases Law (Law no. 9394/1996) and;
- ● National Education Plan (Law No. 10,179/2001),
- ● National Special Education Policy (Decree 10,502 of September 30, 2020.

> [...] human learning presupposes a specific social nature and a process through which children penetrate the intellectual life of those around them; [...] an essential aspect of learning is the fact that it creates the zone of proximal development; that is, learning awakens several internal developmental processes, which are able to operate only when the child interacts with people in his environment and when in cooperation with his peers. Once internalized, these processes become part of the child's independent development acquisitions (VIGOTSKI, 1998, p. 118).

School Inclusion is generally based on three main pillars: the first is the number of people with disabilities and their needs, the second is public policies and investments for the sector and the third is the set of educational technologies available to meet demands. .

2 CASE STUDY: SIMPLIX EDUCATIONAL PLATFORM

Since 2017, the Actcon Group has made available in the Brazilian market and in countries such as the United States, Chile and the United Arab Emirates a disruptive educational platform with embedded technologies such as *Business Intelligence*.

Much of the specialized educational services for people with disabilities are fundamentally provided through pedagogical, psychopedagogical and neuropsychopedagogical interventions.

The important themes, in the context of Inclusive Education, are explained in its practices through interventions, using the multimedia communication boards of the Simplix Educational Platform, always centralizing the focus on the possibilities of the person served and not on the disability or limits that they have. it presents.

This fundamentally aligns with the assumptions of socio-interactionist theory (VIGOTSKI, 1991); with multiple intelligences (GARDNER, 1995); with the taxonomy of educational objectives (BLOOM, KRATHWOHL; MASIA, 1956); with considerations of current school inclusion (MANTOAN, 2006); with new ways of teaching and learning in digital contexts and the theories of connectivism (SIEMENS, 2005) and; on neuroplasticity (FEUERSTEIN, KLEIN; TANNENBAUM, 1994) which, in a dialectical view, examine not only the possible limitations of the person, but in a broad analysis, their countless possibilities.

By highlighting the importance of the resources offered in Alternative or Augmented Communication (AAC) and in the teaching and learning processes, it is assumed to dialogue with these theories and their thinkers.

The contributions of these theoretical references are more than current and bring light to the understanding of practices related to Inclusive Education and the search for an innovative intervention. The assumptions presented have rich implications for pedagogical, psychopedagogical and neuropsychopedagogical practices and were crucial to support the development of the concepts of board models, which use signs and images, to substantiate AAC or the teaching and learning processes and of socialization in educational environments as well as an integral part of socio-digital inclusion.

## 3 DIGITAL LEARNING ENVIRONMENTS

The construction of communication and learning environments, mediated by technology, opens up a universe of pedagogical possibilities that can help students develop skills and competencies compatible with new social demands, building a peculiar learning path at their own pace and from of your needs. Digital technologies expand and stimulate human cognition. The learning process is no longer just about receiving and transmitting knowledge as it used to be, but about creating, building and sharing new knowledge.

The learning process, mediated by the use of multimedia communication boards and interactive interventions, has as its fundamental premise the human relationship and, as a consequence, the genesis of learning (PIAGET, 1978). Knowledge is produced thanks to an individual's interaction with their environment, in accordance with structures that are part of it, allowing the student to be the protagonist of their learning process.

The use of technology goes beyond architectural barriers and transcends time and space, reflecting on the way we communicate and the construction of knowledge, not restricting itself to educational spaces, but entering into social relationships and people's lives. Therefore, when thinking about learning processes mediated by the teacher and intertwined with technologies and cognition, it is important to consider the Vygotskian perspective, which presupposes digital technologies as auxiliary instruments, stimulators in pedagogical practice, with a strong impact on some psychological aspects and with mediating capacity in promoting inter and intramental processes, promoting cognitive development.

One of the biggest challenges in inclusive education is adapting objects of knowledge while proposing teaching strategies to facilitate and expand learning. At this point, the Simplix Educational Platform presents itself as an enriching tool through which all possibilities for interventions that target the efficiency and effectiveness of teaching and learning processes in AEE are expanded.

