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REVIEW


## Teaching creative thinking. A systematic look

*Pensamiento creativo docente. Una mirada sistemática*

Ensino de pensamento criativo. Um olhar sistemático

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### KEYWORDS

teacher creativity,  
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thinking

**ABSTRACT.** The objective was to systematize evidence of the development of creative thinking and its potentialities with a view from the educational field, highlighting the aspects of creativity in teachers. A systematic review of articles from the Proquest, Scopus, and Eric databases was carried out. Relevant information was selected. To obtain results, the information was systematized, considering the thematic axes as aspects of creativity, characteristics, and strategies for teaching creative thinking. It is concluded that creative teaching thinking is of great importance because it favors innovation. In addition, it is an essential aspect in today's world, so it must be permanently strengthened and thus contribute to its development

### PALABRAS CLAVE

creatividad docente,  
estrategias, pensamiento  
creativo

**RESUMEN.** El objetivo fue sistematizar evidencias del desarrollo del pensamiento creativo y las potencialidades que presenta con una mirada desde el ámbito educativo, poniendo en manifiesto los aspectos de la creatividad en los docentes. Se realizó la revisión sistemática de artículos de las bases de datos de Proquest, Scopus y Eric. Se seleccionó información relevante. Para la obtención de resultados se sistematizó la información considerando los ejes temáticos como aspectos de la creatividad, características y estrategias para el pensamiento creativo docente. Se concluye que el pensamiento creativo docente es de gran importancia porque favorece a la innovación. Además, es un aspecto muy necesario en el mundo actual, por lo que debe fortalecerse permanentemente y así contribuir a su desarrollo.

### PALAVRAS-CHAVE

**RESUMO.** O objetivo foi sistematizar evidências sobre o desenvolvimento do pensamento criativo e as potencialidades que apresenta com uma visão do campo educacional, destacando os aspectos da criatividade em professores. Foi realizada uma revisão sistemática de artigos das bases de dados Proquest, Scopus e Eric. Informações relevantes foram selecionadas. Para a obtenção dos

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criatividade do professor, estratégias, pensamento criativo

resultados, as informações foram sistematizadas considerando os eixos temáticos como aspectos da criatividade, características e estratégias para o ensino do pensamento criativo. Conclui-se que ensinar o pensamento criativo é de grande importância, pois favorece a inovação. Além disso, é um aspecto muito necessário no mundo de hoje, por isso deve ser fortalecido permanentemente e assim contribuir para o seu desenvolvimento.

## 1. INTRODUCTION

The development of creative thinking is considered a requirement of today's world; many point out that being able to enhance it is the school's responsibility and must be developed from an early age. Yildiz y Guler (2021) maintain that the more you exercise, the greater the ability to express it; this means that it can be educated as it is constantly put into practice. The development of creative thinking has programs that allow its modification and transformation progressively (Arturo & Delgado, 2010; Chávez & González, 2019).

Guilford (1977) points out that the best way to encourage innovation and education for change is to educate creatively. Creativity plays a vital role in daily life. It facilitates problem-solving, adaptation to change, the generation of new artistic and scientific manifestations, the birth of new ideas or products, and so on.

Since the mid-twentieth century, one of the main objectives has been the development of creative thinking skills. Its importance lies in the significant impact on students and how teachers transmit it to students. The result of this thought should be considered within the training of students since it allows them to face different situations, adapt the activities they carry out to make decisions, and solve problems reasonably and reflectively. It is also considered that the teacher is the one who should prioritize their creativity training and apply it in the didactic process of their daily practice. This process must be characterized by constant change, leaving aside the rigidity in teaching, which is not adequate since it is the teacher's responsibility to develop learning experiences in a situated way, where reality and context are a motivating source for the necessary learning. Thus developing higher-order skills (Al-Mahasneh, 2018).

Therefore, based on all those above, the objective of this research was to analyze the different sources of information and arrive at conclusions and suggestions on theoretical aspects of creativity, which determine the characteristics of the creative teacher. It also seeks to publicize strategies to develop teacher creative thinking.

## 2. METHOD

A systematic review was carried out regarding the conceptual bases of creativity, the characterization of creative teachers and the exploration of appropriate strategies that improve teacher creative thinking. Numerous studies

have been carried out on the subject above, but many still misunderstand it, especially when it comes to putting it into practice.

