

## Creativity at the Heart of Learning

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### Abstract

*The aim of this article is to introduce creativity as a problem of personal development and society in the 21st century. Creativity can be seen as a skill. It is a quality and an asset that strengthens self-esteem. Creativity is an acquired behavior - one that can be learned, taught, tangible and crucial to human development. Creative activities result in the generation of original productions, whose societal benefits can be considerable. From scientific discoveries to cultural creations, including all the transformations in the daily life of individuals, these activities are crucial for adapting human beings to their environment and, conversely, for adapting the environment to capabilities and limits as well as the human level. One of the current challenges of our society is, moreover, to meet the growing needs of creativity and innovation. Thus, the professional world is increasingly looking for creative, flexible and competent individuals, able to perform complex tasks without predetermined procedures*

**Key words:** creativity, communication, personal development, organization, collaboration

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### 1. Introduction

Creativity is a skill considered essential in the 21st century. Training designers and educators at all levels of education are increasingly wondering how to integrate it into learning activities. Creativity aims to create a new, innovative, relevant, valuable solution that demonstrates elegance over an initial problematic situation. Creativity is often seen as an individual quality, which can manifest both during the process and through the product of the creative process. If each individual has a different developed creative ability and has a different creative potential, the fact remains that all students can exploit their creative potential to develop their creativity. Creativity must therefore be analysed in particular. However, in situations where students encounter difficulties that require cooperation and creativity, then creativity becomes a social process.

The use of limited resources for creation establishes a framework that leads the learner to engage in a creative process. To optimally achieve this need, the student must explore, during the creative process, several new solutions to a problem, guide his reasoning and, finally, select a solution taking into account the context of the situational problem.

### 2. Literature review

According to Article 29 of the Convention on the Rights of the Child, creativity is essential for "the flowering of the child's personality and the development of his or her mental and physical gifts and abilities, to the fullest extent of his or her potential" (United Nations General Assembly, 1989). Therefore, beyond the development of children's intellectual faculties, a task traditionally seen as the sole responsibility of schools (UNICEF, 2007b) becomes a rights-based rationale for educational environments to be conducive to creativity. This aspect determines the promotion of tone, playfulness and confidence, while fostering patience for differences and personal commitment. A supportive environment for the development of creativity must also include incentives from organizations and support from the working group to emphasize the social dimension of creativity.

Creativity proves to be one of the main elements that promotes the development of the ability to communicate with the outside world. In this sense, several authors agree to define it as an ability to produce something new or original adapted to the reality of various situations.

Other researchers present it as the ability to associate ideas in order to form new connections in a scientific, aesthetic or social perspective or propose the possibility of exercising divergent thinking (Guilford, 1950). Whether viewed from the angle of self-knowledge and otherness, or from the ability to give rise to ideas, creativity has no disciplinary implications and affects children as much as adults. It is an entity that is part of a learning process that promotes, among other things, the ability to make choices, to make connections about various information, to combine new elements with those of the past, to put ideas into perspective, appearing, etc. It goes without saying that the teacher who wants to develop creativity in his students must implement certain conditions, such as proposing inventive projects, showing flexibility and openness to the proposals of the participants, as well as to expressing the ideas of each, while showing a certain sense of humour. These conditions refer to the four components of the creative personality described by Guilford (1950), namely fluidity, preliminary flexibility, elaboration capacity and originality.

Dacey and Lennon (1998) also identify a greater tolerance for ambiguity as a key feature of creative people. They are able to deal with ambiguous situations without a frame of reference to guide their decisions and actions, situations where there is a lack of relevant data, where the rules are not clear and where normal procedures do not exist. Instead of asking for more details or giving up because of growing frustration, these people show their creativity by creating frames and structures.

