

# Learning with Equity Supported By Technology: Transformative Elements of Communities

Claudia Alejandra Rosero Noguera<sup>1\*</sup>

Dora Inés Arroyave Giraldo<sup>2</sup>

<sup>1</sup>Politécnico Colombiano Jaime Isaza Cadavid, Medellín – Colombia

<sup>2</sup>Universidad de San Buenaventura, Medellín – Colombia

Corresponding Author: Claudia Alejandra Rosero Noguera

---

## Abstract:

New technological trends took hold with the arrival of the COVID-19 pandemic and are constantly growing in different areas; these advances were also significantly reflected in the educational field and all its players, who as daring players sought the best way to transmit knowledge through them. Undoubtedly, it was an accelerated learning process, but at the same time it was even greater to have to face the challenge of not unschooling students. The above, also invites to reflect that the unquestionable advance and use of technology is not exempt from several problems, to mention a few; addiction to the platforms, failure to fulfill obligations, isolation, low self-esteem, low academic performance among others. On the other hand, inequality and exclusion was in full evidence in the health emergency, however, it left many lessons learned, reflections and methodological strategies that include the other as a complement in the teaching and learning processes, and that by acquiring knowledge as a collective act, together we can transform the world of the contexts in a better way, and if we have the support and pedagogical use of information and communication technologies, the impact on the communities is more praiseworthy.

**Keywords:** Knowledge, Technology, Learning, Equity

---

Date of Submission: 02-04-2024

Date of acceptance: 12-04-2024

---

## I. INTRODUCTION

The traits of the society we live in, where technology is present in personal, social, academic and professional spheres, require citizens to have the relevant skills to function effectively. [1]

This reflective article takes a general look at the construction of knowledge, since currently there is unlimited access to information thanks to countless technological tools, but behind this lies equity, since not all educational sectors during and after the pandemic have the same possibilities to access it.

In the first aspect, it is taken into account that technology can transform the world and, as daring players, it must be harnessed for teaching and learning processes, motivating young people to strengthen their knowledge and thus being able to contribute to transforming their realities.

Secondly, it is commented that knowledge is shared, therefore, others are needed to learn regardless of their physical or mental condition, since equity is a relevant factor for social transformation. Finally, it reflects on the actors involved in the training process, but with special emphasis on teachers whose quality and professionalism is reflected in each of the students trained and, ultimately, these students, with their leading roles, will be the ones who, with the acquired competencies, gradually rebuild a better country.

## II. DISCUSSION

### BUILDING KNOWLEDGE FROM TECHNOLOGY TO TRANSFORM CONTEXTS

In today's society where screens and audiovisual culture predominate irremediably [...] a methodological and instrumental adaptation in the academic context is essential. Such a modification is justified, among other factors, by the need to reduce the gap that, if not working with methodologies that reduce efforts and increase benefits, would be ever greater [2, p. 115]

How things have changed! For today human beings find themselves immersed in a world in which information is available and access to it is almost unlimited, all thanks to technology. Certainly, using various digital tools, currently the new immersive platforms and Artificial Intelligence - AI, which in the technological field are recognized as Machine Learning Neural Networks or 'Machine Learning', are some of the many trends that are booming today and advancing day by day with new functionalities and operations. In this regard, [3, p. 81] state that "technology will have a high impact as a differentiating factor and as a competitive advantage, if it is about fighting, surviving the attempt and remaining in the market. Technology will irremediably always be a determining factor."

One could say that this is positive, because one has access to a lot of dynamic information that in turn becomes knowledge that enriches and allows for another vision of various issues, but it raises the following concern: to what extent does this favor the educational, economic and social spheres? In this regard, [4, p. 19] states that

One of the major current problems in relation to economic and social development is what types of knowledge it is necessary to generate and take advantage of, and how to do so, precisely for those purposes. This is accompanied by the problem of how to ensure that different social groups have the capacities, not only to appropriate and use knowledge that is relevant to the understanding and solution of their problems but, above all, to generate themselves the knowledge that is necessary for this.

In other words, we are complex beings but in that complexity it is demonstrated that we are constantly interested in acquiring and generating knowledge in one way or another, because certainly "Knowledge is a spiral adventure that has a historical starting point, but no end, which must continually make concentric circles" [5, p. 44], and it can be said that nowadays this is more emphatic since we have many tools at hand, but as we advance in the formative process we face new challenges and discover that understanding can continue to evolve, otherwise it would be to fall into the comfort zone and believe that all knowledge has been attained. In short, we must not ignore that there is always something more to discover and learn with the dynamics of society, nature or experiences, in that sense, keeping an open mind to capture new ideas, concepts, perspectives must be the attitude, because without a doubt, knowledge is infinite and unstoppable!

#### **New Technologies, an Addiction or an Advancement in Knowledge**

It is a fact that nowadays we have many technological tools and this invites us to open our minds, to have an attitude to face the modern world and in this way adapt to an environment of constant change, but, on the other hand, to consider that [6, p. 524]

The unquestionable advancement in technologies is not exempt from problems for some people who have made their use a constant necessity, the axis of their life and a good part of their time, to the point of interfering with the fulfillment of daily life obligations and becoming an authentic "addiction".

There is no doubt that we must reflect, raise awareness and educate ourselves and the young people who come to the classrooms to make good use of technology, which, despite the limitations of equipment and connectivity, is open and allows us to have knowledge of the world, because in connectivity there are no borders or boundaries and we can learn many topics, trades, entertainment, cinema, art, among others. For example, there is no need to travel to France to get to know the works of famous painters that are in the Louvre museum, as it has a virtual tour or through immersive technologies they simulate being in front of the majestic works. But what is evident in everyday life is that both young people and adults, by not regulating the use of technology,

have led them to not share with their families, they isolate themselves, have low self-esteem, inferior academic performance and, in general terms, they suffer from physical ailments or pathologies that are now known as technopathies, technoaddictions or cyberaddictions; from this perspective, [7, p. 63] "it is necessary to raise awareness about the negative effects that the inappropriate use of devices associated with information and communication technologies produces in human beings."

