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Volume 3 - Número 3 Março de 2021
RCMOS
REVISTA CIENTÍFICA MULTIDISCIPLINAR: O SABER
ISSN 2675-9128
DOI 10.51473

# USE OF TECHNOLOGY AS A STRATEGY CONSTRUCTION OF THOUGHT

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# *UTILIZATION OF TECHNOLOGY AS A STRATEGY FOR THE CONSTRUCTION OF THOUGHT*

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**Summary**

This article deals with technology and its use as a strategy to encourage the construction of thought, in a creative and dynamic way. Contemporary society lives amidst technologies and has been impacted by the principle of multiplicity where everyone is connected to a network. From this perspective, technology is a powerful mechanism in the educational process, helping to mediate between facilitation methodologies and how activities related to reading and writing behave when technology enters the scene. The speed and evolution of these possibilities, sometimes, may not reflect the fact that we are involved in a web of intelligences that can overlap, balance or precede these strategies as effective ways of achieving results. To construct this reflection, bibliographical research was used, seeking various research sources. It is necessary to stick to the goals you desire in terms of the final result to be expected and to know, which contributions have been relevant as effective mediators in encouraging intellectual development.
**Key words**: Technology. Education. Construction of Thought.

**Abstract**

This article deals with technology and its use as a strategy to encourage the construction of thought, in a creative and dynamic way. Contemporary society lives in the midst of technologies and has been impacted by the principle of multiplicity where everyone is connected to a network. In this perspective, technology is a powerful mechanism in the educational process, assisting in the mediation between the facilitation methodologies as the activities related to reading and writing behave when technology enters the scene. The speed and evolution of these possibilities, at times, may not observe that one is involved in a web of intelligences that can overlap, balance or precede these strategies as effective ways to aim for results. To construct this reflection, bibliographic research was used, looking for various

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Volume 3 - Número 3 Março de 2021
RCMOS
REVISTA CIENTÍFICA MULTIDISCIPLINAR: O SABER
ISSN 2675-9128
DOI 10.51473

sources of research. It is necessary to stick to the ends that are desired as to the final result to be expected and to know, which contributions have been relevant as effective mediators in encouraging intellectual development.
**Keywords:**Technology. Education. Construction of Thought.



**1. Introduction**

Technology does not only cause changes in human beings' daily lives, but also in behavior, in the way knowledge is created and in relationships with the world. We live in a technological world, where actions are structured through technology.

In this study, technology is considered as a strategy for promoting the construction of thought through reading and writing, understanding how such tools impact this training when observed directly through motivation and interest, and even so, how these technologies present themselves in their context social and educational. Attempts to use the computer in school education range from the simple typing of a handwritten essay, to the use of ready-made software, as well as, fortunately, through educational projects with an interdisciplinary approach. The latter is the result of integrated work, processed by students and mediated by the educator.

It can no longer be ignored that the computer is part of many people's lives, not only in their professional lives but also in their personal lives. Many communicate more via email than on the phone. Typing a thesis, dissertation or theoretical work became much more efficient and agile after the spread of the text editor. Not to mention the countless possibilities for inserting figures, graphics, videos, photos, among many others.

However, despite the benefits of the computer and its tools in today's society, the educational system still has difficulty discovering a productive and efficient way of working with this instrument in the school routine. The school cannot, therefore, remain on the sidelines of technological evolution. It is in this context that educational information technology emerges today, less as a science or discipline and more as a new language of communication with the world.

## 2 Theoretical foundation

### 2.1 Technology combined with education

Technology emerges as a means to provide various means of resolving issues or helping to resolve them, realizing the meaning of its social function. Technological advancement


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Volume 3 - Número 3 Março de 2021
RCMOS
REVISTA CIENTÍFICA MULTIDISCIPLINAR: O SABER
ISSN 2675-9128
DOI 10.51473

Used with electronic equipment adds a new perception about technology, which can also be identified as new technologies in the information society. Becoming more comprehensive every day and with new information possibilities, which means that more users join in, enjoying real-time knowledge, information and distractions that are becoming more complex and challenging every day.



