

OPIICS 2019**International Conference of Psychology, Sociology, Education, and Social Sciences****CREATIVITY AND ITS DEVELOPMENT THROUGH PLASTIC
ARTS IN CHILDREN OF CHILD EDUCATION**

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Abstract

This investigation explains how creative development in children in early education can be supported through the use of visual arts. The children are capable of expressing emotions and feelings, discovering their own distinct artistic expression, and developing their representation of the world through communicating in an artistic manner. The objective of this study is to diagnose the level of creative thought in children between the ages of five and six and how it is improved through strategies involving graphic and visual arts. The method used in this study is based on a quantitative approach with a pre-experimental design methodology with a correlative scope. The sample group is from a population where $N=137$, from 7 educational institutions that is extracted from $n=37$ in a simple random manner where the experimental group was taken from the remains of the control group. For the assessment we applied a creative scale of 10 items, each assigned a point between one and four for a cumulation of 40 points; in a scale showing reliability of $\alpha=0.7$, which indicates adequate reliability. The results were derived from the statistical t application that shows a relationship from the students, the correlation results are from the pre and post tests for the experimental group. Here is significant evidence that the students that prepared with techniques involving graphic arts increased in creative thought. In conclusion it is important to utilize the graphic and visual arts in a consistent manner, planning and orientating the creative thought development of children.

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Keywords: Creativity, plastic arts, creative thinking, plastic graph techniques.



1. Introduction

This investigation explains how creative development in children in early education can be supported through the use of visual arts. The children are capable of expressing emotions and feelings, discovering their own distinct artistic expression, and developing their representation of the world through communicating in an artistic manner. The objective of this study is to diagnose the level of creative thought in children between the ages of five and six and how it is improved through strategies involving graphic and visual arts. The method used in this study is based on a quantitative approach with a pre-experimental design methodology with a correlative scope. The sample group is from a population where $N=137$, from 7 educational institutions that is extracted from $n=37$ in a simple random manner where the experimental group was taken from the remains of the control group. For the assessment we applied a creative scale of 10 items, each assigned a point between one and four for a cumulation of 40 points; in a scale showing reliability of $\alpha=0.7$, which indicates adequate reliability. The results were derived from the statistical t application that shows a relationship from the students, the correlation results are from the pre and post tests for the experimental group. The results demonstrated $t=0.8$, and a value of $p<0.05$. Here is significant evidence that the students that prepared with techniques involving graphic arts increased in creative thought. In conclusion it is important to utilize the graphic and visual arts in a consistent manner, planning and orientating the creative thought development of children.

A very important part of early life is the personal and social development of children, development of personal identity, and acquirement of fundamental capacities and learning of the basic guidelines that integrate social life. The advancement of science demonstrates that the process and change that takes place in areas of the brain during infancy shows the existence of a period of intense production and establishment of connections between neurons that begin in the preschool years. If this is true, the knowledge is provisional and the study in neuroscience is continued and benefits with the diversity of data, the value and opportunity joined with the experiences of children and above all their creative development.

The study explains how the creative development of children is first and foremost obtained through the visual arts; with this the children are able to express their emotions and feelings, discover their own distinct artistic expression and in this process of evolution that allows the world to be represented and communicated in a creative form.

Every time that we ask ourselves, “what if instead of this I do that?” and “if I try it would it be a new way to do them?” We have learned to do new things, when this is done, not for necessity of survival, but with a critical attitude we are before a creative person (Corte, 2010). It is a reality that children confront daily issues that are more diverse and complex, issues that require them to familiarize themselves in a new environment requiring new forms of adaptability, above all based on creative thought that we acquire since childhood.

In this environment creativity is elevated to a fundamental tool that resolves new situations, this is key if we want children to think independently, are able to adapt well to situations in their lives, they can reason and question, are sensitive to the environment and are able to incline themselves to exploring the world around them, to obtain novel solutions to problems and learn to understand themselves. A child develops in their first six years much of the capacity to shape their future, the capacity of belief. Even

though all children are creative, there exists ways to stimulate this capacity in a form that is permanent and potent (Fernández, Eizaguirre, & Arandia, 2014).

1.1. Creative thinking

Children develop in different contexts to grow up happily. In their first area of development is a familiar context; in the first years of life one learns the unique and truths that satisfy immediate needs (Sanchez, 2006). After this, children begin to develop in a context greatly amplified with their classmates and friends, and neighbors, it is here that children are able to discuss with friends, share rewards, overcome fears, etc.