A person who engages in a creative process does so consciously and is able to release a form of energy by trying to understand its contents (Greene, 2004). Unlike creativity, creation is open to discipline, whether it is theatre, visual arts, dance or music. By asserting uniqueness, the person exercises his creativity by engaging in an artistic experience (Dewey, 2005) and a creative process. She thus uses the resources available in her environment to represent her own vision of the world or to find inventive solutions to the problems that arise. Creativity and the creative process are therefore increasingly integrated into the learning content of teacher training in terms of cultural and emotional development of the student. Teachers who accompany students in a creative process must use sensitivity and develop a reflective posture. This is how dialogues between teachers and participants can be developed to establish a form of critical awareness and collaboration.

According to Florida (2014), creativity is a condition of contemporary socio-economic differentiation between "creative classes", which produce professions in which creativity is an overwhelming factor, and other social classes, which would face increasing precariousness in urban environments considered creative. Creativity is nowadays a new imperative for competitiveness. However, although creativity and cooperation are key factors in the 21st century (Hesse et al., 2015) and the growing differences between "creative classes" and other citizens (Florida, 2014), creativity is not viewed in present as an educational priority.

Creativity is the ability to generate, emphasize or use inventive ideas, methods and points of view (Ferrari et al., 2009), most often in a cooperative climate (Lucas and Hanson, 2015). Along with critical thinking and problem-solving skills, to which it is closely linked, creativity is a major part of reflective thinking, namely a non-chaotic, orderly and structured thinking process. Being creative is largely related to the student's cognitive abilities, including analytical and evaluative skills (Sternberg, 2006).

Creativity interferes with social and personal management skills; thus, although related to the arts, it is also a prerequisite for adaptive and innovative behaviors to find solutions to all life situations, including learning and work situations.

Creativity is related to the effectiveness of other life skills, especially: critical thinking, problem identification, problem solving, and self-management. When it comes to a renewed vision for education, creativity is relevant on two levels. First of all, it is intrinsic to the learning process of all students of all ages during the school program. Creativity is a means of creating knowledge that can support and optimize self-education, the "learning to learn" mechanism, and lifelong learning.

Thus, it is essential to promote creativity in order to improve learning processes and education systems. Secondly, the promotion of creativity in educational settings and not only helps children, young people and other students to discover their resources in several disciplines and fields, while developing their ability to think together, to have a New approach to everyday, family, health and

work situations and provide constructive suggestions. Recurring in national documents, creativity and acquired skills, such as promotional thinking, cooperation and self-efficacy, retain their value throughout life. For these aspects, psychologists, such as Vygotsky and Guilford, have argued since the 1950s the importance of creativity by encouraging children's creative development to train them for a changing perspective which, in turn, is a priority because children and young people live in particularly complex environments.

Encouraging creativity by integrating new teaching techniques and building safe educational environments could thus support an overall improvement in school performance, while teaching learners to demonstrate an innovative spirit in life and the world of work. Creativity is amplified from the potential stage to the actual stage as children grow; it is therefore necessary to start encouraging her from an early age. Successful efforts have been made to increase children's creativity by encouraging them to learn simulation game skills. Other success factors include:

- Using initiatives so that children can identify what they like and develop their talents and skills;
- A climate that does not inspire fear in children to express unconventional ideas, in which daily acts of creativity are strengthened and the ability to solve problems independently is encouraged.

### **3. Research methodology**

The problem with this research is: How does creativity promote learning? What kind of environment can the teacher build so that emotions are a lever for learning and not an obstacle? Beyond the issue of educational language policies, this empirical research has made it possible to test a possible way of teaching action that promotes the emergence of emotions that facilitate learning through the creative process. The observation made in this research is part of a qualitative typology. From a methodological point of view, Snyder (2019) argues that a study of the literature is an excellent approach to synthesize progress and results in a meta-discipline. After him, but also after Wong et al. (2013), semi-systematic research or narrative review approach (semi-systematic approach or narrative review approach) are interesting when a topic has been worked on by researchers from different disciplines, but can be an obstacle to a complete review system. This justifies our choice to identify and synthesize some of the potentially relevant studies in terms of creativity at different school levels: primary, secondary, pre-university, university, and other systems. We thus want to make an inventory of the degree of advancement of research on creativity in scientific studies in the sciences of education.

