

Communication and Learning: Transforming Elements

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Abstract

This article explores the evolution of human communication, from its primitive origins to the current digital era, emphasizing changes in the methods of information transmission and their impact on society. It discusses how Darwin's theory of evolution applies to communication, highlighting the importance of adaptation and intergenerational transmission of knowledge. The article discusses the transition from pictograms and hieroglyphs to modern emoticons, reflecting a paradoxical return to visual communication.

The effects of excessive use of mobile devices on physical and mental health, particularly among young people, are discussed. The article also examines the concept of "ecology of knowledge", emphasizing the importance of valuing diverse types of knowledge beyond the scientific. A learning cycle model based on this concept is presented. It also reflects on the changes in post-pandemic education, highlighting the need to adapt to new technological tools and teaching methods. It concludes by exploring the four pillars of education: learning to be, learning to live together, learning to know and learning to do. The importance of a comprehensive education that not only transmits knowledge, but also develops practical skills, fosters coexistence and promotes personal growth is emphasized.

Keywords: *Communication, Learning, Knowledge, Transformation*

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I. INTRODUCTION

Human communication has undergone a significant evolution throughout history, adapting to social, technological and cultural changes. This article examines this evolution from a multidisciplinary perspective, ranging from Darwinian theories to the challenges of the digital age. It explores how communication methods have changed, from ancient pictograms to modern emoticons, and analyzes the impact of these transformations on contemporary society. In addition, it addresses the importance of the "ecology of knowledge" in the learning process and reflects on the changes in education in the aftermath of the COVID-19 pandemic. The aim is to provide a comprehensive view of how communication and education have adapted and will continue to adapt to an ever-changing world.

Relevant aspects of the history of communication

Since ancient times, the idea of communicating, transmitting messages and interacting with other beings emerged; but in order to better understand the origin of communication, the theory of evolution proposed by Charles Darwin must be taken into account, since his theory states that evolution occurs due to the correlation established between living beings. In general terms, we communicate to exchange messages, to have access to more information, to improve the species, to adapt to the demands of natural or social environments, among other aspects. Therefore, it can be stated that communication is of utmost importance since it allows us to learn and to survive. This means that everyone learns to adapt based on the changing conditions of its environment.

For Darwin [1] all living beings evolve by different types of processes and produce different and varied results and he states: "Small changes in the conditions of life are beneficial to all living beings, since there is a constant tendency in natural selection to preserve the greatest possible divergence in the descendants". What is transmitted from generation to generation, whether "good or bad", is not the adult structure, but a list of knowledge that gives rise to that structure. Based on the above, emotional expressions, the same language, have

been the tools that people have used to evolve in order to improve and survive, even animals manifest a non-verbal communication and send messages of need, affection, fear, etc. to their master. This introduction to evolution, taking Darwin as a reference point, leads to the idea that today a new paradigm is emerging in terms of evolution in the process of communication and language itself.

For Aguado, [2] defines that "human communication is characterized by requiring an individual self-awareness that allows the production of meanings, the identification of the subjects that participate in it and the intentional orientation of the communicative processes", the interesting thing about his approach is that he demarcates communication by three axes Society, Culture and Self-awareness and this has been reflected throughout history.

Regarding oral and written communication, several authors put forward many hypotheses about its origin and its respective evolution, but for this article of reflection we will take some ages as references and they are presented in Table 1, but with emphasis on the digital era.

Table 1: Summary of oral and written communication

AGE		DESCRIPTION
Antiquity Mesopotamia Egyptians	Pictograms Hieroglyphs	In Mesopotamia a basic form of writing appeared on cave walls. At the same time, the Egyptians wrote their hieroglyphs on walls and in tombs. A primitive form of communication, but relevant.
Antiquity Canaanites Greece Phoenicians	Cuneiform Writing Alphabet	Clay tablets The Canaanites used a method of writing with an alphabet (27 letters). In Greece they adopt symbols that had phonetic The Phoenicians invent an alphabet, and the Greeks introduce vowels.
Middle Ages	Semi-uncial script	Semi-uncial writing appears The Chinese invent paper
Modern Age	Industrialization	To mention a few: Printed newspaper. The printing press is improved Radio Television Turing Machine (the origin of the computer).
Digital Age		The Word Wide Web (Internet) is created Companies begin to rely on computers Mobile devices Neural Networks Artificial Intelligence AI

The digital age or digital era has advanced significantly and has shown us other ways of communicating and starting a new paradigm, there are devices and technological tools and software that allow us to communicate in real time.