Figure 2 – Screen: Main screen of the Simplix Educational Platform
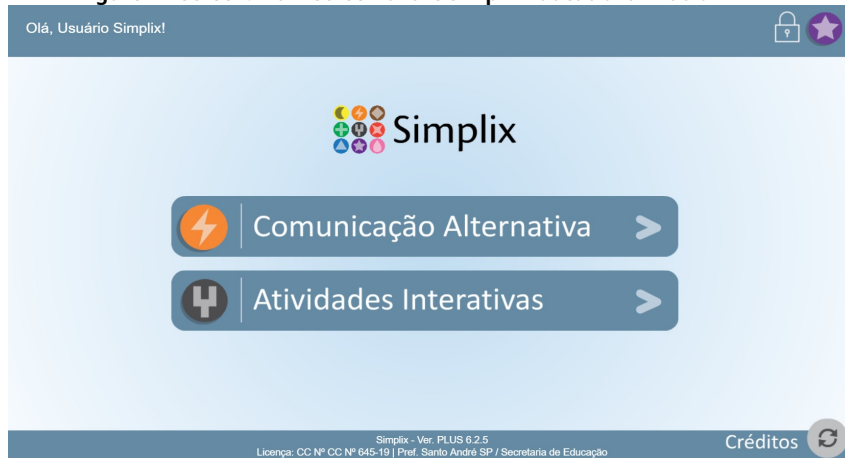
Source: Actcon Group (2018)

Figure 3 – Screen: Alternative Communication of the Simplix Platform

Source: Actcon Group (2018)

**Figure 4 – Screen: Interactive Activities of the Simplix Platform**

Source: Actcon Group (2018)

Figure 5 – Screen: example of pedagogical intervention – Simplix Platform Literacy

SELECIONE O NOME DA FIGURA QUE COMEÇA COM PA.

Source: Actcon Group (2018)

Figure 6 – Screen: example of neuropsychopedagogical intervention on the Simplix Platform

SELECIONE A IMAGEM QUE APRESENTA UM PATO.
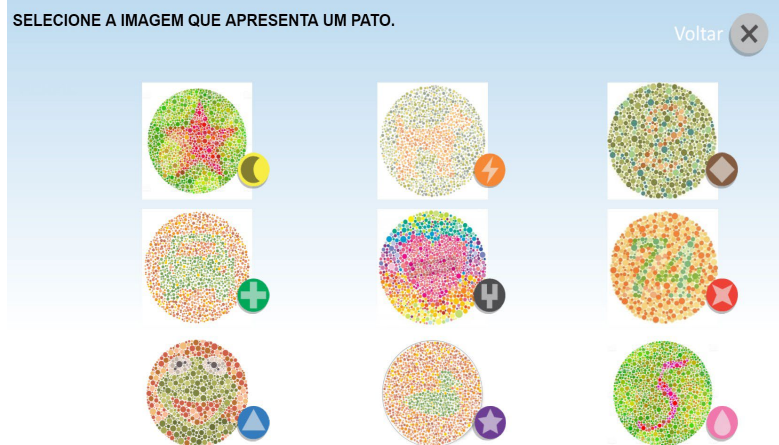
Source: Actcon Group (2018)

Figure 7 – Screen: example of Psychopedagogical intervention on the Simplix Platform

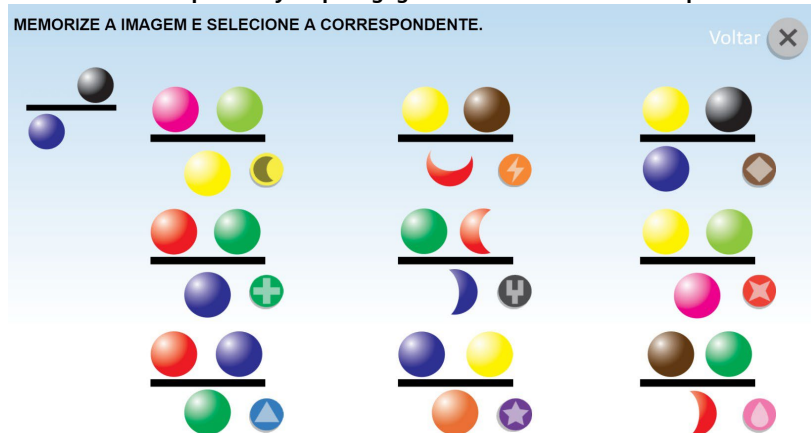MEMORIZE A IMAGEM E SELECIONE A CORRESPONDENTE.

