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A Journey Through Innovation and Its Importance in Education

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Abstract: The following article makes a general presentation on the meaning of the word "innovation", this being a constant in the history of humanity, expressing the idea of the new or the transformation into novelty of what already exists. He mentions what is thought about innovation in education and the importance that this concept has had and currently has in this context: education, as with the passage of time it has become a workhorse to generate strategies, modes and alternatives to improve teaching-learning processes. Likewise, it presents the pillars of innovation in education, namely: the quality of the teaching staff - who are cataloged as facilitators of new experiences - changes in school management and the educational model, constant internal review, construction of citizenship, diversity and sustainability over time. Finally, the article refers to the great importance of the actors-protagonists in education: students and teachers, emphasizing that the latter falls on the most important of the tasks to seek and apply innovative alternatives in the classroom at all times in order to generate changes of vital importance in the children and young people of today's society, that are lasting over time and that generate a positive impact in each of their lives.

Keywords: Innovation, Change, Education, Technology, Strategies, School Practices, TIC'S

1. Introduction

The concept of innovation is not new in the educational discourse, since it was already being discussed in the 70's, but as time has passed by, it has become very popular, it is mentioned a lot and it is increasingly framed in the field of technology.

As mentioned by Barraza Macias Arturo, in his 2005 article "A comprehensive conceptualization of educational innovation" "this apparent omnipresence of the term in question has not been accompanied by a theoretical evolution of the concept that expands the limits of its meaning; on the contrary, it can be observed that its meaning runs the risk of suffering a reduction by remaining, at times, circumscribed to technological innovation" [1].

On the other hand, for Martínez Bonefe, Jaume 2008, innovation is like "the desire that moves teachers to try to improve their practice" [2].

From this point of view, innovation is subject to the will of an individual who is tied to the educational policies of a country that is not interested in investing in the educational field.

But for a society to advance culturally, socially and economically, education must be encouraged and it must be from early childhood, through primary, secondary, middle and university levels, "education and competitiveness are inseparable and interdependent allies" Guerra, Silva Harold 2017. "Innovation and education key variables for the competitiveness of companies" [3].

For Professor Alejandro Murillo, "The world is changing in an increasingly accelerated manner and education is not the exception. The speed required to respond to new challenges in the education sector forces the institutions to be better informed about trends in order to anticipate changes and stay one step ahead [4].

Let's start by defining what innovation is, why is it so important for education and why is it everyone's task? To innovate is to be immersed in the new, in the new, or in the forefront. In fact, the word innovation is etymologically composed of several Latin words, the central ones being in,

"between" or "inside", and novus, "new" [5].

Innovation is a constant in human history. From the earliest times, human beings have sought to create new tools, acquire new knowledge or improve what they already have applying his ingenuity and, of course, his most urgent needs [6].

Taking into account these concepts, the field of education has been no stranger to the questioning of this topic so we find references such as the following, which draw our attention not only at the level of school practices, but also go further, stating that Innovation in education refers to a complete change in the vision of those who manage state educational policies, "In this way, the concept of innovation will appear related to these three uses: the creation of something unknown, the perception of what has been created as something new and the assimilation of that something as innovative. Educational innovation appears much more closely linked to the last two uses, for example, the use of group work as a teaching strategy and the use of new information and communication technologies, respectively.

Change always implies an alteration, a transformation of an object, a reality, a practice or an educational situation. For this reason, in the case of educational innovation, change is considered to be the cause and the end of an innovation, this means, we innovate to generate change.

2. What About Innovation in the Classroom

Having clarified that educational innovation is a current need, we will then focus on what is happening in the classroom in this regard.

"Many of the changes our education systems need do not involve the use of great technologies".