This article is based on a two-part semi-systematic research:

- a study on the knowledge mobilized
- a study of the definitions, theories and models underlying creative journals.

We analyse the theoretical context (subjects and levels of education) as well as the mobilized knowledge.

### **4. Results**

#### **Creativity, an educational and social issue**

Creativity in education is a complex concept that should not be reduced to divergent thinking. Creativity is an ability by which subjects demonstrate their ability, individually or as a team, to develop a process of designing a solution adapted to the context of the situational problem and considered new, relevant by a reference group. Creativity is therefore subjective and contextual in nature, as it is defined in relation to the relationship between the context, the creative subject and the reference group that judges creativity. A solution produced by schoolchildren and considered creative by teachers may not be seen as creative in another context and experienced by other subjects. Thus, students can be creative when creating new musical instruments from everyday objects. These musical instruments are a solution that can be considered creative, new and relevant by teachers; however, outside the school context, this solution may not be considered creative by other reference groups. Creativity therefore has a contextual aspect and a subjective assessment by a reference group.

Beyond school, creativity is a key skill in meeting the social challenges posed by post-industrial knowledge societies. This ability is considered a key skill for both contemporary and future society.

### **Creativity at the heart of learning**

In educational circumstances, creativity was first analysed using personal actions, but also perspectives of cooperation in the context of learning that involve tasks of a certain scope. Creative processes in education can take place during individual or collaborative activities. In this second case, co-creativity combines factors related to collaborative problem solving and others related to the creative process. Thus, we consider creativity as a repeated process that can be developed both individually and through cooperation.

### **The pleasure of learning**

Loving learning is perhaps one of the best attitudes that can be developed in students. With a positive relationship with knowledge and learning, life can be an extraordinary world to explore and tame; a permanent adventure with ever-widening and deeper oceans of knowledge; a treasure trove with more access than ever to any kind of knowledge. Also, having a positive relationship with learning, students can develop passions from which to flourish throughout life. And to develop a good relationship with learning, there is nothing better than developing a creative relationship with the world.

### **The environment, the key to stimulating learning**

The learning environment is not limited to the physical space of a classroom. It can stimulate thinking and learning and can also shape learning interactions. It is the one that offers the conditions of a culture that values enriching discourse, problem solving, risk taking and stimulating learning opportunities for children. If created in collaboration with students and well designed, the learning environment can encourage children to be curious, to ask questions and to make their thinking visible in various ways, because they feel comfortable taking risks. It is important that the learning environment to be culturally, linguistically and developmentally appropriate for all learners in the community. Not only that the students participate more in their learning when they see themselves in their learning environment, but when they participate, they are able to manage their behavior and relationships with peers and adults. In this way, the learning environment can influence the child's ability to self-regulate.

A dynamic and ever-changing context requires the adaptation and modification of pedagogical approaches. The student is no longer considered as a passive receiver of the transmitted knowledge, but as an active participant in the acquisition of this knowledge. This approach requires a profound change in the teaching process and provokes the traditional hierarchical relationships between teacher and students, as well as the physical learning space.

Nowadays, the learning space needs to be flexible and dynamic in order to be able to adapt to the changing needs of the learning process.

This flexibility facilitates changes in teacher-student interaction and improves the performance of several learning methods, such as classroom teaching, learning as an equal, group learning, etc.

Space must create 'learning opportunities', ie it must facilitate research and the acquisition of knowledge and skills. The interaction between the design of physical spaces and the integration of technologies and new pedagogical methods create a more holistic perspective of the "learning-oriented design concept".

### **Creativity as a tool for educational design**

With the Corona crisis, all teachers have to improvise as distance teachers. Indeed, rather than simply applying an instruction (e.g., putting exercises online), this crisis can be seen as a great opportunity to get out of the routine, to rethink teaching, to relate to learners, to be creative. , to take advantage of all the resources available.