Nevertheless, it is unknown what other developments will be seen in the coming years, but what needs to be analyzed is that individuals are so passionate about these advances and their possible uses, that their life projects are centered on occupations and they are little interested in training as professionals. In this regard, [8] comments that in a study conducted and published by the financial services company Remitly, it describes the desired jobs by young people in each country; it states that the results were surprising because the majority of the countries that make up Latin America today want to be YouTubers and influencers.

Analyzing the situation from another aspect, [9, p. 360] mentions that "Epistemologies of the South focus on the construction and validation of knowledge among oppressed social groups and their allies with the aim of strengthening social struggles against domination," based on this, one could think that today's youth have a life projection of being an influencer, YouTuber, Instagrammer, TikToker, food blogger, podcaster, among others. Now, it is important to highlight that this phenomenon was consolidated with COVID-19, since some through these tools showed their social struggles, social and political grievances, revealing inequality, racism, sexism, and it cannot be denied that this is valid because in this way, people from different social groups express their discontent; however, many others, through their uses, exhibited their little or a lot of knowledge regarding culinary, sports, artisanal, leisure, entertainment skills, among others, thus provoking the infinite exchange of knowledge.

### **New Technological Trends Invite Transforming Education**

It is predicted that many professions that currently exist tend to disappear with the next advances in AI and immersive platforms, essentially foreshadowing the phenomenon of the threat of existence; in other words, the situation of "the threat of replacement, the anxiety that AI may replace people and make them lose their jobs" [10, p. 87]. And the truth is that this is just beginning, but traditional education could be changed and transformed and new technological tools used in favor of keeping up with the changing world and using them to benefit different areas of knowledge; the power lies in fostering a paradigm shift in education in order to transform ideas and innovate, understanding that innovation "has to do with the generation of new knowledge and above all with its social use for solving problems by specific groups." [11, p. 35]

Thus, it is up to all actors: educational institutions, students, parents, society in general, the State among others, to articulate themselves to change their ideas and gradually transform them, because we are presented with two options: either we let the feeling of the threat of replacement invade us, which "is one of the greatest barriers that the adoption of AI in education can encounter, as well as in other sectors of the working population" [10, p. 87], or together we undertake actions to make good use of technological platforms in order to advance and see it reflected in improving the quality of life of citizens. We are convinced that it all starts with a paradigm shift; in this regard, [12, p.27] comments that

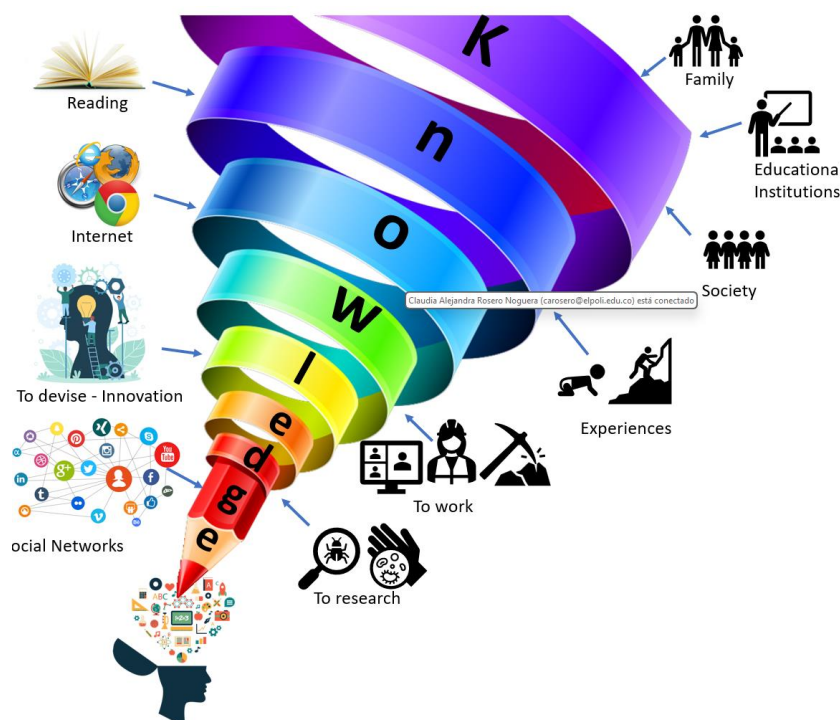
Morin's bets are aimed at a paradigm shift, with an open epistemology that allows us to control, criticize, transcend and reflect on our theories, which, coherently, leads to a change in science, towards a new science, in which not only the object is adapted to science, but science also adapts to the object."

In this context, it must be affirmed that indeed, the proper use of various technological platforms invites a change in thinking and mainly in the educational field, to rethink and definitely to accept the premise that "a classroom means more than four walls, because knowledge is everywhere" [13, p. 79], which leads to the challenge of technological educational innovation that is undoubtedly opening the doors wide to enter the change in the ways of learning and teaching. This is equivalent to saying that everyone must be willing to be part of this change, in other words, it is worth noting that practically every

"education professional has the moral responsibility to develop their own digital competence, whether the educational administrations fulfill the duty to facilitate it or not. There are no excuses, because that is precisely what professionalism consists of." [14, p. 41]

Indeed, the technological era has arrived particularly in education, not only to stay, but it also tends to improve its processes and functionalities, so why not use it to transform teaching and learning strategies? The invitation is to be at the forefront so that some professionals do not become obsolete, but rather strengthen their pedagogical practice through "the use of technological tools and resources [which] makes the student learn at their own pace and anywhere they are and allows them to have autonomy in their self-learning" [15, p.30].