But something important to highlight is that we change the alphabet for "images" or "emoticons", in the editorial "importance of emoticons" states that these serve "to express mainly different feelings in a chat or informal communication that can be had in any of the social networks or modern chat spaces" [3]. An example of use is in WhatsApp, a software that allows to communicate in real time with another person either by text or by audio messages or video calls, but the particularity lies in that text messages in which words should be used have been replaced by an emoji, for its part the Royal Academy of Language - RAE, defines it as "Small image or digital icon used in electronic communications to represent an emotion, an object, an idea, etc" [4].

If we make an analogy and a reflective analysis, we go back to the ancient times when pictograms or hieroglyphs were used to represent an event or event or to express a feeling. But in another aspect related to evolution, Cantero comments that, "repeated movements of the thumb to operate a cell phone, for example, have been related to the appearance of certain pathologies due to overuse. Specifically with tendinitis of the thumb due to overuse, also known by the term "whatsAppitis" [5]". It can be deduced that the overuse of computers and all types of mobile devices intensified in 2019 and 2020 product of Covid 19.

Currently, these technological devices are commonly used for communication, reading, studying, learning, working, surfing the Internet, social networks, among others. But the question arises if these could be modifying the hand from the evolutionary point of view and additionally leaving some pathologies in early ages, as mentioned by Cantero, only time will give the answer, for now Barrios-Borjas et al. mention that "The

excessive use of cell phones predisposes to nonverbal behavior, limiting face-to-face interaction with the other person and contact with the environment around us." [6]. There is even talk of studies that show "mental alterations that the excessive use of cell phones can produce among young people. However, the cell phone is an important tool both for work and for interacting with loved ones and learning, and there are even certain applications to help people with health problems or addictions" [7]. However, the problem lies in its excessive use and the young population is more exposed and affected.

The learning process taking into account the ecology of knowledge

For De Sousa Santos in his book "An Epistemology of the South" presents the following, which for this reflection on communication is important to consider:

One of the basic premises of the ecology of knowledge is that all knowledge has internal and external limits. The internal limits are related to the restrictions on real-world interventions imposed by each form of knowledge, while the external limits result from the recognition of alternative interventions made possible by other forms of knowledge. By definition, hegemonic forms of knowledge recognize only internal limits; therefore, the exploration of both the internal and external limits of modern science can only be achieved as part of a counter-hegemonic conception of science [8].

Taking into account the above, with respect to the ecology of knowledge, the type of knowledge that is most valued is scientific. That is, everything that can be defined by natural laws or exact sciences, but what about things that are not verifiable with science? All people, being in contact with others, have experiences, experiences whether good or bad, the closeness with their families, the training at school, university, work, the practice of a sport, among other environments; allow each individual to acquire a different type of knowledge, for example: wisdom, values, ethics; are types of knowledge that can't be acquired with science and not for that reason cease to be relevant and important.

It is suggested that a society advanced in science, but without ethics, would not be successful; it needs the whole to be integral and complete.

Based on the above, it can be concluded that science is important, but other types of knowledge that have the same value in importance and relevance to be more complete and integral individuals cannot be overlooked, therefore, Figure 1 shows the learning cycle based on the Ecology of Knowledge, which has the following phases:

- **OBJECTIVE:** The closeness with family, friends or classmates allows me to learn based on my own experience or simulated by others. A basic example: A child has a lit candle in front of him, the color and movement of the fire catches his attention, his parents tell him -Don't touch it because it burns. The child does not know and has no experience of what burning means. The child's goal is to touch the flame.

- **PLAN:** Learning routes can be many and varied, some more difficult and others easier; continuing with the example: the child can plan how he/she will go through the process of touching the flame.

- **MEASUREMENT AND FOLLOW-UP:** Taking into account the learning routes proposed, I can measure which is the shortest or optimal to reach the goal. Returning to the example, I select the shortest route to reach the flame.

- **ANTICIPATE AND CORRECT:** Based on the measurement and follow-up, the shortest route to achieve learning is analyzed. That is: if a very long route was selected and a shorter one is identified, it is taken into account for next time. In the example the child identifies that stretching his hand and a finger is his best option.

- **FEEDBACK:** When the previous phases have been carried out, learning has been accomplished and this knowledge is used for life. In the example given, the child touches the fire... He feels and knows at that moment what it means to get burned. As learning and feedback for his life, what his parents warned him, he must have that experience, remains engraved in his memory.