According to (Gallardo, 2014), creative thought is a capacity specific to humanity that allows for beliefs, elaborate products and put into practice solutions that solve real world. problems. From this point of view the author implies that creative development is comprised of cognitive and affective motivation, here lies intimate unity and leadership of the subject in a form connected as an intentional process that develops the person and puts into practice the human activities: communication, music, dance, painting, drama, literature, science, and other manifestations of psychosocial performances.

According to Klimenko (2011), creativity is a basic component that influences the integral development of the personality generally and in individual children, how future citizens that will have to confront a changing world that demands solutions to problems and to contribute significant understanding of distinct areas of action that they will encounter. A pedagogical aspect to understand is the essence of creativity in the physiological category, it's a task necessary as well as complex for the lesson to be the final multilayered development for diverse theories, traditionally and always more contemporary that they understand different perspectives.

Creative thought in children is a vehicle of all activity, it is a dialogue between reality and fantasy, between the real and what is possible, between what is and what could be, the capacity of creative thought gives meaning to our lives, because the majority of interesting concepts, important and human, are a result of creativity, where we believe that feeling is living completely. Moreover, the creativity that is the capacity to believe in something new, different and original, is from where the development of creative thought is formed in the individual, and more so in children, this is obligated to think in new ways that realize those activities, it's about thinking outside of the box and to be original in the process and creation of ideas.

Creativity is a process of discovery or production of a new concept that satisfies a demand in a determined social situation, in which one expresses the link between cognitive aspects and effects of the personality. Next, in both points of view the authors agree in that creativity develops internally as a product or creation of something new, there always exists an external stimulation that must be achieved through school, family and social life (Mikjans, 2005).

It is this that Chacón Araya (2011) is referred to as "a specific faculty to be human that allows one to believe with originality, flexibility and fluidity that is joined with material values and new knowledge that is the purpose that satisfies personal and social needs" (p.37). In those that consider the personal characteristics and the underlying neuro-sociology premises as the influence of the socio-cultural environment and the internal stimulation that gives one the attachment to learning and that triggers their behavior. According to Chacón Araya (2011) creativity is the capacity that a person has to create material

products, solve problems that the conflict is the strength that unwraps the creative potential of the person and that guide them to do the activities that go from easy to difficult, from known to discovery.

On the other hand Gallardo (2014) indicates that creativity is an integrative process that when is interacted with the subject and the object of the activity, the cognitive, affective, motivational, strong-willed, emotional and other elements that interact in creativity in a way that integrates the person, the process and the product as a whole. It is proven that when a child is well oriented on the activity to be executed, when he or she observes the world around him or her, experiences the examples of the teacher or peer is more capable as to what to do and how a task if he/she is motivated by its accomplishment.

According to Logan (2010) the development of creativity needs contradictory impulses to emerge and its specified through the principles of units of knowledge and creativity, the character of creativity. Of history and the logic and intuitive unit. The knowledge and the activity interrelate in the cognitive process that the subject does in a creative way.

Rodriguez (2009) affirms that the capacity to utilize the knowledge and materials to different products to the existing, also to demonstrate originality, people should get rid of paradigms, schemes and beliefs.

For Casas (2013) the combining or creative activity is the capacity of the brain, not only to keep and reproduce past experience but to combine, transform and create ideas and outcome of a new conduct about the previous experience. A peculiarity of the creative process gradually evolves, it starts in childhood and it continues into adulthood.

While Valencia and Orlando (2015) says that the functions of the creative process manifests in the imagination, the fantasy and the composition is given by the experiences of real situations of the context where the subject is found. An important aspect is expressed when the subject confronts the resolution of tasks and activities that initiates and puts into practice ordinary cognitive processes, metacognitive components, emotional and motivational self-regulation that favor the integral formation of the student.

On the other hand, Klimenko (2011) and Mikjans (2005) say that a holistic vision about the relation between the creative action and its impact on the development of capacities and abilities of the child. Asserted in this context is the possibility to stimulate the creative capacity of the students. Creative thought is can be stimulated and trained. Some people are born with the natural ability to develop creative thought, while others have to make an effort to achieve it.

