

## **DESIGN THINKING AS A TOOL TO ENCOURAGE CREATIVE PRACTICES IN PRESCHOOL TEACHERS**

### ***DESIGN THINKING COMO FERRAMENTA PARA INCENTIVAR PRÁTICAS CRIATIVAS DE PROFESSORES DA PRÉ-ESCOLA***

### ***DESIGN THINKING COMO HERRAMIENTA PARA INCENTIVAR PRÁCTICAS CREATIVAS EN DOCENTES DE PRÉ-ESCOLAR***

Laura Melissa BECERRA GUEVARA<sup>1</sup>  
Lina Maria OSORIO VALDÉS<sup>2</sup>

**ABSTRACT:** Although the Design Thinking (DT) methodology appeared more than 10 years ago with the aim of promoting creative thinking and innovative ideas to improve or create a product or service, it is not common to hear about its use in the educational field. It is for this reason that a research exercise was carried out in which this methodology was incorporated to design a didactic strategy that would encourage the creative planning of preschool teachers in an educational institution in the municipality of Floridablanca (Santander, Colombia). For this, a qualitative research exercise was carried out through which the perceptions of preschool teachers about creativity and the methodologies to promote it in class design and institutional planning were collected. The didactic strategy is reflected in a toolbox for use by teachers, based on the different moments of DT.

**KEYWORDS:** Design thinking. Educative innovation. Teaching practice. Institutional planning. Class design.

**RESUMO:** Embora a metodologia Design Thinking (DT) tenha surgido há mais de 10 anos com o objetivo de promover o pensamento criativo e ideias inovadoras para melhorar ou criar um produto ou serviço, não é comum ouvir falar de seu uso no campo educacional. É por essa razão que foi realizado um exercício de pesquisa em que esta metodologia foi incorporada para desenhar uma estratégia didática que incentivasse o planejamento criativo de professores de pré-escola em uma instituição de ensino no município de Floridablanca (Santander, Colômbia). Para tanto, foi realizado um exercício de pesquisa qualitativa por meio do qual foram coletadas as percepções dos professores de pré-escola sobre a criatividade e as metodologias para promovê-la no planejamento de aulas e no planejamento institucional. A estratégia didática se reflete em uma caixa de ferramentas para uso dos professores, com base nos diferentes momentos da DT.

**PALAVRAS-CHAVE:** Pensamento de design. Inovação educacional. Prática de ensino. Planejamento institucional. Projeto de aula.

<sup>1</sup> Autonomous University of Bucaramanga (UNAB), Bucaramanga – Santander – Colombia. Master's Student in Education. ORCID: <https://orcid.org/0000-0002-5817-8608>. E-mail: [lbecerra493@unab.edu.co](mailto:lbecerra493@unab.edu.co)

<sup>2</sup> Autonomous University of Bucaramanga (UNAB), Bucaramanga – Santander – Colombia. Postgraduate Coordinator. ORCID: <https://orcid.org/0000-0003-2305-9630>. E-mail: [losorio3@unab.edu.co](mailto:losorio3@unab.edu.co)

**RESUMEN:** Si bien la metodología del Design Thinking (DT) aparece hace más de 10 años con el objetivo de promover el pensamiento creativo e ideas innovadoras para mejorar o crear un producto o servicio, no es común escuchar sobre su uso en el ámbito educativo. Es por esta razón, que se llevó a cabo un ejercicio de investigación en el que se incorporó esta metodología para diseñar una estrategia didáctica que incentivara la planeación creativa de los docentes del nivel de preescolar en una institución educativa del municipio de Floridablanca (Santander, Colombia). Para ello, se realizó un ejercicio de investigación cualitativa a través del cual se recopilaron las percepciones de los docentes de preescolar acerca de la creatividad y las metodologías para propiciarla en el diseño de clases y planeación institucional. La estrategia didáctica se ve reflejada en una caja de herramientas para uso de los docentes, basada en los diferentes momentos del DT.

**PALABRAS CLAVE:** Pensamiento de diseño. Innovación educativa. Práctica docente. Planeación institucional. Diseño de clases.

## Introduction

In recent years, creativity has been related to the creative industries or orange economy, which includes various economic activities and sectors linked to the creation, production and commercialization of goods and services, based on cultural content which has been classified as intangible products (MALAVER-RODRÍGUEZ; VARGAS, 2004). In Colombia, the orange economy represents an additional 3% of the gross domestic product (GDP), which is evident in direct and indirect activities, without its contribution to the country's economic and social development been significant until now.