Following this, it is necessary to reiterate that teachers must adapt, prepare and be permanently motivated to venture into these new tools to innovate in their learning strategies, because students are already immersed in the technological era, they are passionate about it and savor it, furthermore not using them in favor of learning and thus generating knowledge among all subjects would be a serious pedagogical mistake; for although some platforms are addictive or generate dependency, it is a priority in the 21st century school to "promote this culture of digital pedagogy to digitally transform education, [but] a pedagogy in which technology is at the service of educational methodologies, and not the other way around". [10, p. 59]



**Figure 1. Knowledge is infinite to transform thinking. (Self-made)**

## **LEARNING TO EDUCATE WITH EQUITY AND INCLUSION**

The lockdown situation raised new questions and renewed many others. The digital divide is no longer mere rhetoric to materialize the difficulties of socio-educational inclusion. [16, p. 231]

### **Educational Equity, Inclusive for All**

In Colombia, equality and equity are discussed in different social, cultural, and political spheres, terms that are commonly confused but have a significant difference. From an analytical point of view, equality does not exist because, being thinking beings and simultaneously autonomous, individuals become unique, insofar as their abilities allow them to act, analyze, and interpret differently. For example, if a group of people is given the same amount of money, each one has the autonomy to use it as they wish. Some will think of investing it to generate more money, others may spend it on traveling, eating, or other activities, and others may simply save it. At that moment, inequality arises again, as one will have more money, another will have very little or nothing, and another, possibly the same amount. As for equity, continuing with the same example, it can be considered that if each individual is given the amount of money they need according to their context and needs, then the long-awaited equity will be achieved. Seen from this perspective, it can be argued that "The concept of equity in this sense adds precision to the concept of equality by attending to the uniqueness and diversity of human beings in their difference" [17, p. 90].

However, from the educational point of view in Colombia, equity has not been achieved because, despite the various approaches within the framework of public policies, education does not reach some remote areas of the country, whether due to armed conflict, forced displacement, lack of teachers, poor physical infrastructure, difficult access to educational institutions, or because they are too far from their homes or because there are no roads to travel. Additionally, discrimination based on physical condition or special educational needs, among other aspects, is also a factor.

Certainly, it cannot be ignored that Colombia is characterized as a diverse, plural, and multicultural country, composed of diverse ethnic groups with different beliefs, languages, and socio-cultural practices. In fact, they are also considered part of the nation's cultural heritage. And although it is assumed that they have the same rights as any Colombian, the right to education, to mention one, is violated insofar as education does not emphasize preserving their values and culture.

In general terms, it is evident that "problems such as discrimination, social exclusion, subordination, and economic inequality continue to affect ethnic and linguistic minorities" [18, p. 49], and in the educational context, the issue of "the lack of training for teachers in language didactics, the absence of study programs, and the few teaching materials" [18, p. 66], prevails, thereby turning these diverse groups into a more vulnerable, unprotected population, and in some cases, completely forgotten.

Considering the above, we can admit that as educators, it is essential to maintain a proactive attitude to transform education and the plural socio-cultural contexts, as it is undoubtedly true that "social education as a profession that generates a process of analysis of reality for social transformation" [19, p. 171], becomes an ally for the current teaching role. Additionally, despite the differences and conditions of the various territories, together we must look towards the same objective and contribute so that all children and young people, without any discrimination, receive dignified and inclusive treatment. In short, it is a transition towards the construction of education for all, regardless of the specific particularities or educational needs that individuals may have, as it is undeniable that everyone has the same rights to access quality and equitable education. Unequivocally,

Ours is a time – and will be even more so – in which it is vital to articulate individual and social efforts to strengthen the social processes of integration (mutual protection and recognition) and thus put an end to a scourge like social injustice that deeply harms not only individuals but also the coexistence and future of societies themselves. [20, p. 89]

Following this line of thought, it is necessary to mention the 2016-2026 National Decennial Education Plan proposed by the Ministry of National Education [21, p. 18], which states:

...to promote individual and collective creativity, the desire and willingness to learn, critical thinking, the development of the socio-emotional competencies required for coexistence, and an ethics that guides action based on solidarity and mutual respect, responsible autonomy, and the recognition and care of the wealth associated with the territorial, ethnic, and cultural diversity of the country. The construction of the nation and the consolidation of peace based on equity, inclusion, as well as respect and care for oneself and others, require training that prepares for coexistence and fosters innovation, reflective appropriation of knowledge, entrepreneurship, productivity, and research.

This is an invitation to reflect and analyze the role of educational institutions and teachers, as it is undeniable that they are relevant actors in formative processes. In this sense, they can also contribute to the fulfillment of what is declared in the National Decennial Education Plan and prevent it from remaining only on paper. Indeed, it is necessary to move to reflective and contextualized action to advance towards quality education under equitable conditions.