However, it is possible for anybody to become a great creative thinker. Having been born with this natural skill or have been working on it depends on the person. When a person develops creative thinking, he finds day after day original ideas and more frequently the results are astonishing, the creative thinker begins to discover w to see the world from other perspectives and that higher ideas are very different from others. Their responses to the problems are never the most obvious and in many cases are revolutionary, the creative thinker is valuable in all aspects because she never falls into common solutions, they can contribute to solve almost 100 percent of problems.

A creative thinker stands out from others present in his capabilities to generate multiple ideas at the same time, she doesn't resign easily and brings the most original responses before a situation that requires urgent resolution.

1.2. Fine Arts

Early education plays a very important role in children learning through different expressions of art such as music, theatre, painting, literature and dance. Restrepo, Jimenez, and Moreno (2016) say that “These expressions are linked to knowledge of their own body through sensorial perceptions, searching to broaden their skill through stimulation of all intelligences and general creative thought” (p.10). In this the fine arts help to express feelings, emotions and imagination that facilitate different forms of expression and communication.

Fine arts also play an important role in the development of the child’s creativity in an academic level, through drawing techniques, sculpture and painting the child practices and improves his flexibility. Through these techniques the child also learns to express feelings, thoughts and emotions.

The mind develops through experiences, education with arts and games that allow enrichment through the development of emotional talent and knowledge. This development in children facilitates their own creativity.

Artistic education is fundamental in a child’s academic education. For one’s creative thought to develop one has to intervene with the social environment that surrounds him or her. This expression not only helps the creative process of children through motor skills, emotions or language difficulties, it also helps expression because they express their feelings and emotions through ludic activity.

1.3. Graphic Techniques

Graphic techniques are strategies that are used in the first years of basic education. Guangasi (2015) indicates that “These techniques develop fine motor control, with the objective of preparing children for the learning process and especially reading and writing are based in practical activities from their own culture” (p. 37). This is the reason why graphic techniques have a very important role in the children due to the development of fine motor skills helping to coordinate the corporal movements at the same time develop reading and writing skills in order to have equal personal development.

Drawing is an inherent skill in children, this technique favours reading-writing creativity among others, through drawings they express how they feel. Guangasi (2015) affirms that: “The drawing of a child is important because through practice and habit develops the self and encourages abilities of human talent to enjoy that activity” (p. 24). For children drawing is the activity where they express all transformations that they go through over time.

Finger painting is an activity of experimentation with visual, tactile and kinetic aspects. This technique consists of painting with fingers or hands using a mixture of paint of different colors and the desire to get messy, producing satisfaction and liberation to the child. Finger-painting techniques help with the evolution and expression of the child’s personality.

Sculptor is a technique that allows children to develop fine motor skills by working with materials such as sand, clay, plastics, dough, all while with hand and finger exercises. This supports the child as he begins reading and writing, using pencils, tracing letters and practicing focus (Tamay, 2017). This technique also helps to canalize aggressive feelings and behaviours.

Cutting (of appropriate materials) is a technique that consists of cutting with scissors or with fingers or tearing apart pieces of paper or cardstock and pasting on a specified surface. This practice supports acquisition of motor skills. It also helps with creative expression.

Collaging consists of pasting different materials onto paper or other objects combining different subjects using graphic design techniques and drawing (Pasquel, 2017). This technique promotes the use of creativity and imagination as well as improving the children's fine motor skills.

Building and construction assists in identifying sizes, colours, shapes and form using different materials. The children will develop their gross and fine motor skills, mental functions, attention and perception, reasoning skills, concentration and precision of movement while maintaining an environment of gender equality. This technique can be used on its own or combined with other techniques so that there is a wide variety of possibilities.

2. Problem Statement

It is evident that the development of creative thought is constant throughout life and it's used in everyday situations that a person faces. However, the first years in life have an important role in its development. The first years of education stimulate the fostering of this development of learners in all scopes, including creativity as a superior cognitive process.

The problem that is analysed in this study is to determine if graphic design techniques stimulate and support the development of creative thought in children in early education.

3. Research Questions

Which level of creative thought do children in the first grade possess?

Do graphic design techniques stimulate the development of the creative thought?

4. Purpose of the Study

To diagnose the level of creative thought of children of five to six years old and how this may improve when using graphic design strategies.

5. Research Methods

The methodology selected for this work is based on a qualitative focus with a pre- experimental method design, its reach is correlated and perspective, using measurements from pre and posttest that try to analyse the change in creative thought in first grade students using graphic design strategies, These were applied in the months of May and June of the 2018 - 2019 school year in Ecuador, in the province of Imbabura, in the city of Ibarra.