Source: Actcon Group (2018)

Figure 8 – Screen: example of neuropsychopedagogical intervention on the Simplix Platform

Source: Actcon Group (2018)

The possibilities for applying multimedia communication boards contribute to generating a different and more pleasurable learning environment, encouraging interaction, while promoting autonomy and digital inclusion.

Multimedia boards, in particular, provide strategies that aim not only to facilitate learning, but also act as a powerful instrument that favors the work of the aspects responsible for the construction of knowledge previously determined in the planning of their practice (contained in the Individual Development Plan – PDI) and also aim to meet the specificities of each person served, in total harmony with their peculiarities and respecting their diversity.

It is in this context, then, that the educational process, combined with technology, starts to guarantee and enable an educational space in which the student becomes an active subject of their learning, exchanging with the most varied social spaces, allowing, in fact, that inclusive practices become possible.

The. Valuing diversity and knowledge

> There are differences and there are equalities, and not everything should be the same nor should everything be different, [...] we must have the right to be different when equality distorts us and the right to be equal when difference makes us inferior (MANTOAN , 2006, p. 7-8).

Valuing diversity, as an agent for transforming social consciousness, is the principle of building an inclusive society. And it is through it that we will give people a voice and a voice, in order to enable social participation and the full exercise of citizenship. The education

inclusive is a proposal that came to provoke changes in the conception of pedagogical practice and restructuring of the school environment. It arose precisely from the need to look at singularities, diversity and to combat any form of discrimination, determining that a person, regardless of their disabilities, limitations or learning difficulties, has the right, like any citizen, to education and learning.

**Figure SEQ Figure * ARABIC 9 – Planks
Sociodigital literacy**

Source: the author

In this sense, the platform is in line with the determinations of the BNCC (Skills no. 4 and 6). From the perspective of an inclusive and integral education, different types and methods of literacy are used in order to provide teaching conditions that create the possibility of inclusion, with the aim of undoing the reproduction of inequalities based on the exclusive use of a single method . The idea is that, based on the differences and educational needs of students, the platform reinforces educational opportunities.

To this end, literacy methods widely used by education professionals were also used: synthetic methods (alphabetic, syllabic and phonic) and analytical methods (word, sentence, global and mixed).

This is how the platform contributes to communicational and intellectual development, respecting and valuing the different ways of learning and opening up new possibilities for access to information, interaction, practices mediated by technology and support for school processes.

B. Adaptive mediation with technologies as an intervention practice

The Simplix Educational Platform allows, through the application of multimedia communication boards, to make interventions more meaningful and inclusive, by combining

them with the various AAC methods and approaches and with meaningful learning processes, all scientifically widespread. Examples are: PECS Method, ABA Method, TEACCH Method and AVD. In this way, as it supports and provides opportunities for communication, breaking communication barriers, the platform provides favorable conditions for people to express needs, emotions and desires to be understood.

w. Board models for pedagogical mediation

The board models of the Simplix Educational Platform, aimed at pedagogical mediation, aim to provide mediations based on play and point to concepts that provide opportunities or accelerate the process of learning, development and social inclusion. Through this playfulness, they ensure necessary elements to propose different learning opportunities and situations, facilitating access to objects of knowledge, the development of skills and multiple ways of learning.

In the pedagogical action with the boards, the teacher is a mediator of the educational process that will lead the student to "learn to learn". The construction of effective pedagogical interventions and the construction of knowledge are directly linked to the experiences that occur between educators and students. Therefore, it is considered that in the processes of knowledge acquisition, the proposed mediation that appropriates and bases its practice in light of the main theories of education, is a fundamental condition to be able to stimulate students' cognition.