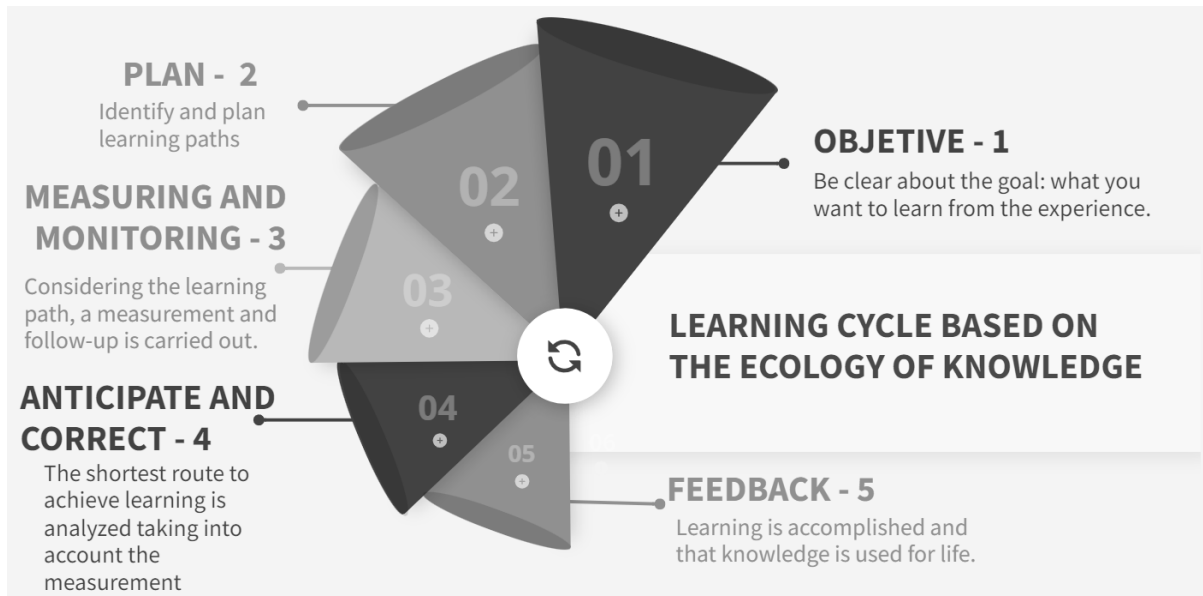


Figure1: Learning cycle based on the ecology of knowledge

Taking into account Morin in his book *The Seven Necessary Knowledge for the Education of the Future*, he states that "It is not a matter of abandoning knowledge of the parts for Knowledge of totalities, nor analysis for synthesis, they must be combined" [9] a text that unambiguously illustrates what must be taken into account in order to acquire knowledge.

Knowledge after the pandemic

The change of life and the impact was significant for all cultures, professions and in general for everyone, an unexpected learning, with important changes in knowledge. A significant milestone in society. The learning process was a challenge that led us to reinvent ourselves and move forward to learn about new technological tools and use them, overcoming myths and managing to change us as a society and people.

Technological advances have come a long way, but they became very relevant in the pandemic. Some ask for personal information, specialized algorithms that analyze our preferences or tastes, but where is the privacy of information? In Colombia the regulation of habeas data law 1266 of 2008 [10] that raises a regulation regarding the administration of personal data and their respective by third parties.

From the educational point of view, Arroyave in the chapter "Roles, practices, dynamics of educational, pedagogical and didactic management in times of change" [11] makes a reflection on the ideas raised above "the present, 2021, becomes a precise time to review everything acquired to understand (oneself) and be encouraged to question the established, to propose, project, imagine what the new reality will be once the pandemic is over".

As a reflection after the pandemic: will we be the same, will we change for the better, what did we learn, did we change or improve our culture, what now, where are we going, where are we going? Many questions, some answers, but what is the contribution of each individual or what is being done to improve and change.

It only remains to say that knowledge is open-door and that we can acquire it in many ways and that all our environment helps us to advance it; as Morín [9] mentions "Culture is constituted by the set of knowledge, know-how, rules, norms, interdictions, strategies, beliefs, ideas, values, myths that are transmitted from generation to generation, reproduced in each individual, controls the existence of society and maintains the psychological and social complexity,...".