With these figures, it would be expected to find an important density of studies that account for the insertion of methodologies that foster creativity and diverse spheres and systematic approaches that allow to work in a clear way the creativity in the pedagogical surroundings, despite the education and the health sectors being considered fundamental elements in the country's economic activity (KLIMENKO, 2008).

Thus, a problem for education is the fact that it cannot rely on mechanisms or methods that articulate the pedagogical challenge of educating with creativity, which, reflected in the actions that produce some value due to providing a service or good, limits diversification of things, that is, by not allowing the coexistence of methodologies that guide all types of creative production, it hinders the ecosystem of intangible benefits within a singular or collective path in society, which fundamentally starts from the existence of the mechanisms to bring into reality what was imagined (MÉNDEZ; MICHELINI; PRADA; TÉBAR, 2012).

For Larraz-Rábanos (2015) it is necessary the promotion, with education, of the use of methodologies that promote creative activity, since in addition to favoring the development of

skills, they have a great impact on the dimensions of being, understanding education as part of it. Although what is sought is not to transform education into a springboard of creations derived from creative methodological processes, it is expected to understand creativity as something more than inventing things on paper, in addition to planning rare school activities full of colors or promoting courses of formation for meaningless content.

The bet is that in educational institutions (EI) there are models of creativity management based on methodologies such as DT, so that from them teachers transform their actions in the classroom, catalyzing the minds of students at all educational levels and consequently, that in Colombia creativity be recognized as a key aspect in the country's economic and social development. To make a contrast between theory and reality, it is worthwhile to review the conception of Kandel, ER, Jessell, TM, and Schwartz, JH (1997, p. 63, our translation) that regarding creativity mention:

The creative process is a skill linked to the very nature of human beings, which is one of the most complex strengths that is mediated by thinking skills, which, through different cognitive processes, integrates levels of perception to higher engrams of the mental sphere with which the path of thinking is traced for the conception of ideas, and from them, took to the plane of doing

At the preschool level, there are children between zero and six years old, a time when, according to Rodari (2004), when the child is prepared to understand the world, as several educators have also indicated. Howard Gardner (1998), for example, establishes in some of his books how education in the early years promotes creativity, scientific knowledge and interaction with the world in a “carefree” way, which will be fundamental in the experiential burden that the child will be able to acquire and use it in the construction of knowledge in later stages of schooling.

Other authors such as Moreno, Solovieva and Rojas (2014), Moreno (2015) and Ortega (2012) are in favor of defining creativity as an aspect that can be avoided or promoted early, where it constitutes a tangential problem, the monotonous action of teachers on the subject and the few intentions of educational institutions to equip themselves with pedagogical, methodological and technological tools for the promotion of creativity in children.

Therefore, combining the social and economic description with the brief conceptual consideration of the previous paragraphs, it is clear that there is a reality around the work of teachers that compromises the theme of the mechanisms necessary to foster creativity. The news is that no educational level escapes the problem, which, in essence, is the lack of one or

more methodologies to talk about a process that leads to the conceptual and practical construction of creativity, and regarding the preschool level, this is considered an aspect that plays a fundamental role in both teachers and students (MORENO; SOLOVIEVA; ROJAS, 2014). Therefore, the question is: How can the Design Thinking methodology be adapted and linked to teaching practice at preschool level to enrich creativity in the educational experience with it?

## Development

According to the Organization for Economic Cooperation and Development (OECD) and the Statistical Office of the European Communities (EUROSTAT) (2010), creativity is the ability to generate new ideas or concepts from associations among others already known, which usually produces original solutions. Creativity is synonymous with "original, divergent, creative thinking and constructive imagination". In the case of children, creativity is a skill *per se* that is subject to changes in the family, social and academic environment at the preschool level, so it is necessary for teachers to set up a pedagogical space conducive to creativity (NARVARTE, 2007).