In this sense, the school suffers from competition that we can consider unfair, as the mechanisms found outside the school are more attractive than classroom teaching. There is a need for schools to reinvent themselves and offer their audiences quality education associated with their reality. A curriculum that makes sense to students, who are familiar with, and aware that our life is not just technology, there are moments when human beings are the center of attention, due to their creativity and ability to solve problems and change their perspectives of life and the society in which he lives.

In this reality in which we live, where it is necessary to be prepared to interact with the various and different forms of information, education sows strategies to fulfill its function of training, educating, preparing and instructing for life. When delimiting the function of writing in education, Lévy (2011) corroborates Vygotsky (1993) when he says that "all people are capable of learning, but we need to adapt our teaching practice to the needs of individuals and the environment. context where they are inserted" (VYGOTSKY, 1993, p. 17).

It is through the safe practice of teaching aids and full knowledge of their mechanisms that teaching is achieved. This practice is essentially expected by the teacher. According to Libâneo (1994), without this dynamic, dialoguing with the new generations will be an expression that is not very concrete.

> These are the teacher's actions through which teaching and student activities are organized to achieve teaching work objectives in relation to specific content. They regulate the forms of interaction between teaching and learning, between the teacher and students, the result of which is the conscious assimilation of knowledge and the development of students' cognitive and operational capabilities (LIBÂNEO, 1994, p. 161).

Silva (2010), refers to Parangolé Pedagogy to contribute to the understanding of the effective experimentation of methods and techniques as auxiliary means to education, when relating the movement of experimenting or interacting with the object of its expression, that is, when using a technological means to achieve an educational objective. In that regard,


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Volume 3 - Número 3 Março de 2021
RCMOS
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ISSN 2675-9128
DOI 10.51473

It can be said that it is corroborating a pedagogy of experimentation or a Pedagogy of Parangolé in the light of technology.

Parangolé Pedagogy is experienced intensely by the individual, for example, when they engage in an interactive purpose with their equipment in front of a screen or a machine that interacts, facilitating the production and reading of relevant content, becoming authors of a process educational. This process differs from, for example, prostrating oneself in front of a television and simply receiving information, even if relevant, since one does not experience the equipment in an interactive way. The essence of the interaction between the machine and its educational function is what brings significance to this theory.



However, for training strategies to be achieved it is necessary to explore the science of education in a consolidated way. In this field, didactics fulfills its role by developing appropriate strategies and activating motivations which will open cognitive capabilities. When approaching general didactics, Gascón and Labra (2008) summarize the strategies and dimensions to be achieved:

Table 1 - Strategies and dimensions

| |
|---|
| a) Physical and psychomotor strategies: they affect the body and its development, they refer more to physiology. |
| b) Cognitive or intellectual strategies: refers to attention, student participation through communication of intentions, interpretation, reinforcement activity and feedback. |
| c) Social type strategies: production of good human relations being a first condition. The second condition involves the participation of everyone involved: friendly treatment, sense of belonging, sharing of objectives and experiencing satisfaction when achieving individual and collective successes. |
| d) Emotional type strategies: they awaken enthusiasm, satisfaction and well-being due to the satisfaction of carrying out the proposed activities, they allow praise to establish a good feeling in the parts of the process. |
| e) Strategies that affect personality: they are based on the maintenance and development of self-esteem. Self-esteem brings a positive concept, the assessment that each person makes of their self-perception, how they value the way they see themselves, related to acceptance or non-acceptance. |

Source: Adapted from Gascón and Labra (2008)

When referring to the scope of proposed results for teaching, Gascón and Labra (2008, p.191) argue:

> We noticed that strategies that work well one day with some students with others may fail, with a group or individual students. But there is a style that never fails in the long run: valuing people, appreciating them, trusting them, sharing with them a passion for the subjects they teach. All which is sincerely the cause for every student. She represents the style of sharing and collaboration, accompanying and stimulating personal growth with the most appropriate techniques and strategies.