The hidden treasure: Education

Education changes ways of thinking and acting, it allows to explore, investigate, innovate, it changes the world and the environment. But one of the challenges faced by teachers and students of all ages and social

strata is to learn, adapt and use the new technological tools that abound at this time as Artificial Intelligence, a tool that is just beginning its incursion into academia. But the challenge in the teaching and learning processes was unexpectedly sharpened with the Covid-19 pandemic, which forced everyone out of the comfort zone, and we all had to change strategies and virtualize classes to avoid unschooling. Therefore, it can be affirmed that regardless of age or level of schooling, all human beings are in a continuous learning process, as Freire mentions as historical and unfinished beings and on which my understanding of the process of knowing is based, teaching is something more than a transitive-relative verb. Teaching does not exist without learning and vice versa, and it was by learning socially that, historically, women and men discovered that it was possible to teach. [12, p. 12].

Based on the above, teachers must be open, willing and with a one hundred percent attitude to accept challenges, to learn, to investigate in order to transmit this knowledge to children, young people and adults with all that technological tools offer us. Use them in favor of assertive learning, motivating students to acquire it in a more practical and experiential way.

It is now important to have educational institutions that offer quality education, that is experiential and that motivates to investigate in order to develop cognitive, procedural and attitudinal skills; that learning becomes a pleasure and a treasure, as stated by Delors "While it is necessary to take advantage of all these possibilities to learn and improve oneself, it is no less true that in order to make good use of this potential, the person must possess all the elements of a quality basic education. Better yet, it is desirable that the school inculcate in him more the taste and pleasure of learning, the ability to learn how to learn, the curiosity of the intellect. Let us even imagine a society in which everyone would be alternately educator and educatee." [13]

Based on the above, we have different types of competencies, and this facilitates learning from each other. Learning is not individual but collective, and we never stop learning. Every day we learn something new. For the above mentioned, the UNESCO report comments on the three pillars for learning to live together, as shown in Figure 2. Pillars for learning to live together.

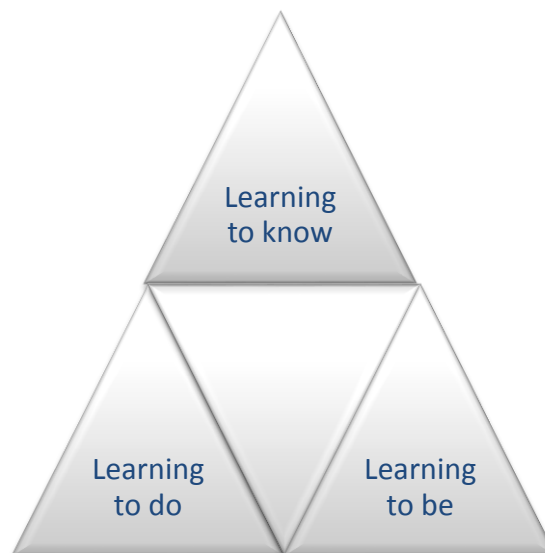


Figure 2. Pillars for learning to live together

Having this clear, it is important to understand that students learn differently, some have skills to do, to elaborate, others to investigate, to explore and others have excellent oratory and leadership skills, as teachers the challenge is to enhance the skills, all in order to discover the treasure that we have and not only of our students, but of ourselves.

The four pillars of education [13], "education is obliged to provide the nautical charts of a complex world in perpetual turmoil and, at the same time, the compass to navigate it". Knowledge is so vast and at the same time one could say endless, limitless. Throughout life learning is continuous and we must adapt to the changing world. Today, education ceased to be the privilege for a few, now it is considered a governmental

priority, regardless of social level, with the aim of advancing social transformation, we all need to acquire knowledge, train ourselves as people to serve society and even have a better quality of life.

"In Colombia, education is defined as a process of permanent, personal, cultural and social formation based on an integral conception of the human person, his dignity, rights and duties" [14]. [14], based on the above, it is a right for all with equality, equity, inclusion and quality, to achieve this, teachers must have the ability to innovate in their classes, improve their teaching methods, the willingness to learn and implement new strategies that motivate and facilitate learning, To reinforce the above it is relevant to mention the four pillars of knowledge that applies to educators and learners, we must break that utopia that only knowledge is needed, the learning of each person is integral, it is learning to know, learning to do, learning to live together and learning to be.

What good is a person with a lot of knowledge but who is not ethical in his attitudes? Therefore, in the current training has been implemented Project Based Learning - PBL or Challenge Based Learning ABR, among others, and through these methodological strategies can be evidenced the achievement of attitudinal, procedural and cognitive skills and thus motivates the student to investigate, innovate, undertake, create, plan, to be motivated, to put their knowledge into practice, to interact with others through these methodological strategies can be evidenced, innovate, undertake, create, plan, to be motivated, to put their knowledge into practice, to interact with others through teamwork and in this way perhaps discover, as Delors says "the hidden treasure in each one of us" [13].