One of the possibilities for reflective and contextualized action lies in facilitating the appropriation of knowledge, since it is known that the COVID-19 pandemic left many lessons regarding the pedagogical use of ICTs. Currently, there is a variety of technological tools with free access that can facilitate other teaching strategies and achieve significant learning; however, it is necessary to be aware that,

The contingency caused by the health emergency was the trigger to reconstruct traditional educational models. Thus, virtual education becomes the subterfuge to remedy the complex situation that jeopardized the schooling of the planet's population. In multicultural contexts, education during the pandemic revealed significant difficulties due to the lack of connectivity, the shortage of computing

equipment, and the limited use of ICTs. Teachers serving this type of population also showed shortcomings in facing changes in virtual intercultural education. [22, p. 109]

Therefore, it should be noted that there is still much to reconstruct, renew, and contribute to educational processes to fully comply with the Colombian National Decennial Education Plan. A strategy, based on all the experiences faced during the pandemic, could be the investment to ensure that all sectors of the country have at least computing equipment, connectivity, and thus access to technology. As [23, p. 92] rightly points out, "Digitality has already penetrated all spheres of life," and it has certainly become a transcendental factor in education. Therefore, the greatest post-pandemic learning for society in general, in an educational key, consists of discerning that "in the face of the impacts of the pandemic, it is essential that education be a fundamental pillar for closing gaps and advancing towards the goals of inclusion and social equity." [24, p. 23]

### **Research with projects opens the mind.**

In the educational sector, it is common to name multiple teaching and learning strategies to respond to differences in students' learning paces and styles. But how accurate are they, and how significant is the learning in students in training? Well, one proposal can be:

Customized projects [which] become another potential tool for achieving educational inclusivity for students who require it. It is reiterated that classrooms require temporal-spatial organizations and diverse forms of interaction and grouping that allow learning options for students and teaching possibilities, with the goal of teachers developing pedagogical support for students. [25, p. 66]

However, it is important to consider that, depending on the level of training, the development of projects, whether basic, classroom, formative research, among others, strengthen many attitudinal, procedural, and cognitive competencies; in short, even in a basic way, the student is introduced to the search for information, expanding concepts, visualizing solutions, developing logic, and this strengthens the capacity to research, inquire, encourage reading, and even the curiosity to learn more or to improve what has been learned.

Another aspect to highlight is that working on projects "enhances co-teaching and the interdisciplinary integration of curricular areas with a common purpose: to favor significant and competential learning from an inclusive and integrative perspective" [26, p.2]. Essentially, learning through a project, besides strengthening many cognitive and procedural competencies, also invites the inclusion of others and the acceptance of their physical or mental condition, thus transversally transmitting everything related to the context of inclusion and, in that sense, responding to diversity and, in general, strengthening attitudinal competencies and the value of solidarity so necessary for these times. As [27, p.60] rightly states, "teachers must, above all, reinstall the ethics of solidarity."

It should be considered that "An inclusive educational system is one that values difference and recognizes that all people are different, promoting permanent changes to achieve relevant and quality education, according to the characteristics of the context" [24, p.5]. Therefore, a significant aspect is that students, according to their personal, family, social, and cultural environment, have different ways of learning and therefore also have different educational needs. This is the case for the peasant or indigenous population that suffers forced displacement due to armed conflict or attends an institution lacking technical resources, technology, and infrastructure, due to corruption or other factors. A variety of aspects that induce populations to leave their territories to move to different cities and face everything that this unknown context presents them.

On the other hand, with the territories uninhabited due to the dangers of events, other situations emerge, as [28, pp. 93-94] comments,

The different educational actors state that the number has decreased considerably and predict that the school in these sectors tends to disappear; likewise, it recognizes that very few teachers want to live continuously in these towns, and for the same reason, some are managing their transfer.

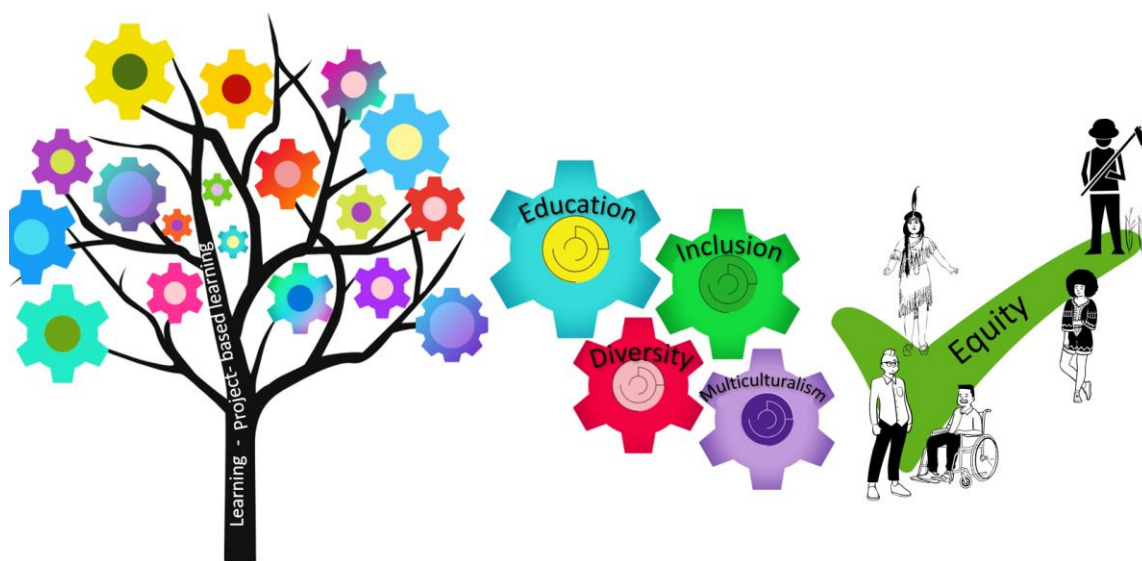
Now, if we consider that, from the educational field, a joint effort can be led in each territory, that is, a binding and cooperative work with the various actors and agents of the communities, and of course the State present and in action, it is possible to change these new realities. However, to achieve this, it undeniably requires a conception of the territory from a perspective different from the classical, welfare stance, because undoubtedly

the territory is not a static entity; on the contrary, it is a flexible and dynamic social construction that expresses the understandings of people and groups about a common social space, lived and appropriated, that goes beyond the physical and natural substrate, in which a network of interrelations of various orders is produced, among which, of course, are those related to the education of its inhabitants. [29, p. 13]