The Corona crisis will go down in history, among other things, because it has allowed a part of humanity to learn and work remotely on a massive scale. However, there could be an unfortunate confusion between the establishment of an emergency mediated educational practice and distance learning. In both cases, the issue of evaluation remains primarily.

The establishment of an educational practice mediated in emergency situations is characterized by the installation of solutions to continue the educational dialogue between students, teachers, institutions and other interested parties. These different actors try to face the challenge, to double their solidarity and creativity based on distance education experiences.

While creativity is more naturally associated with the arts, whether it's the visual arts or literature, it can be developed in disciplines or subjects that are not generally associated with creativity, such as history, grammar, or science. Given the concept of creative margin, creativity can be developed by studying disciplines that may seem too rigid or based on immutable laws, to allow students to be creative and potentially make them miss important content. History, for example, may seem too rigid when viewed as a mirror of the past. However, if we think of it as an interpretive discipline in which sources and testimonies serve as a ground for establishing facts and developing a deep understanding, then the process of historical research and the creative process have much in common.

#### **The creative use of digital technology for learning in the 21st century**

Based on the model of Chi and Wylie (2014), we distinguish five types of digital use in education depending on the involvement of students:

- passive consumption,
- interactive consumption,
- content creation,
- content co-creation
- participatory co-creation of knowledge.

In order to support the creative processes in education, we propose to engage the student in creative processes of knowledge construction at individual or collaborative level. These digital uses are related to content creation, content co-creation and participatory co-creation of knowledge.

Creativity will be one of the first three skills required by future employers, and the advent of digital technology in schools allows us, as professionals, to set up learning situations in which students can develop this creativity autonomously and regularly. How? In my opinion, the use of digital technology by students allows them to express their understanding of a concept using the digital tool of their choice, and the creation of the way of expressing the notion previously taught is completely personal for each of them. That is, the teacher's role is to teach the concept or notion in various ways, to clearly explain the expectations and content required in the paper so that the student can refer to it during the work sessions, to provide varied and differentiated resources for all students and finally, to provide support and supervision during the working sessions. In this perspective, the role of the student then becomes that of the creator. In other words, following the teacher's guide, the student can create a variety of digital products that reflect their understanding.

With a clear pedagogical intention, the use of digital technology in the classroom can become a powerful lever for the development of students' creativity, because it is our main mission to prepare our students for the complex life that awaits them. In the second part of the article, we will present different creative uses of digital technology, such as learning creative programming, educational approaches of creators and educational robotics.

## **5. Conclusions**

Creativity is the ability to transcend traditional ways of thinking or acting and to develop new ideas, methods or objects. It's a skill. Running a marathon is also a "skill", as is solving complex equations or reciting a Shakespeare poem. Creativity is therefore a skill. Although for some it seems natural, anyone can develop their creativity with the necessary time and effort.

It transcends traditional ways of thinking or acting. To transcend means to "exceed," that is, to recognize the limits of what already exists and to try to break them.

She develops new and original things. The key word here is "development." Creativity goes beyond imagination, because creativity develops itself. If it's an idea, it means confronting the world to verify it. If it's a process, it means testing how it works. If it is an object, it will have to be "created", that is, realized.

For a teacher, creativity remains strongly associated with the individuality, personality of a student, as well as the ability to generate unique original productions.

Today, researchers believe that creativity is a process of mobilizing the cognitive mechanisms that are part of the general cognitive functioning (executive functions) of the individual. In other words, the underlying functions of creativity are not specific to this skill. Cognitive models and current studies have repeatedly shown that creativity can be learned and can be the subject of classroom learning.

If we know that creativity exists in all individuals, that it can develop over time and through learning, we cannot ignore that it manifests itself in different degrees depending on the individual and the situation. What must be remembered from this approach is the level of expression that, for a teacher, what is called ordinary creativity is what the teacher can integrate into his teaching methods.

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