"However, neither does the use of technology necessarily imply innovation nor does all innovation in education require it. Nor does the use of technology by itself translate into improved learning"

An example of this is when a mobile device is used in the same way that a blackboard and chalk have traditionally been used. We cannot forget that it is human beings who interact with technology, and through it, who decide its use and usefulness". "Innovating in education implies having clear objectives about what we want to teach, how we want to teach it and for what purpose, and then consider the changes we need to make to achieve these goals. To innovate in education is, above all, to substantially improve the quality of life of people through the full development of their capabilities.

Higher Education in Latin America As Francesc Pedró, director of Unesco's International Institute for Higher Education in Latin America and the Caribbean (IESALC) points out´: ´´Is innovative and adds value to the learning process, of individuals entering an educational institution that can generate, provoke and stimulate real agents of change in society, going beyond a simple adaptation of school practices.

Innovation in the classroom has 6 fundamental aspects, characteristics that are shared by the projects that are carried out in different countries at international levels and that provide key factors to raise awareness of this topic in the field of education, following the practical experiences of the Hundred Global collection.

The student is the center of the system. This is a recurring feature in the history of pedagogical innovation, which seems to have ceased to play a "secondary role" in our decade to become the key axis of educational systems (at least on the theoretical level of educational policies).

Contrary to the traditional teaching system in which the student is a simple passive receiver of information, in these educational proposals the student is placed at the center of the whole process.

Their characteristics, their abilities, their context and their educational needs are the basis from which their own learning is designed. The student is involved and assumes an active role in his own education. They decide on what, how and when.

Teachers become mediators and designers of experiences. In all innovations, the teacher plays a fundamental role; but it is a very different role from the one maintained in the traditional conception of learning. The teacher becomes a mediator between knowledge and the student: he guides and help them taking ownership of the learning process; he also designs, develops and proposes activities that help his students to carry out their self-learning process.

Technology complements and helps but does not replace. New technologies are conceived as a valuable and fundamental support, but never as a substitute for the teacher's role in the classroom.

Also the role of the teacher becomes even more important since they must, on the one hand, "hybridize" their pedagogical and didactic performance with technology in order to increase its effectiveness; and on the other hand, to guide their students in the correct use of these new technologies.

Collaboration. Already between students, between teacher and student, or including families and communities, cooperation collaboration, in many ways, are essential to the success of the program is of special relevance in educational innovation projects. It´s clear that today's society requires (and will increasingly require) the collaboration of everyone to face great challenges, In addition, teamwork isn't just a skill to be learned per se, it contributes to the development of other important skills, such as responsibility, empathy, interdependence, and critical thinking.

New contents/new competencies: There seems to be a general consensus that a comprehensive education at this point in the century must necessarily include the development of a series of skills that help learners to live in a complex and changing society. Purely academic expertise is not enough anymore.

The need to teach these skills is an educational innovation in itself However, they are also new skills, contents and capabilities that require new teaching methods and processes.

Because, can anyone imagine how to teach something like empathy or perseverance with a traditional model in which the teacher talks without looking and the students listen

without paying attention or understanding?

The importance of context: The socio-cultural and local context in which teaching takes place is also of fundamental importance in all educational innovation projects and it must be so: the environment in which a person lives and develops has to be part of his or her education and learning process. This relationship with the context can (and should) take place in several ways: for example, to design learning appropriate to the context of each student; to use that context as the object of study; or to involve the community and families in the education of their students [7].

The teacher and researcher Berenice Pacheco (2020) offers us, as a complement to these characteristics, 7 pillars for innovation in the classroom:

1. The quality of the teaching staff.
2. Innovation is possible and becomes sustainable if there are changes in school management.
3. The critical review of the interior of the school itself.
4. 4 Innovation implies a radical transformation of the educational model.
5. Diversity.
6. Every learning process requires time in order to be meaningful, deep and lasting. To innovate is to build citizenship.
7. The most effective educational innovation is the one that begins now and is assumed as a sustained practice over time, always focused on improving the learning of our students and on forming a critical and supportive citizenship. Because it is only possible to be innovative by innovating [8].