All social groups, including the most vulnerable of all populations, are important, and for this reason, they require intervention and support from all areas, including education, because “We can only talk about equity and social justice if we change our educational practices in such a way that no one is excluded.” [17, p. 91]

From this perspective, research with projects indeed opens the mind and enables mapping the limitations and possibilities of the multiple processes of social learning for the transformation of any territory “conceived as an educational environment in which events with educational potential take place” [29, p. 13] In light of this, [30, p. 189] points out that,

social learning processes are promoted by involving all members of the community in the transformation of their environment. Thus, horizontal dialogue and openness to share findings, ideas, and proposals for improvement are necessary to achieve social transformation.



**Figure 2. Learning with equity transforms territories. (Self-made)**

## **LEARNING OF INDIVIDUALS DURING THE PANDEMIC AND THE CHALLENGES FOR ACADEMIC FUTURE**

Much remains to be recovered from the pandemic experience in terms of the transformation of subjectivities and social organization modes. It is crucial to understand what transformed us or how we transformed in terms of times, spaces, practices, and life experiences. [31, p. 423]

### **The pandemic, learnings, and challenges**

The unexpected arrival of the pandemic was received in many ways, not very pleasant because there were more infections day by day, uncertainty increased, and all countries decided on an immediate halt of various economic sectors. Amidst all that chaos, everything related to the educational field also closed, causing the State, school directors, teachers, parents, and even the students themselves to express their concern about

the potential loss of learning and disconnection from school activities that would result, and the fact that this impact would be very different among groups of children of different social conditions within the same country, and between countries. [32, p.17]

There is a consensus that the pandemic was the challenge for all countries on the planet to test their capabilities since everything happened from one day to the next. Challenges regarding remote work at home, including for teachers, led each family to find a strategy to connect children, adolescents, and youth to a computer or some electronic device to receive their classes, although certainly in some cases “parents did not have the necessary knowledge to guide their children’s learning, which is why some decided to withdraw them from the educational institution.” [33, p. 149]. Other challenges included attending to the home in terms of finding entertainment strategies for adults and children and trying to maintain calm and mental balance.

On the other hand, students at the end of their virtual school day would ask, “What’s the next activity?” or “What do I do now?” This situation undoubtedly tested the resourcefulness of parents, grandparents, siblings, and generally the entire family group to invent countless activities. In fact, the confinement allowed us to value and appreciate how happy we were with little or much, such as going to a park or eating ice cream with friends or family.

Moreover, the lockdown meant that every day was the same, turning into monotonous, boring days with long work hours that were exhausting, and then the same routine the next day; undoubtedly, “if the recent pandemic reminded us of anything [...] it has been that nothing is permanent and that the constant in our times is change, contingency, chance” [34, p. 508]. Indeed, those were very complicated times for all ages, but it can be said that it left us with resilience and many lessons to apply in the new reality.

Another aspect that was significantly highlighted by the COVID-19 pandemic was inequality, social gaps, racism, and other issues that continue to exist and create greater inequities.

Similarly, education was affected, as it is known that since

Before COVID-19, the world was already facing a learning crisis [...] 258 million children and young people of school age were out of school. Low educational quality meant that many of the children who were in school learned too little. The learning poverty rate in low- and middle-income countries was 53%, meaning that more than half of the children aged 10 could not read and understand a simple story appropriate for their age. [35, p. 15]

Certainly, educational conditions that already existed were highlighted by the pandemic, which also increased limitations; for example, not all children and young people have the financial resources to own an electronic device, and if they do, many lack connectivity. This means that “The existing inequities in the educational system disable the development of solid and stable learning experiences over time” [36, p. 13]. Thus, different countries faced “the challenge of massively raising educational goals for everyone” [32, p. 24] and in this way try to extend them, developing and planning “sensible strategies for educational change that help students acquire the range of skills needed in a rapidly changing world” [32, p. 24]. But any alternative response for solution and/or improvement falls short or fails if it is not applied in practice and contextually, and if it also



does not take into account that the “student is the true protagonist and center of interest of the educational action” [37, p. 147], but also that it is necessary “to respect the different interests and learning paces, and to value progress on the journey made according to personal possibilities” [37, p. 147].

### **Teachers as the central axis in education**

In every educational process, various subjects influence or are part of it, and there is no doubt that teachers are a fundamental axis in the student’s education considering that the teacher’s relationship is not only with their students and the content addressed in educational institutions, the school as part of a social context enables a multipurpose action where the teacher consolidates their contribution to society and the different capitals that are part of it [38, pp. 8-9].