The acquisition of knowledge only occurs through the consolidation of thought structures and, therefore, always occurs after the consolidation of the scheme that supports it; in the same way, the passage from one stage to another depends on the consolidation and overcoming of the previous one (Piaget, 1977). Also, in the words of Juan Delval, student of Piaget, professor at the Autonomous University of Madrid in Spain,

> Learning depends on each person's previous knowledge and experiences. To expand them, in addition to proposing situations that destabilize established knowledge, students must feel motivated to make a cognitive effort to overcome the problem (DELVAL, nd cited in FERNANDES, 2011, p. 134).

From this perspective, board models for pedagogical mediation propose learning situations that allow students to expand their cognitive level when learning something new. To this end, challenges are proposed in levels, with the aim of enabling assimilation and accommodation (the construction of new knowledge based on pre-existing ones, but expanding them), allowing already assimilated concepts to go through a process of destabilization and subsequent reorganization, triggering the evolution of cognitive structures, which Piaget (1996) called major balance.

In this context, the application of board models for pedagogical mediation allows not only gains in AAC, but also in carrying out pedagogical practices that emphasize interaction and collaboration, in such a way that they bring gains to the development of the curricular proposal and learning, participating of activities that can be contextualized with the student's initial literacy.

Therefore, promoting socio-digital literacy also means allowing students to use different spaces: public, school and social, as learning, when understood as a process centered on the student and their activity, must be characterized by its significant aspect, active, interactive, social and reflective. This conception sees the student as part of the process, within a space and time, as a political being, protagonist of their own history, capable of living their citizenship fully.

In practice, the boards in the "Interactive Activities" module of the Simplix adaptive technology for pedagogical mediation aim, from an active learning perspective, to stimulate ideas and make connections in student learning while the teacher works alongside them, asking questions, providing resources and making suggestions in response to the ideas presented in the execution of the multimedia communication boards. The teacher creates possibilities for students, providing the necessary support to enable them to work independently and autonomously. To this end, the teaching professional must try to trigger learning that has not yet begun, considering the student's zone of proximal development, with the aim of helping him to progress, planning his pedagogical work for the knowledge that the student does not yet have, thus creating , new learning possibilities.

In this way, the importance of pedagogical mediation is emphasized and it is confirmed that social interaction is fundamental for the construction of knowledge. In the same way, the reference coming through the educator is the way through which one can get to know the different

meanings that can be given to the use of digital technologies in teaching and learning processes.

In this perspective, the application of the platform's boards becomes a powerful ally for the teacher in their pedagogical practice, since their use helps to promote each student's potential to the maximum, aiming to develop their mental capabilities and activate internal processes. of assimilation. It is in this same individual that the possibilities of overcoming, compensation and functional balance must be sought.

FINAL CONSIDERATIONS

It is extremely important for human development to appropriate the experiences present in their culture and, from this perspective, adaptive digital technologies enable sociocultural practices that allow changing cognitive skills by providing new forms of communication, socialization, acquisition and construction of knowledge. thought.

The Simplix adaptive educational platform, aimed at pedagogical mediation, aims to provide mediations based on play and points to concepts that provide opportunities or accelerate the process of learning, development and social inclusion. Through this playfulness, it ensures necessary elements to propose different learning opportunities and situations, facilitating access to objects of knowledge, the development of skills and multiple ways of learning. Therefore, the assumption is affirmed that technology can provide ways to promote alternative communication for people with communication difficulties.

The acquisition of knowledge only occurs through the consolidation of thought structures and, therefore, always occurs after the consolidation of the scheme that supports it; in the same way, the passage from one stage to another depends on the consolidation and overcoming of the previous one (PIAGET, 1977).

From this perspective, it is evident that the use of adaptive educational computational technologies that use sound and images (with a semiotic nature), allows mediation and interposition between people, their relationships with the world and their objects of knowledge, which is exactly the proposal presented in this case study. The platform, then, supports the process of developing communication (alternative and augmentative), with a view to educational inclusion and integration (including digital) and educational processes, as well as expanding and stimulating the modifiability of cognition structures mediated by the use of technologies adaptations for people with disabilities.

This adaptive technology is already a reality and is present and operational in cities such as Recife (PE), Curitiba (PR), Santo André (SP), Guarulhos (SP) and São Luiz (MA), it currently reaches more than 5,000 people with disabilities across Brazil. In 2018, this Brazilian adaptive technology received awards in the United States of America, Chile and the United Arab Emirates.

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