This responsibility of the teacher implies that, when carrying out the planning exercise of his classes, one must keep in mind didactic and technological aspects, which can make him into a transforming agent of the classroom, so that from an introspective process he can handle professional skills to intervene in specific problems detected in the school environment (DÍAZ; VARGAS, 2009). It is in this sense that we have Design Thinking (DT) as, when incorporated into the curriculum, it can promote a teaching action based on a validated theoretical foundation to provide creative skills in a meaningful way, this being a viable alternative to overcome mechanical and instrumental teaching.

In addition to the teaching commitment during its planning exercise, the support of Educational Institutions (EI) is required so that, in the formulation of academic plans, new methodologies, instruments and tools are incorporated that favor the instruction and feedback of students, since this impacts in improving the quality and growth of culture through knowledge. Thus, the inclusion of methodologies with which is possible to establish processes for improving teaching practice through fostering creativity goes beyond the classroom, as the main recipients of the benefits are children.

## **Design Thinking and planning thinking**

The concept of Design Thinking began to be used a few years ago to solve problems in commercial or business units, from a strategic planning where a storm of ideas is put in place to build tactics and strategies for the benefit of business goals. The general information about the concept of Design Thinking leads to conceive a methodology in which a series of tools is required for its application, which makes it relevant to achieve certain purposes. This is how, for the teaching environment with the tools used in DT, it is possible to take students along a learning path in which a series of characteristics are exposed that favor the construction of knowledge and the development of innovation are centered on the purposes of individuals (COSKUN, 2010; GERBER; CARROLL, 2012).

The phrase “planning thinking” or “Design Thinking”, has two basic concepts. The first refers to the attitude with which the sciences approach such problem, under visualization parameters based on analysis, planning and the search for control and stability in the face of a prototype. The second conception is oriented towards a group process, generally multidisciplinary, centered on the user and with an early validation for the identification of problems and generation of solutions, an approach that corresponds more to administrators and industrial engineers and other connected disciplines (GERBER; CARROLL, 2012).

Regarding the conceptualization of DT, the most accepted is the one mentioned by Coskun (2010, p. 504) who states:

It basically refers to a problem-solving method, with a creative solution approach and relevant processes, closely connected to the subject of design, which is also a social process, which consists of thinking and working through different perspectives and often involves considerable conflict and negotiation.

Thus, Design Thinking is a relevant methodology to develop innovative activities through a spirit that is born from individual for his surroundings, where is shown that creations can be driven by appropriate knowledge through direct observation, and in which prior knowledge of people makes life's requirements meet a specific purpose by applying the various steps of this methodology to obtain concrete and objective solutions. In this way, Design Thinking, based on its focus, nourishes itself with the intellectual capacity to build practical ideas for the resolution of conventional problems, in addition to allowing intuition, recognizing patterns, building of ideas with emotional, functional meaning and to express itself to be applied in the creation of disjunctive solutions that meet people's needs in completely new ways (URDICK; WILLIS, 2011).

From this point of view of the educational sciences, Design Thinking (DT) is a process that involves a series of steps and tools to be put into practice, and, different from the planner's focus, the engineering orientation, specially of processes, quality and market, addresses three main aspects (AFANADOR, 2013):

1. It is centered on the educational user and their needs through an observation process driven by knowledge and creativity.
2. It is an interactive work that, through applied research, explores the needs of users and their surroundings to feedback the results, analyze and refine them constantly.
3. It is also a process of social analysis and communicative language, since it applies to projects carried out in teams, where members must produce ideas together and make decisions, which requires, in most cases, the participation of several disciplines, multiculturalism and the exchange of experiences between the members of the work team, since it is understood that all this is part of what will be the final result.

Regarding the DT tools, about 51 are known in the available literature, however, for practical purposes only the most relevant ones for the educational sector will be described, which are: emphasize, define, design, build the prototype and evaluate, which also were used as part of the methodology to carry out the research exercise.

## Methodology

The research was carried out from the qualitative methodology of a descriptive nature, in a proven educational institution in the municipality of Floridablanca (Santander-Colombia). The sample consisted of five (5) preschool teachers. The instruments selected for the collection of information were the semi-structured research, a checklist and a focus group, through which the perceptions of the sample were valued in relation to the planning of classes and institutional planning.