In reality, teachers not only teach in classrooms but also carry out various cross-curricular actions that contribute to society, as they actively participate in the education of students by instilling cooperation, coexistence, autonomy, and well-being. In other words,

The teacher’s ability is increasingly recognized as the key to the success of these efforts to better prepare students for a world in which they will face greater demands regarding their knowledge and skills. [32, p.42]

Thus, it can be affirmed that teachers have a social mandate and, consequently, must teach and effectively prepare students to face this changing world with cognitive, attitudinal, and procedural competencies; in short, a teacher aware that in this

21st century in which we live, a time when it is essential to assume the responsibility that as educators, immersed in the reality of education, we must bring out the best in students, accompany them along their formative journey, listening to and understanding them so that they grow and flourish as autonomous individuals who will integrate into society at the end of their institutional education. [39, p. 444]

It is also essential to point out the continuous training of the teacher, as it is indeed important to promote and support their professionalization and improvement for the updating of their knowledge and skills with the purpose of

continuously surprising their students, so they will always attend motivated and eager to discover what new things they will learn each day [...] the great adventure that knowledge and lifelong learning represent, not exclusively the necessary to study a career and access a job. [37, pp. 140-141]

In this context, it must be said that the COVID-19 pandemic also led teachers to think and gradually overcome.

the challenge of reinventing and relearning, and the path to achieve this transformation is by becoming familiar with technology in its variety of platforms and applications, as well as having technical competencies in the management of ICTs. Only then can virtual environments generate trust for the teaching and learning process of our future generations. [40, p. 98]

However, the management or mastery of technological platforms must be accompanied by modern and creative learning strategies that stimulate the student, for example, challenge and game strategies, also called gamification, which in the words of [41, p. 114], is referred to as “a powerful tool to help motivate students in class and thereby facilitate the teaching-learning process.” Indeed, games are attractive and involve several senses because they are visual, auditory, and require interaction, in addition to that, they allow replaying, which gives the freedom and autonomy to learn from mistakes and becomes another way to acquire individual and group knowledge in a fun way.

The educational institution is the place where students spend the most time, and therefore teachers become an influential being in their lives, which is why they must continuously encourage the student in areas such as research, innovation, and entrepreneurship, because, as [42, p.47] states, “teaching is not transferring knowledge, but creating the possibilities for its own production or construction.” Indeed, it is worth saying that teachers are passionate about their work, in some cases, poorly paid; but their best reward is to see how their

students progress because they have motivated them to be curious, creative, to generate critical thinking in everyone, being autonomous, but at the same time with values of solidarity and coexistence.

From another point of view, many teachers were trained with a “traditional training scheme and far from the current reality. The modes of learning were different, as previously everything was noted on paper. Paper books were used, and that was perhaps the primary source of information.” [43, p.66], hence “educational policies related to digital technology prioritized, in the first instance, the training of teachers with the arrival of the first digital resources” [44, p. 100]. However, some teachers resist introducing new trends in the classroom, while others, on the contrary, wish to use technological advances, and although “they do not know where and when these advances occur [...] they often express the hope that something will be invented that contributes to their work in the classrooms.” [43, p. 66]

It is clear that children and young people learn differently, so teaching and learning processes must be developed with modern strategies that align with the new generations. But “it’s not just about teaching on platforms, it’s also necessary to redesign, plan, and reconsider assessments” [44, p. 93]. Based on this, it can be said that well-used technological tools facilitate teaching a class and leading the student to experiential learning, as expressed [44, p. 94],

Today it matters to learn and teach through digital tools, but also to go beyond the adaptation of pre-established pedagogical proposals. It’s not about using technology to do more of the same, but to carry out different pedagogical activities that would not be possible without technology.

Consistent with the new didactic demands supported by technology is assessment, as obviously, one cannot evaluate in the traditional way with innovative methodological approaches; the multiple evaluative forms must also be intervened; for this, an integral perspective is necessary, especially because one cannot forget socio-emotional learning since “they allow a person to act with autonomy, creativity, critical judgment, responsibility, and above all, solidarity with others, which can crystallize a longed-for alterity” [36, p.17]. Thus, teachers have the challenge and the task of moving towards an equitable and responsible society through inclusive education that has a place for all the diverse subjects of communities.



Figure 3. Learning path to achieve competencies. (Self-made)

### III. CONCLUSION

The new technological trends are just the tip of the iceberg, we do not know that more advances are to come and that future is very close, but what is relevant is to educate and use them in favor with the purpose of streamlining processes, activities, improvement of teaching and learning techniques, the use of these is not bad, but what should lead to reflect is to motivate young people to strengthen their knowledge, because this is infinite and can transform thinking.

In the different educational environments, it can be seen that learning is shared and that others are needed to learn to coexist in society, to accept others with their physical or mental conditions, and together to appropriate knowledge to take the first steps for social transformation; because education transforms the world and society, however, this requires the interrelated intervention of all actors, especially the national government to allocate resources to the education sector in an equitable manner.

The success of all educational efforts depends significantly on the educators, since their quality and professionalism is reflected in the students. The fact is that "educating is not an easy task, that is why education above all is an art" [37, p. 149]; therefore, teachers need to be empowered and passionate about their work, but their work needs to be valued. It is also important to bear in mind that the pandemic left lessons learned and resources in place, but this is not enough because they must be put into practice and continue to improve, following up conscientiously in order for the education sector to move forward. Consequently, this should be reflected in the students because ultimately they will be the builders of a better country, of a better society.