Therefore, it is understood that strategies are not ends in themselves, intervening in motivations is a requirement to be successful in teaching strategies. Individual motivations


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RCMOS
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ISSN 2675-9128
DOI 10.51473

in the knowledge society they are linked to concepts of networks, hypertexts, autonomy, breadth, collaboration. The reconstruction of this paradigm opens up new values and new patterns of behavior to be understood as natural, dynamic and as part of a new structure to be planned by educational sciences.



A new class of intervention proposals relates to a set of technologies, between those considered traditional and those considered new, a new class of strategies contemplates the balance of this transition.

## 2.2 Technology and new meanings

Technology is here to stay and transform people's daily lives. With real-time information, new alternatives, increasingly sophisticated devices with features that were unimaginable until recently. But these “news” do not always reach educational environments, which would be essential, as this is where people are trained to exercise their citizenship on an equal basis with all citizens.

When technology is inserted into the educational space, it forms a tangle of generational profiles, machines and equipment, patterns of values, behaviors and strategies and many other media resources available for proactive and renewing education, which is what is expected in classrooms, laboratories of schools, where by coordinating the diversity of phenomena allied to education, the challenge of promoting the enjoyment of reading and writing is increased to carry out competent training.

Therefore, with the advent of technology, the need to understand and master the new meanings brought by this technology becomes evident, whether in schools, universities or corporate environments, identifying the influence that these equipment exert on social activities both through television, cell phone applications and computer programs and various technological approaches, which can be for science, productivity or leisure. The exploration of technology involves all generations who are motivated and exercise their potential, mixing its use in both the academic universe and social contexts. If traditional technologies are already in full diffusion, it is necessary to expand the dissemination of how to characterize and explore what technology can offer without there being a divergent transition and that this transition does not necessarily mean a complete change through the exchange of technologies (CARRILLO; MEDINA , 2009).

Carrillo and Medina (2009) list characteristics of new technologies such as: “Storage, Innovation, New Codes and Languages, Digitization, Technical Quality, Interactivity,


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RCMOS
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ISSN 2675-9128
DOI 10.51473

Immateriality, Diversity, Automation, Penetration in all sectors, centered on Processes, Instantaneity, Interconnection" (CARRILLO; MEDINA, 2009, p. 35).



These are considered the characteristics of today, a time that demands speed and volume of information, construction and exchange of knowledge like no other time in history. Technological terminologies have become so familiar that they are often treated as a common part of everyday routines. It is not new even for teachers or trainers who do not master educational technologies to use these terms and even to use some tools without full recognition that such machines can be considered interventions programmed for didactic use. In this way, the connection between social and educational life emerges.

In this sense, Carrillo and Medina (2009) point out the possibility of integrating new technologies as a teaching resource, object of study, means of expression and resources for organizing an integrated curriculum. They point out that the transmission of audio, image and video combine with the work in a process that achieves educational objectives.

It is a challenge to master specific knowledge of a program, the language to be worked and determine pedagogical strategies. Carrillo and Medina (2009), in a vast study on technologies, cataloged programs that quickly became obsolete due to the speed of evolution. Therefore, understanding that technological evolution is part of a faster process that can be followed, is a milestone that will consolidate the construction of new thinking and a new approach on which technologies will be used.

When considering the context of machine language and electronic programs, it is recognized that the internet presents an innovative concept for the interaction between systems and people. Analyzing the complexity of the web of stimuli and possibilities of information and communication, Carrillo and Medina (2009) corroborate this by reflecting on the practices of teachers:

> Many times, administration and teachers' concerns center on how to be fair and respond to as many and complex diversity as can be found in any class or subject, and contemplate the person as a whole: interests, desires, emotions, multiple intelligences, means, preparation, etc. (CARRILLO; MEDINA, 2009, p. 371).