5.1. Participants

The sample has been selected from a population where N=137 from 7 educational institutions in the city of Ibarra (Ecuador), of which a simple random sample was extracted of n=37 to create the experimental group with X= 5.4 years old and S=0.54 of which 16 were male and 21 were female.

5.2. Investigative Process

Once the request was approved by the proper authorities in each institution the test of creative thought was given over the course of two weeks, with the results of the experimental group were determined by the one that were intervened with the graphic design techniques that were applied to develop creative thought over 64 hours of planning and introduced in two. The sample has been selected from a population where N=137 from 7 educational institutions in the city of Ibarra (Ecuador), of which a simple random sample was extracted of n=37 to create the experimental group with X= 5.4 years old and S=0.54 of which 16 were male and 21 were female weekly periods of four hours each; then at the end of the application the post test was administered. The data was stored in a database created with SPSS 22.0 where statistical calculations were made, descriptive and correlated as well as tables and graphs.

5.3. Instrument

For the evaluation a scale of creativity was applied which consists of 10 items, each given a range between one and four giving a total of 40 points; the scale shows a $\alpha = 0.7$ showing that the instrument is reliable.

6. Findings

The findings in the variables were:

6.1. Descriptive Statistics

The Publisher data shown in table 1 refers to the average age of the children studied its standard deviation as well as the average general scores of creative thoughts in the pre and posttests.

Table 01. Descriptive Statistics

	N	Minimum	Maximum	Mean	Standard deviation
Edad	37	5,0	7,0	5,449	,5138
Creativity pretest	37	18,0	40,0	28,963	4,6800
Creativity test	37	32,0	40,0	36,270	2,5347
N° valid (by list)	37				

Creative thought is an important factor in problem solving and encountering new experiences, it's important in development during early education. The results show that the pre-test scores in creative thought are an X=28.9 and an S=4.6. The results are compacted, the average is close to the maximum obtained, however it does not indicate a high score, after the intervention of graphic design techniques the results of the posttest demonstrate that the students reached a score of X=36.2 and an S=2.5, also it is evident

that the minimum score reached surpasses the pre-test score as well as the average obtained by the group in creative thought.

6.2. Correlation Statistics

When the measurement of the pre and posttest are correlated (see table 2) it is identified that the graphic design techniques have stimulated creative thought of the children whom the intervention was applied.

Table 02. Correlation of Paired Samples

Column Heading	N	Correlation	Sig.
Creativity pretest & Creativity test	37	,843	,000

The correlation of paired samples shows that there is a linear relation between the scores of pre and posttests with an $r=0.84$, that is significant with a value of $p \leq 0.05$.

Table 03. Test of Paired Samples

	Paired Differences					t	gl	Sig. (bilateral)
	Mean	Standard deviation	Mean standard error	95% Confidence interval of the difference				
				lower	upper			
Par 1 Creativity pretest -Creativity test	-7,7838	3,1193	,5128	-8,238	-6,7438	-15,179	36	,000

To establish whether there is a significant difference between the pre-test and posttest of creative thought, we have applied the statistic to the student for related samples (see table 3) to correlate the results of the first test and the second evaluation, this one was done after the intervention of graphic design strategies the statistics describes $t=15.17$ and a value of $p < 0.05$; this significance of this is that there is statistical evidence that demonstrates that students worked with graphic design techniques guided the development of creative thought improving their scores.

7. Conclusion

Creative thought is a superior cognitive process that can be developed and stimulated. After analysing the results, the importance of developing creative thought is evident and that fine arts, especially graphic arts and techniques are improved in children.

Children that develop their creativity tend to have original thoughts more frequently. The results obtained with the use of graphic art techniques predicted factors of creative thought positively; these techniques must be practiced with institutional design creating chaotic systematic contexts, since creative thought is an important factor in problem solving and facing new experiences.

Fine arts have a fundamental role in the development of creativity in children at the level of primary school, because, through different graphic design techniques the child exercises and improves their

cognitive flexibility, therefore these techniques contribute to the children learning to express feelings, thoughts and emotions. For this reason, it is important that teachers who apply these techniques do so consistently, planning and guiding the development of creative thought in children.

The appropriate context for stimulating creativity of students is in the classroom, this gives the potential to stimulate the creative capacities and abilities through the arts.