And here is where we ask ourselves, bearing in mind that the first pillar of which Pacheco speaks, is the teaching staff.

Which is the role of teachers in this context? PereMarqués, Director at Red of Educadores DIM-EDU (Didactics, Innovation, Multimedia), is certain that the role of teachers must be active and committed. The key to success is for teachers to perceive innovation as a "necessary, easy, useful and efficient element" [9].

Teachers are the fundamental actors in the implementation of any change in educational processes.

Even if public policies or educational innovations are conceived in the best possible way, this in no way supplants the capacity or the will of the individuals in charge of putting them into practice.

(IDB, 2018). In this context, we will consider the importance of educators and their training.

The literature review shows that the challenges facing societies and economies place education at the center of the debate and teachers as the key actors in this debate. The educators are increasingly recognized as the main actors in the efforts to achieve better results in the quality of education. From the study of successful educational systems, Barber and Mourshed, note: "The highest performing systems demonstrate that the quality of an educational system ultimately depends on the quality of their teachers." [10]. (p. 39). They emphasize that these systems give importance to three aspects, which are: (a) Finding the most suitable people to teach; (b) Training them with high academic standards and innovative approaches to become effective educators; (c) Improve their living and working conditions in order to keep them in the educational system [11].

3. What About Everything Exposed So Far in the Colombian Educational System

There are countless programs in the different education secretariats of the different departments and cities of the country, sponsored by the Ministry of National Education, and in this regard we present two examples that summarize how this process is understood.

Para tener en cuenta...

Aunque **el uso de las tecnologías digitales sí posibilita cambios** en la gestión escolar y prácticas pedagógicas, no es un requisito indispensable.

La innovación educativa no depende del acceso a herramientas tecnológicas o digitales, depende de los problemas, los retos, las capacidades institucionales, las condiciones de implementación y en el contexto en el que se desarrolla.

Fuente: Orientaciones para el fomento de la innovación educativa como estrategia de desarrollo escolar [Documento en construcción]. Oficina de Innovación con Uso de Nuevas Tecnologías, MEN, 2020.

Figure 1. Infographic how to innovate in educational processes, 2020 [12].

There is an interest in teacher training and although this infographic shows that educational innovation doesn't depend on the use of technology in the classroom, many of the training programs have focused on acquiring skills in the use of different technological tools.

Figure 2. How to innovate in education, 2020.

We have been conducting virtual training for teachers and people interested in innovation topics such as the Stem route, programming in blocks Code.org and Scratch as well as programming for children from the Ministry of ICT with alliances, so that knowledge transfer takes place in the classrooms. More than 5,000 teachers from both the public and private sectors have been trained in both the the public and private sectors.

"A look at the different possibilities for educational innovation would not be complete without a mention of maker culture, a methodology that brings together project-based learning and STEM disciplines in a hands-on, collaborative way.

Initiatives such as bMaker (in Spanish, "Sé un creador"), from BQ Education and MacMillan Education, allow primary and secondary school students to work not only on computational thinking, robotics, programming, artificial intelligence or 3D design, but also on skills and competencies such as creativity and teamwork, through extracurricular activities or those incorporated into the school's curriculum.

"On a technical level, they are developing their technological and digital skills by working on different technologies in a practical and motivating way." according to Alberto Valero, director of BQ. Activities that, he says, cause a domino effect on the rest of the subjects, as they have detected "an improvement in their academic results in general, because the feeling of being able to create their own inventions from scratch contributes to improving their self-perception" [13].

At the present time, it can be said that most of this innovation goes hand by hand with ICTs, and the use of ICTs in the classroom has become of a vital importance.

Since the beginning in the educational context, we have been looking for ways to make the best use of it. A misguided technological tool in this context can cause effects contrary to what is expected with its benefits.