Table 1

Study universe, axes and sub-axes

Study universe	Study axes	Study sub-axes
Teaching creative thinking.	Conceptual bases of creativity and creative thinking in teachers	<ul style="list-style-type: none"> <li>- Process</li> <li>- Ability</li> <li>- Outcome</li> </ul>
A systematic look	Characteristics of the teacher with creative thinking	<ul style="list-style-type: none"> <li>- Process</li> <li>- Ability</li> <li>- Outcome</li> <li>- Innovation in didactic aspects</li> <li>- Ideative process in the teaching-learning process</li> <li>- Open mind</li> <li>- Listening ability</li> <li>- Entrepreneur</li> <li>- Innovative</li> <li>- Imaginative</li> </ul>
	Strategies to promote teacher creative thinking	<ul style="list-style-type: none"> <li>- Constant researcher</li> <li>- Show love for what you do</li> <li>- Dynamic</li> <li>- Organized</li> <li>- Innovation projects</li> <li>- Collective strategies: brainstorming</li> <li>- Use of audiovisual materials</li> <li>- The game</li> <li>- Mental maps</li> </ul>

### 3. RESULTS

#### The creativity

To start this review, the concept of creativity is established, defined by many authors.

Guilford (1977) a renowned author who enhances creativity, defines it as an innate quality of the human being.

On his part, Crot (2013) points out that in its beginnings, creativity was studied from the individual levels of the human being, which then, with time, was looked at as social relationships. We will also mention Runco and

Jaeger (2012) who conceptualize creativity as ideas with innovation, value, quality, and impact as characteristics. On the other hand, Oppenheimer Oppenheimer (2014) indicates that creativity is a social process produced by interacting with people with whom it is experienced, competes, and collaborates. Finally, Schmoelz (2018) points to creativity as the set of media, transitions, evolutions, and implementation of content.

### Creative thinking

Today's education requires thinking men and women who can contribute to science and know-how to adapt to change (Shaughnessy, 1998). According to Pacheco (2003) the need to resort to creative thinking to solve problems has become evident in recent years.

### Conceptual bases of teacher creative thinking

Table 2

Systematization of creative thinking

Authors	Important Considerations
Villacrez (2017)	Power of innovation in didactic aspects, which allows to transform reality from their daily practices.
De Bono (2009)	Have a holistic vision of things that allow activating different and original ideas from work with students.
De la Torre (1995)	Ideative process that uses didactic means for learning.
Suárez et al. (2017)	Passion for changing the attitude of students, to handle new learning processes.
Almansa (2012)	Method that allows you to solve problems in a different way. It allows to reinvent new and original solutions.
Torrance (1965)	Process that allows to intuit gaps, raise hypotheses and then test them, to finally communicate results. It is thus a creative mental activity that allows to produce new ideas.

### Characteristics of the creative teacher

Yaqoob (2012) states that creative teachers must present the following characteristics:

- Have an open mind and listening skills
- Establish a fun class environment.
- Teach with kindness
- Uses a variety of methods that lead to reflective thinking.
- Shows familiarity with the material to be used.

In the same way, Nour and Zare (2015) indicate that the activities carried out by the creative teacher in the classroom help the student develop their autonomy in learning, promoting the development of creative thinking and communication skills. In addition, Qatami (2012) states that the creative teacher must present characteristics such as::

- Constant researcher
- Ability to experiment and innovate
- Ability to solve problems
- Management of educational strategies that develop imagination and creativity.

Galvis (2007) points out that the teaching creative process is characterized by:

- The ability to generate problematic situations
- Promote a climate of trust, which allows the production of ideas,
- Encourage situations that encourage students to exchange opinions,
- That it is capable of providing acknowledgments against the evaluation carried out,
- Table to set goals that lead to the achievement of proposed objectives.

We also have Suárez et al. (2017) who mentions that the creative teacher shows love for the learning process of their students, generates changes, favor an environment of freedom with great human warmth, can cope with the new demands of education, and is capable of unlearning attitudes that slow down the development of creativity.

De la Torre (1995) points out that the creative teacher shows characteristics such as generating communication and trust with students, possessing dynamism that is reflected in recreational activities, and allowing the formulation of questions, opening the way to the development of creativity.

On the other hand, Blanquiz and Villalobos (2018) trust that education in creativity is a great need, for this, diverse environments must be fostered for students to develop learning strategies and use techniques or tools; therefore, a creative teacher must be organized, expressive, have freedom, be innovative, be transformative and can build original ideas.

Carvalho et al. (2021) state that the creative teacher is one who:

- He shows enthusiasm for the work he does.
- He attends to the needs of his students.
- He is clear about what the demands of the school world are.

- Orients his work towards activities in the real context.
- Promotes collaborative work.
- Develops the critical capacity of their students.

### **Strategies to promote teacher creative thinking**

De la Torre and Violant (2006) they pointed out that novel methods should be implemented, taking into account the needs of the students. The teacher then becomes reflective and, above all creative tutor. For this, they indicated that six elements guide the development of innovation and creativity, which are:

- Theoretical foundation.
- Purpose.
- Adaptive sequence.
- Adaptation to contextual reality.
- Role of the agents.
- Functionality and efficiency.