The first step in the research also corresponds to that of DT, called emphasizing, which seeks to answer the question: what does the end user need? Here it is possible to use different instruments that allow to know the personal motivations of the sample to analyze them. The survey used the semi-structured interview, the checklist and the focus group. The second step was to define, once the needs of the client or user were identified, who in this case were the preschool teachers, it was necessary to define a problem situation to define the objective, as well as the route to be followed by all actors involved in the strategy. For this,

the focus group was used because it is a tool that helps to define the problem that one is trying to solve, making a more extensive analysis of the user, his habits, real problems and the benefits, to be able to innovate in practice.

The third step was to idealize, in which tools such as the storm of ideals, the storm of concepts and question-answers are used, among others, to take advantage of the functional knowledge of the individuals about the problem, and who individually and collectively propose original and innovative solutions (BROWN; WYATT, 2010). The fourth step was to build the prototype by transforming the intangible into something tangible like the strategy materialized in the toolbox. It is in this way that the prototypes more than an innovation, turn out to be a product of the exercise of reflection and idealization in which the concrete tools have an evidence that corroborates with what can go from a simple planning on paper to the configuration of a physical model, through which the concepts of the participating individuals are transmitted for the tangible resolution of the imposed problems. The fact of transforming the idea into a tangible product helps to visualize the possible solutions (BROWN, 2010).

Finally, the fifth step was to assess the level of compliance with the general rule of an innovation process. The prototype designed by the work team, which solves a problem, must be valued by the end users, who operationalize the solution, that is, what it is designed can have a precise measure in the audience that uses it, and the opinion of users ends up becoming a feedback process that will allow to refocus or redesign the proposal or strategy presented (BROWN; WYATT, 2010).

## **Results**

For the analysis and interpretation of qualitative data, two categories were chosen, given the main themes addressed in the research: Class planning and institutional planning. As for lesson planning, the results show that EI teachers assume that it is a tool to support the student's teaching-learning project. As a product of the information collected, it is identified that in all cases the educational model that teachers apply is the traditional one, where the didactic material is the mean to make their presentation, based on criteria defined by the educational institution and in line with the mandates of the Ministry of National Education (MEN) for preschool education.

It is also evident that the lesson planning is oriented to arouse the students' curiosity, however, the education of time for other academic and administrative activities leaves little space for the teacher to carry out a more creative planning process. Another aspect that draws

attention is the partial recognition that teachers have in view of the existing diversity among the actors in the educational scenario, that is, that, although they are aware of the particular characteristics of each student, attending to differences is a task that is not fully developed, even more so when the student population density is increasing.

Regarding the institutional planning category, the teachers express the need that the EI has to improve some physical conditions that guarantee more inclusive and, at the same time, more creative pedagogical practices. They also see the opportunity to include tools to articulate them with lesson planning based on school planning, thus promoting the process of methodological updating of the teacher, since, currently, methods such as Design Thinking are not present within the range of alternatives for curricular or institutional planning. This is seen as a necessity due to the requirement to create alternative solutions to situations in the context through creative processes, both in terms of school management and the operationalization of education. Therefore, it is necessary to introduce some adjustments in the planning process that allow greater flexibility in certain aspects of teaching and learning alternatives, the update and professionalization of the teacher and the improvement of his digital skills, so that this professional performance is in accordance with the educational demands of today's world.

### **Final considerations**

The school requires a clear role of the teacher according to the needs of a world that changes and advances rapidly, where students are the reason for the teaching staff to continue on a path of social and educational correspondence that fosters the autonomy of the teacher and elevates considerably their motivation in bringing their own learning closer to that of their students, with which professional competences are promoted at school from a globalized and interdisciplinary view.

As a result of the research, it became clear that teachers use various strategies to build didactic elements to share the syllabus pertaining to the preschool curriculum with their students. In support of these needs, a toolbox based on the Design Thinking methodology was built during the prototyping stage, which required understanding the institutional planning route. For the construction of the box, opportunities were identified for incorporating creative and innovative elements in the teaching exercise, based on active and meaningful learning that lead to teaching centered on critical thinking, which in turn is reflected in the work with



students, specifically in the stimulation of skills, abilities and competences from different areas of knowledge.

For this reason, it is necessary that within the educational system the relationship between innovations and the development of thought gains a significant importance, since it is from this balance that changes can be generated in the creative planning exercise of teachers, which will be reflected in activities developed by students and in more creative environments in which it seeks to enhance the conventional processes leveraged in traditional didactics, thus seeking to generate, both for students and teachers, interest in researching, exploring, knowing, learning and deepening.

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