There are several strategies to take advantage of these tools, and there is increasing interest and motivation on the part of teachers to access training and courses that allow them to have a better performance when using these tools in the classroom and implement innovative alternatives.

Although there are also disadvantages, since these training's leave out early childhood, and the fact that most of the educational institutions and their headquarters do not have updated equipment in the classrooms, if at all, there is a computer room or a technology room, isn´t known.

This is precisely the moment when an investment in education is needed more than ever, an investment that will allow students to have access to quality technological tools and, when required, to have access to the latest technology access to internet and optimal connectivity must necessarily be technological, but it does greatly benefit the educational process.

Because, these efforts are of no use as education expert G. Myamesheva says in his article "Informatization of Education in Kazakhstan: New Challenges and Further Development of Scientific Schools", it would be of little use if teaching processes and techniques were the same as always, but with new supports.

To conclude our personal comments, the innovation task that summons us with a creative, conciliatory thinking, close to the social and emotional reality of our students.

Our reality in the classroom goes beyond whether we want and are required to innovate or not, it is our task to create meaningful experiences that enable our students to face a violent and harsh world with the tools of critical, reflective, creative and constructive thinking, our task is to educate agents of change, renovators, writers of a new history of the country and the world.

At the present time, after experiencing diverse situations that appear in the day to day and more in the educational field, seeing it from the perspective of teaching; the need arises for us to look for other alternatives that help to minimize the difficulties that appear in the teaching-learning process, great difficulties that we face as the negative consequences that arise when returning after the virtual education in primary school students because of the confinement by the pandemic (2020-2021).

We are living a great diversity of challenges that many people still do not manage to dimension and imagine. And behind this, a great number of educators are thinking about how to go further in our work, transcend in this educational process and think about applying multiple innovation strategies.in order to improve processes and obtain better results, the most important of these is that children and young people believe in themselves and their abilities, manage their emotions and establish creative solutions to the different problems they face on a daily basis.
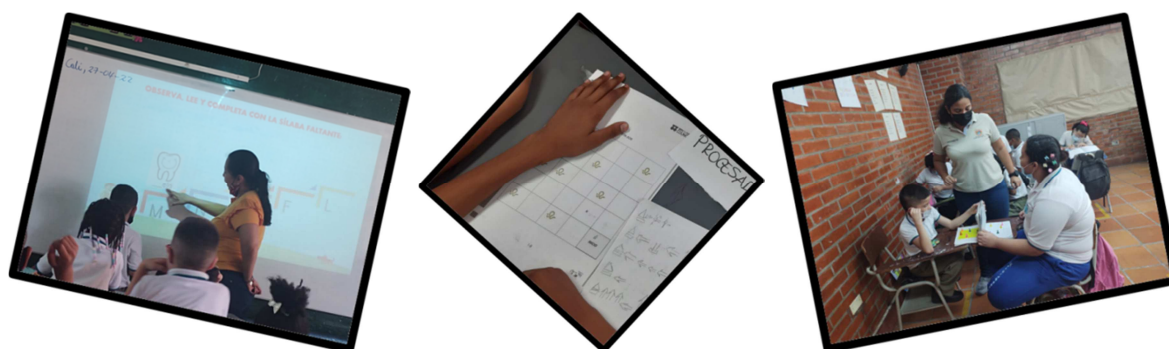
Figure 3. How to innovate in education, 2020.

4. Conclusions

Innovation is a constant in human history, it tells us about what we is new or how can create strategies to strengthen what has already been created in new ways. That is why this topic is so valuable in education, since it refers to a whole change in the vision of the Teaching and Learning processes. This article allowed us to take a tour of the conceptualization of the term innovation and how it is currently related to education, where we are protagonists as teachers and we have an important role in generating change. Innovation is based on learning, insofar as it is linked to the transforming action of the world.

Finally, we find ourselves with the great task of being mediators and designers of experiences with creative, conciliatory thinking and close to the social and emotional reality of our students.

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