Velásquez (2017) concluded that strategies for creative teaching imply profound changes in daily practices and therefore, considered it essential to consider the established intentions, the interrelationships that occur, the work environment, and the ability to act flexibly when faced with erroneous actions. With excellent opportunities to learn. All this must be done strategically, from planning, the learning process, and reflecting on it.

Robinson (2009) points out that one of the collective strategies used in creative thinking training is brainstorming, which aims to motivate people to be authentic, flexible, considerate, and innovative to solve the various problems that arise. This strategy will allow teachers to monitor the process that will reflect the improvement points solved through exploration and research methods.

Another strategy to develop creative teaching involves audiovisual materials such as printed material, models, videos, photographs, or others in which skills and experiences converge. These materials will help students discover, create, and explore their creative talents (Ma'alouli, 2010).

Dolorier (2017) points out that creative teaching thinking allows solving learning problems and considers as a strategy the development of pedagogical innovation projects that have as criteria:

- The novelty: refers to something new in any situation.
- Intent: purpose that leads to the search for improvements.
- Internalization: consists of accepting and conceiving the idea of change.

- Creativity: the emergence of ideas to solve the problems identified.

Carvalho, et al. (2021) consider as strategies to develop teacher creativity actions such as seeking that teachers can express their aspirations, participate in recreational activities, use audiovisual materials, carry out the socialization of experiences among teachers and value the execution of projects where the impulse is shown to new practices.

Caldwell et al. (2020) consider as a strategy for teachers' creative development the technological participation through collaborative online tools. These can be developed through visual publications, which serve as an impetus to adapt, grow and reuse creative ideas. You can also use influential publications, which will allow you to form a link of thought, cultures, practices in the transformation of creative thinking, and the exchange of ideas, facilitating the elaboration of collective knowledge by a particular group of participants.

Rosales y López (2020) mention that creative thinking should be stimulated so that teachers and students can interact efficiently with activities of great creative potential such as games, humor, creative visualization, the whirlwind of ideas, mental maps, and analogies.

#### 4. DISCUSSION

After thoroughly reviewing various articles, finding a specific concept on educational, creative thinking has been challenging. However, it can be affirmed that having a creative teacher will have creative students, which will allow the development of an education-oriented to competitive learning (Barzola et al., 2017). Moreover, having to apply innovative strategies that will enable quality learning will make the self-realization of students possible. It is also necessary to consider the importance of unlearning attitudes, which impede creativity.

The teacher exercises leadership to successfully carry out their daily activities as mediator and facilitator of learning (Jamer et al., 2020). Thus, its relevance in the development of creativity can be understood. Creative teachers must have essential characteristics that allow them to transform the educational environment through their attitudes, which are based on the needs of their students and the demands of the modern world (Shaughnessy, 1998). On the other hand Blanquiz and Villalobos (2018) show the importance of the directive role to seek the participation of teachers in diverse and innovative activities and projects, achieving a pleasant work environment and collaboration, which allow creative development.

The strategies for the development of creativity proposed for the teacher are directly related to the creative capacity of their students, which allows better work environments to achieve the proposed learning (Rosales & López, 2020). In addition, teachers must be constantly updated, which will enable them to promote the interest and development of creative thinking (Barzola et al., 2017).

There are various strategies to develop creative teaching thinking, such as audiovisual materials, recreational activities, games, and the use of technology (Caldwell et al., 2020; Carvalho et al., 2021; Rosales & López, 2020). In addition, Blanquiz and Villalobos (2018) conclude that teachers' creativity depends on the value they give to the management of pedagogical strategies and their action in planning. Without them, it is impossible to develop creative thinking in students.

## 5. CONCLUSIONS

Creativity is a higher-order skill, vital in the present century, as it is applicable in different fields of knowledge. However, it is more relevant in the educational field, which is the ideal source to empower it since it allows the person to act autonomously and show innovative ideas to successfully face today's society's demands.

Teachers' creative thinking is related to the way they carry out their pedagogical work, where acting plays a dominant role in this type of thinking. Therefore, the teacher should consider this aspect very important because there can be no creative students if the teacher does not have these skills.

The characterization of the creative teacher shows a culture of permanent innovation without neglecting the emotional part since creating a pleasant environment for learning is essential. In addition, it is necessary to consider that he must be clear about the needs of his students and, above all, show passion for what he does every day.

Regarding creative teaching strategies, there are varied; among the most relevant are those that correspond to the development of innovation projects, the constant socialization of collaborative work, gamification, and those related to the use of audiovisual material.

### **Conflicto de intereses / Competing interests:**

La autora declara que no incurre en conflictos de intereses.

### **Rol de los autores / Authors Roles:**

No aplica.

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