The authors also point out that the process triggers, through educational technologies, a didactic principle of learning that takes place in a constructive and collaborative way. This learning dynamic also encompasses learning


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RCMOS
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individualized, assisted by external agents, by discovery when guided by the activities to be achieved.

As resources to be explored at school Careaga and Videgaray (2009) highlight: pages *web*, email or *email*, instant messaging services, digital photography, digital audio, digital video, multimedia (combination of digital elements), word processing, spreadsheets, editor *slides*, videoconferences, electronic books, databases, programs and programming languages in general (mind maps, statistics, simulation and localization, screen capture), as available resources, with full access, just an open page on the internet for this to be possible.



Careaga and Videgaray (2009), further reinforce, that the elements trigger modalities of educational use such as tutorials (informative guides), hypertext and hypermedia (interconnected connections between texts and other media), practical exercise programs or entertainment, simulators, educational games, open learning tools (manipulated teaching modules or portals), electronic mail, chat (*chat*), virtual work groups, exams and tests or *quiz* (question and answer system), internet-based learning (with consultations in *websites*), mind maps, virtual field practices (internet activities in a guided and programmed way) and video conferences. These modalities, when incorporated as teaching strategies, can encourage, for example, reading and writing, or motivation to read even if to understand statements, rules, but which encourages reading with meaning.

The didactic adjustments that will lead to the success of the proposed approach in planning are important aspects to be observed when using a program. In this sense, we refer to Romero, Román and LLorente (2009) who list the didactic adjustments for using a program, as follows:

> Learning objectives aimed at / Learning content / - Topics covered / - Transmission of values / - Presentation of appropriate models of conduct / - Propose conflict resolution models / Learning activities / Assessment (strategies for detecting acquired learning) / Motivation (how you intend to draw the user's attention) (ROMERO; ROMÁN; LLORENTE, 2009, p. 74).

In addition to didactic adjustments, it is also necessary to validate the suitability of the program, in order to ensure that the program can meet the criteria already validated by didactic adequacy. To ensure the validity of the program, the following can be observed: “Use of the program / Ease of use / - Response time to use / - Error correction / Language / -


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Presentation of sounds, words and phrases / - Vocabulary level / - Use of sentences: short or long / - Correct grammatical constructions / Comments or suggestions about the software" (ROMERO; ROMÁN; LLORENTE, 2009, p. 75).



Likewise, when mediating teaching using technology, it is necessary, even when not using programs, to understand clear rules for using didactics and contextual validity to satisfactorily explore mediation. This mediation directed to content on the internet or in digital formats must be clear, clean, structured and coordinated. In this sense, it is important to mention some criteria pointed out by Almenara (2007):

> *Link*the technical component to the didactic one. Do not introduce excessive "virtualisms" without a didactic justification, which may distract the student from key information.*Do not incorporate unnecessary resources into the teaching material.* More information does not mean more learning and in some situations excess resources can divert the student's attention from fundamental elements and make the material too extensive or, in the case of networked materials, slow to download. *Promote dynamic instructional design*. Help the student explore the material in a way that allows them to have a global vision for themselves.*Provide interaction with content and participants (teacher, student, tutor or system administrator).*It is not limited to incorporating materials (no matter how good they are), however, the possibility of carrying out different simulations and exercises that facilitate understanding and mastery of information must be offered.*Create materials that provide student exploration*through information and meaningful construction through own resources (hypertextuality). Provide connection and interconnection of the elements used (text, sounds, images, animations, videos).*Offer a flexible environment* for accessing content, choosing the learning modality and choosing the means and symbolic systems with which the student wishes to learn (involving other content elements, possibilities for choosing resources and organizing the learning process according to their needs) (ALMENARA, 2007a, p. 108-109).