### REFERENCES

- [1] V. Gabarda Méndez, J. Peirats Chacón, M. M. Romero Rodrigo, and J. L. Muñoz Moreno, "Digital competence in future teachers: an innovation project," in M. Sánchez (Coord.), *In digital: experiences and reflections for the use of technology in education*, Dykinson, 2023, pp. 463-474.
- [2] M.-C. Caldeiro-Pedreira, C. Sarceda-Gorgoso, O. Santamaría-Queiruga, and I. Aguaded, "Technodigital: a theoretical approach to its opportunities and challenges in higher education," in G. Sarceda et al. (eds.), *Training and educational innovation: axes for social transformation*, Dykinson, 2023, pp. 103-121.
- [3] J. J. Rodríguez and N. A. Rúa, "Scenarios of higher education before, during, and after the crisis caused by COVID-19. Nothing is forever," Medellín: Jaime Isaza Cadavid Colombian Polytechnic Editorial Fund, 2020.
- [4] L. Olivé, "For an authentic interculturality based on the recognition of epistemological plurality," in *Epistemological Plurality*, ed. Muela del Diablo, 2009.
- [5] E. Morin, "The epistemology of complexity," in *The intelligence of complexity*, ed. L'Harmattan, 1999, pp. 43-77.
- [6] K. Pinargote and A. Cevallos, "The use and abuse of new technologies in the educational area," *Scientific Journal Domain of Sciences*, vol. 6, no. 3, 2020. [Online]. Available: <https://dialnet.unirioja.es/servlet/articulo?codigo=7539716>
- [7] A. González, "Use of information technology and its impact on health," *Community and Health. Epidemiology in Action*, 2021. [Online]. Available: <http://servicio.bc.uc.edu.ve/fcs/cysv19n1/art08.pdf>
- [8] N. Suárez, "The economy of the like: most people in Colombia would be interested in being 'influencers'," *El Colombiano*, 07-Feb-2023. [Online]. Available: <https://www.elcolombiano.com/tecnologia/las-carreras-mas-buscadas-en-colombia-influenciadores-MH20279984>
- [9] B. Santos, "Pedagogy of the oppressed, participatory action research, and the epistemologies of the south," Trotta, 2021.
- [10] M. J. García San Martín, "What competencies contribute to greater school success in an increasingly digitalized environment?," in *Digital teaching competence for educational transformation*, OEI, 2023, pp. 55-90. [Online]. Available: <https://oei.int/oficinas/secretaria-general/publicaciones/competencia-digital-docente-para-la-transformacion-educativa>
- [11] D. Giraldo Arroyave, "Seminar guide for research line III: critical studies on education and curriculum," *Doctorate in Educational Sciences*, University of San Buenaventura, 2023. [Support document for didactic purposes exclusively for internal circulation].
- [12] D. I. Arroyave Giraldo, "From the conception of the sciences of education: two traditions," in *Multireferential studies on education and curriculum: proposals in a global context*, Bonaventuriana Publishing, 2022.
- [13] M. A. Barrero Cruz and D. I. Arroyave Giraldo, "Educating from the paradox: a challenge in a context where the most stable thing is change," in *Multireferential Studies on Education and Curriculum. Readings from complexity*, Bonaventuriana Publishing, 2020, p. 120. [Online]. Available: [https://www.academia.edu/45673750/ESTUDIOS\\_MULTIRREFERENCIALES\\_SOBRE\\_EDUCACION\\_Y\\_CURR%C3%93N\\_Y\\_CURR%C3%8DCULO](https://www.academia.edu/45673750/ESTUDIOS_MULTIRREFERENCIALES_SOBRE_EDUCACION_Y_CURR%C3%93N_Y_CURR%C3%8DCULO)
- [14] M. Fernández-Enguita, "Digital teaching competence for the fifth educational transformation," in *Digital teaching competence for educational transformation*, OEI, 2023, pp. 9-54. [Online]. Available: <https://oei.int/oficinas/secretaria-general/publicaciones/competencia-digital-docente-para-la-transformacion-educativa>
- [15] M. E. Rumiche and B. Solís, "The positive and negative effects of the use of Information and Communication Technologies in education," *Hamut'ay*, 2021. [Online]. Available: <https://revistas.uap.edu.pe/ojs/index.php/HAMUT/article/view/2233>
- [16] B. Fernández Massara, "From virtual education to face-to-face: the issue of inclusion in higher education," in R. Cabello and S. Lago Martínez (Eds.), *Culture, citizenship, and education in the digital environment*, CLACSO, 2023, pp. 229-241.
- [17] M. López and M. Payá Gómez, "Educating to transform the world. Innovation and difference for an education for all and by all," *Librum*, 2019.
- [18] A. C. Hecht, "Courses of indigenous languages in schooling: the paradox of Bilingual Intercultural Education and linguistic displacement," in *Indigenous Peoples and Education*, no. 66, Abya Yala University Press, 2019. [Online]. Available: <https://abyayala.org.ec/producto/pueblos-indigenas-y-educacion-no-66/>