The base of the results of the study concludes that creative thought in children is the principle foundation of all activity, it also suggests that between fact and fiction, real and possible, fantasy and reality, the capacity of creative thought gives sense to the existence of individuals because the majority of situations are transcendental, important and human and are the result of creativity. When we create, we feel that we are living fully?

References

- Casas, M. (2013). *El espacio del niño y sus conceptos [The child's space and concepts]*. México: Editorial Trillas.
- Chacón Araya, Y. (2011). Una revisión crítica del concepto de la creatividad [A critical review of the concept of creativity.]. *Revista Actualidades Investigativas en Educación* Recuperado de <https://www.redalyc.org/pdf/447/44750106.pdf>
- Corte, M. (2010). *Inteligencia creativa: Arte y creatividad en educación [Creative intelligence: Art and creativity in education]*. México: Editorial Trillas.
- Fernández, I., Eizaguirre, A., & Arandía, M. (2014). *Creatividad e Innovación: Claves para intervenir en contextos de aprendizaje REICE [Creativity and Innovation: Keys to intervening in learning contexts REICE]*. *Revista Iberoamericana sobre Calidad, Eficacia y Cambio en Educación*.
- Gallardo, M. (2014). *La creatividad en la escuela [Creativity at school]*. Jaén: Universidad de Jaén.
- Guangasi, L. (2015). *Las técnicas grafo plásticas y su incidencia en el desarrollo artístico en los niños de los primeros años de educación inicial de la escuela Paulo Freire [Plastic graphic techniques and their impact on artistic development in children of the early years of initial education of the Paulo Freire school]*. *Universidad Técnica de Ambato. Ambato, Ecuador*. Retrieved from [file:http://repositorio.uta.edu.ec/bitstream/123456789/14810/1/TESIS%20DE%20TECNICAS%20GRAFOPLASTICAS.pdf](http://repositorio.uta.edu.ec/bitstream/123456789/14810/1/TESIS%20DE%20TECNICAS%20GRAFOPLASTICAS.pdf)
- Klimenko, O. (2011). Una reflexión en torno a la creatividad y su relación con los componentes del proceso educativo [A reflection around creativity and its relationship with the components of the educational process]. *Revista virtual Universidad Católica del Norte*.
- Logan, L. (2010). *Estrategias para una enseñanza creativa [Strategies for creative teaching]*. España: Oikos.
- Mikjans, C. (2005). *Expresión y creatividad en preescolar [Expression and creativity in preschool]*. UPN.
- Pasquel, M. (2017). *Técnicas grafoplásticas y su incidencia en el desarrollo de la motricidad fina de niños y niñas de primer año de educación general básica de la Unidad Educativa Ibarra [Graphoplastic techniques and their impact on the development of fine motor skills in boys and girls in the first year of basic general education in the Ibarra Educational Unit]*. Retrieved from <http://repositorio.utn.edu.ec/bitstream/123456789/7769/1/PG%20587%20TESIS.pdf>
- Restrepo, L., Jimenez, J., & Moreno, D. (2016). *La Influencia Del Arte En El Desarrollo Del Pensamiento Creativo En La Primera Infancia [The Influence of Art in the Development of Creative Thinking in Early Childhood]*. Retrieved from <https://repository.upb.edu.co/bitstream/handle/20.500.11912/3564/La%20Influencia%20Del%20Arte%20En%20El%20Desarrollo%20Del%20Pensamiento%20>
- Rodriguez, M. (2009). *Manual de creatividad [Creativity manual]*. México: Editorial Trillas.
- Sanchez, T. (2006). *Hacia una pedagogía de la creatividad [Towards a pedagogy of creativity]*. México: Editoria Trillas.
- Tamay, M. (2017). *Técnicas Grafoplásticas Con Recursos Naturales Para Estilumar La Motricidad Fina En Niños Y Niñas De 2 A 3 Años En El Centro Infantil Buen Vivir Los Traviesos Cantón Tambo*,

Período Lectivo 2016-2017 [Graphoplastic Techniques with Natural Resources to Stylize Fine Motor Skills in Boys and Girls from 2 to 3 years old at the Centro Infantil Buen Vivir Los Traviesos Canton Tambo, School Period 2016-2017]. Retrieved from <https://dspace.ups.edu.ec/bitstream/123456789/14499/4/UPS-CT007140.pdf>

Valencia, M., & Orlando, D. (2015). *La creatividad: una mirada al conflicto psíquico* [Creativity: A Look at Psychic Conflict]. Lima: San Ignacio de Loyola.