Educational spaces, to fulfill their training role, must prepare subjects to face the demands of the knowledge society, manipulating equipment and the internet, not only for entertainment and commerce services, but, above all, to fulfill their role as trained citizens, educated and prepared to fulfill their social role. Aware of these challenges, the teacher then assumes his responsibility to:

> Provide information, extend, clarify and explain the content presented. Supervise students' progress and review activities carried out. Respond to student work. Ensure that students are achieving the appropriate level. Formulate questions to probe the knowledge that students expose and discover possible inconsistencies and errors they will have. Develop activities to facilitate the understanding of information and its transfer. Develop activities and learning situations according to a previous diagnosis. Introduce the topic of debate and relate them to previous topics. Summarize the group debates by making inferences. Resolve possible doubts when reading teaching materials in relation to the activities. Recognize activities individually or in groups


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ISSN 2675-9128
DOI 10.51473

> carried out. Inform and recognize the results achieved, etc. (SÁNCHEZ. ESPINOSA, 2007, p.105).

In technology-mediated education, the capabilities of media education are recognized and Almenara (2007b), distinctly, summarizes its roles:



> TEACHER /Technical knowledge of the environment / Didactic knowledge /Motivation and pre-disposition/Ability for dialogue and negotiation / STUDENT/ Motivation / Construction of knowledge /Development of communicative attitudes /Contraction of reality itself / Participation /Cooperation /METHODOLOGY /Planned action / Creation of favorable situations / Dialogue / Joint search for solutions / Learning from mistakes (ALMENARA, 2007b, p.95)

Almenara (2007b), referring to the construction of media education, highlights the possibilities of using video in teaching-learning and lists parameters that will guide the appropriate precepts for its use in the teaching-learning process to be observed by the teacher when employing this possibility as a teaching resource:

> They can be used indefinitely. / Possibility of introducing other media such as television and cinema through the message. / Progressive reduction in equipment costs. /The possibility of employment at different educational levels. / Ease of handling with the equipment. /The diversity of functions that can be used in teaching. / Encourages active use by the student. / It can be easily incorporated into a set of multimedia and network materials (ALMENARA, 2007b, p. 131).

The subjects, when enjoying a transition of balanced methodologies, build positive functions in the cognitive process, achieving various educational purposes such as, for example, in exploring a video, achieving their purposes: informing, motivating, expressing, evaluating, investigating, playfulness, aesthetic expression, recapitulating subjects, sparking debates, promoting activities, allowing visualization of forms, structures and processes, learning about iconic culture and building one's own identity, analysis of attitudes and values, references to parents, among others. These purposes can be corroborated in the writing process, in the reading process, and finally, in the training process.

A combined structure of technologies, whether traditional such as print, or digital such as *smartphones* (cell phones), can also form a collaborative panorama, whether through *hyperlinks* or activities facilitated in groups, a balanced combination of teaching processes can build a clear and objective transition, providing security for the educator and adequate stimuli for the student.

An education facilitated by technology is imbued with characteristics such as friendly, flexible, personalized, active, dynamic, multi-personal, expanded, multi-ethnic, collaborative. One


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RCMOS
REVISTA CIENTÍFICA MULTIDISCIPLINAR: O SABER
ISSN 2675-9128
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new education is already happening. Technologies have contributed to this education happening over the years. Electronic equipment stands out due to its specificities of internet connection and portability, thus the era of the new, the era of transition and the era of "new" technologies, need to be perceived as part of a clear process in which the " new" will not cease, in which the speed will not reduce and in which the strategies will always be updated, restructured, but sequentially consolidated



**Final considerations**

At the end of the proposed reflections, it is concluded that the internet has a strong influence on education when the proposal is based on reading and writing activities and provides students with access to the media to carry out the activities.

In this way, new forms of encouraging reading and writing in students' daily lives take place in a balanced perception where teachers promote the encouragement of technologies indicating materials in digital formats and positively influencing the use of electronic equipment and materials in digital format that are explored. through this technology, which is recognized as an intrinsic part of the students' social context and this movement leads to relating electronic equipment to an open door to reading and writing in their training, in any environment, autonomously managing their time.

Therefore, technological resources contribute to promoting reading and writing, however traditional methods are still very representative in terms of motivation to carry out reading and writing activities related to student training.

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