- [19] V. Martín Solbes and E. Villa Merino, "Gender equality and social/educational pedagogy: an ontological encounter," in *Gender, Education, and Coexistence*, J. J. Leiva Olivencia, V. M. Martín Solbes, E. S. Villa Merino, and J. E. Sierra Nieto, eds., Madrid: Dykinson Publishing, 2015.
- [20] U. Oberst and J. Azkarraga, "Thirst for power. Society, mental health, and education from a current perspective of Alfred Adler," Herder, 2023.
- [21] National Ministry of Education, "National Ten-Year Education Plan 2016 - 2026. The path towards quality and equity," Bogotá, 2017. [Online]. Available: [https://siteal.iiep.unesco.org/sites/default/files/sit\\_accion\\_files/siteal\\_colombia\\_0404.pdf](https://siteal.iiep.unesco.org/sites/default/files/sit_accion_files/siteal_colombia_0404.pdf)
- [22] A. F. Lalinde and D. Arroyave, (2022). Behind the challenges of intercultural education in Colombia. Index. *Journal of Education of Nicaragua*. <https://revistaindice.cnu.edu.ni/index.php/indice/article/view/119>
- [23] J. L. Suárez, *The Digital Condition*, Trotta, 2023.
- [24] Saldarriaga Concha Foundation and Education Economy Laboratory-LEE, University (2023). "Education in Colombia for people with disabilities: realities and challenges." Bogotá D.C. [Online]. Available: [https://www.saldarriagaconcha.org/wp-content/uploads/2023/03/2023-03-Marzo-EducacionCOParaPersonasConDiscapacidad\\_RealidadesyRetos.pdf](https://www.saldarriagaconcha.org/wp-content/uploads/2023/03/2023-03-Marzo-EducacionCOParaPersonasConDiscapacidad_RealidadesyRetos.pdf)
- [25] D. Arroyave Giraldo, "Institutional support as an educational action towards inclusive environments," in *Multireferential studies on education and curriculum in an inclusive key*, Bonaventuriana, 2021.
- [26] D. Ruiz Hidalgo and D. Ortega Sánchez, "Project-based learning: a systematic review of the literature (2015-2022)," *HUMAN REVIEW. International Humanities Review / International Journal of Humanities*, 2022. [Online]. DOI: 10.37467/revhuman.v11.4181
- [27] Federico Lorenz (2019). *In Praise of Teaching. How to keep the flame alive*. Paidós
- [28] Á. Rivera Sepúlveda, "Rural school and citizenship building," in *Rural school and citizenship building. Itineraries of a school ethnography*, 2019.
- [29] W. Acosta Valdeleón and N. C. Ángel Pardo, "Leadership in rural education with a territorial approach," University of La Salle, 2020.
- [30] N. González, "Education and forced displacement: communities of practice in the Colombian community context," in M. Gutiérrez Quevedo and A. Olarte Delgado (eds.), *Unesco Chair. Human rights and violence: Government and governance: Forced displacement: analysis for the prevention and restoration of broken social bonds*. [Online]. Available: <https://books.openedition.org/uec/3553>
- [31] C. Villamayor, "Radios and educational continuity in the context of social isolation. Survey, diagnosis, and guidelines to rethink communication, education, and connectivity in Argentina," in F. Peirano et al. (Eds.), *PISAC COVID-19: Argentine society in the post-pandemic: volume III: Health and gender*. Education, CLACSO, 2023, pp. 373-441.
- [32] F. M. Reimers, "In search of a renaissance of education in the 21st century after a global pandemic," in *EDUCATIONAL REFORMS OF THE 21ST CENTURY FOR DEEPER LEARNING. An international perspective*, ed. Narcea, 2021, pp. 15-76.
- [33] E. M. Guerrero-Casquete, E. V. Chilinguina-Campos, L. D. Velasco-Almachi, and A. G. Pimbo-Tibán, "Education in the rural sector during the Covid-19 pandemic," *UISRAEL Scientific Journal*, vol. 10, no. 2, pp. 143-154, 2023. DOI: 10.35290/rcui.v10n2.2023.757
- [34] A. Altamiro Román, J. Osorio González, and R. Torres Carrasco, "Considerations for the integration of a teacher training and development program in Higher Education Institutions (IES)," in Sánchez et al., (Eds.), *Teacher Training in Universities*, UNAM, Open University Coordination, Educational Innovation and Distance Education, 2023, pp. 507-517.
- [35] A. Enriquez and C. Sáenz, "First lessons and challenges of the COVID-19 pandemic for the SICA countries," series *Studies and Perspectives-Subregional Headquarters of ECLAC in Mexico*, 2021. [Online]. Available: [https://repositorio.cepal.org/bitstream/handle/11362/46802/1/S2100201\\_es.pdf](https://repositorio.cepal.org/bitstream/handle/11362/46802/1/S2100201_es.pdf)
- [36] H. Renna Gallano, "Transforming ourselves. Framework for educational transformation based on socio-emotional learning in Latin America and the Caribbean," *United Nations Educational, Scientific and Cultural Organization (OREALC/UNESCO)*, 2022. [Online]. Available: <https://unesdoc.unesco.org/ark:/48223/pf0000383816>
- [37] A. Jiménez Hernández, "The challenges of the post-Covid school," in *The Challenged School*, Ed. Dykinson, 2021.
- [38] N. E. Montoya Grisales and D. I. Arroyave Giraldo, "Pedagogical practice as the foundation of being a teacher," *Current Pedagogical Issues*, no. 79, 2023. DOI: 10.19052/ap.vol1.iss79.4
- [39] L. Equihua Zamora, "Education based on complexity," in Sánchez et al., (Eds.), *Teacher Training in Universities*, UNAM, Open University Coordination, Educational Innovation and Distance Education, 2023, pp. 443-456.
- [40] M. D. Guzmán, E. J. Albornoz, and R. Alvarado, "Didactics in virtual learning environments," *Metropolitan Journal of Applied Sciences*, vol. 5, no. 1, pp. 96-102, 2022. [Online]. Available: <https://remca.umet.edu.ec/index.php/REMCA/article/view/474/489>
- [41] M. Parra Gonzalez and A. Segura Robles, "Scientific production on gamification in education: a scientometric analysis," *Journal of Education*, pp. 113-135, 2019. [Online]. Available: <https://www.educacionyfp.gob.es/dam/jcr:ab346c1a-db2e-4b30-9946-c3fd31d49268/05parraesp-ingl.pdf>
- [42] P. Freire, *Pedagogy of Autonomy. Necessary knowledge for educational practice*, translated by G. Palacios, Twenty-First Century Publishers, 1997.
- [43] M. Valverde Alcívar, A. Nivela Cornejo, and J. G. Espinosa Izquierdo, "Teachers and students, the digital generational gap," *spirales Multidisciplinary Research Journal*, vol. 1, no. 7, 2018. [Online]. Available: <https://www.revistaespirales.com/index.php/es/article/view/228>
- [44] D. Vaillant, "Teacher training in digital technology scenarios: context and perspectives," in *Digital Teaching Competence for Educational Transformation*, Organization of Ibero-American States for Education, Science, and Culture, 2023, pp. 91-116.