Perez comments "The new generations are not interested in education centered on theoretical and magisterial lectures, but a participatory and collaborative system, which allows them to enhance their interests and passions and which is connected to reality." [15, p. 17]. Based on this, what is mentioned in the UNESCO report seeks to make people integral, applying the four pillars of education:

Learning to be: Since we have use of reason we learn from our environment and each one is acquiring experiences, to imitate our parents, the above leads us to be responsible, respectful, sensitive, to think autonomously, to reflect, to internalize, to make decisions depending on the circumstances to adapt to change and adjust to rules imposed by society, this forms us as people and we each create our own personality. However, education strengthens attitudinal competencies.

Learning to live together: It is important to relate to each other, to have an assertive communication, to relate to each other, we all have a different personality and temperaments that sometimes generate conflicts, for education it is complicated to solve, however, it is relevant to learn to live in society and in the formative process can be supported with workshops or courses on conflict resolution, challenges to work as a team, among others. We are in a warlike society, an example of which are the economic or geopolitical wars that we see in the media and that have an impact on us. The formative process can not do much, but not to leave it unnoticed, try to instill in the individual that we are all equal with different ways of thinking, accepting the differences, disagree with respect, today there are educational policies of inclusion, equality in order to know the other and accept it to really live with cooperation in society. Learning to live together

Learning to know: knowing is a type of learning that has transcended throughout history because since ancient times there has been the conception of exploring, searching, discovering, knowing one's surroundings and this is a very valuable way of acquiring knowledge because it stimulates the critical sense, innovation, creation and this is how progress has been made in various areas of knowledge. Particularly [13] "In the field of research, in particular, the progress of knowledge sometimes occurs at the point where different disciplines converge" this is a very valuable contribution, because if the importance of researching, seeking more information, exploring or stimulating their curiosity and creativity is instilled, motivated and valued in students, this will lead them to broaden their minds, expand their knowledge in different areas of knowledge, value the work of others, contribute and this would help to strengthen learning to live together.

Learning to do: to a certain extent, learning to know and learning to do are linked; currently, knowledge and knowing are valuable, but they are complemented by the application of that knowledge in doing. Today's young people are interested in applied knowledge, in doing and executing. If we analyze it deeply, doing involves learning to be, learning to live together and learning to know; since, by means of an interest, a problem or need, I look for a solution, for that I must investigate the subject and acquire the necessary knowledge, but I must also investigate other people and that is communication, to work in a team and this is to relate with other people. To do is to see that knowledge materialize.

II. CONCLUSION

The evolution of human communication reflects our ability to adapt and our constant search for more efficient ways to transmit information. From primitive methods to today's digital technologies, each stage has brought with it new challenges and opportunities. It is crucial to recognize that while the tools of communication have changed dramatically, the essence of human communication - the need to connect, share and understand - remains constant. In the future, it will be critical to find a balance between taking advantage of new technologies and maintaining traditional interpersonal communication skills.

Definitely being a teacher is a wonderful art that transports us to another world and it is not only imparting knowledge, it is much more than that, it is learning from day to day with students, researching, innovating, undertaking, observing, exploring, accepting the opinion of others with respect even if you do not share the same opinion as the student. For this we need to free ourselves and believe that everything is possible; always with the willingness, guiding and empowering constant learning, in order to be at the forefront of inclusive, heterogeneous, adaptive change, convinced that new generations learn differently and that technology is the tool that contributes to pedagogy, teaching and evaluation. individual.

At this point it is relevant to mention that all human beings have different abilities, but nowadays teaching and learning processes must adapt to the new technological reality and this has led to changes in the way of acquiring knowledge, so it is important to take up again what Cerón mentions "to investigate is learned by investigating in the same way that to swim is learned by swimming. No theoretical class on swimming, no matter how excellent it may be, will replace the individual experience of entering the water and trying to stay afloat and move forward." [16] Change is the path to improvement.

Education is at an inflection point, driven by technological changes and lessons learned during the pandemic. The four pillars of education provide a valuable framework for addressing the educational challenges of the 21st century. It is essential that education systems adopt a holistic approach that not only transmits knowledge, but also develops practical skills, fosters coexistence and promotes personal growth.

The integration of diverse forms of knowledge, including scientific and experiential, will be crucial to prepare students for an increasingly complex and interconnected world. The future of education will depend on our ability to adapt teaching methods to the changing needs of society, while always keeping the integral development of the individual as our goal.

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