SCIENTIFIC CULTURE

www.sci-cult.com

SCIENTIFIC CULTURE, Vol. 11, No. 4, (2025), pp. 2067-2082
Open Access. Online & Print

DOI: 10.5281/zenodo.11425260

CREATIVITY AS A FACTOR THAT DRIVES INTERDISCIPLINARITY IN THE TRAINING OF UNIVERSITY STUDENTS

María del Mar Restrepo Villarroel[1*], Yenny Cristina Solano Velásquez[2], María de las Mercedes Colina[3], Lesby Johanna Lora Carrillo[4], Yeimis Catalina Cervantes Támara[5], María Martha Daza Mejia[6]

[1]Universidad Popular del Cesar, Colombia, mdrestrepo@unicesar.edu.co
[2]Universidad Popular del Cesar, Colombia, yennysolanov@unicesar.edu.co
[3]Universidad Popular del Cesar, Colombia, mcolina@unicesar.edu.com
4Universidad Popular del Cesar, Colombia, lesbylora@unicesar.edu.co
5Universidad Popular del Cesar, Colombia, yccervantes@unicesar.edu.co
6Universidad Popular del Cesar, Colombia, mmarthadaza@unicesar.edu.co

Received: 11/11/2025
Accepted: 18/12/2025

Corresponding Author: María del Mar Restrepo Villarroel (mdrestrepo@unicesar.edu.co)

ABSTRACT

The objective of the research is to analyze creativity as a factor that drives interdisciplinarity in the training of students of the Art degree of the Popular University of Cesar, considering to support the theoretical constructs authors such as (López 2018; Fernández et al., 2019; Salguero 2019; Morales 2017) among others. Its methodology was oriented from the quantitative paradigm, with a non-experimental, descriptive field design, transactional. For the intentional sample, 87 students and 11 teachers of the Faculty of Art were taken, to whom a questionnaire with a Likert scale was applied, containing statements that allowed analyzing the indicators of each dimension, yielding a highly reliable result of 0.933 for students and 0.902 for teachers. With reference to the findings, it was possible to verify how creativity drives the behavior of the actors of the educational process at the system level to develop projects of value for both the university context and the community, considering the different capacities that make up interdisciplinary work, respecting the structure, norms, procedures, language and the acceptance of the contributions of other disciplines.

KEYWORDS: Creativity, Interdisciplinarity, Faculty of Art, Popular University of Cesar.

Copyright: © 2025. This is an open-access article distributed under the terms of the Creative Commons Attribution License. (https://cre-ativecommons.org/licenses/by/4.0/).

1. INTRODUCTION

Worldwide, the universities of the twenty-first century are involved in complex scenarios of uncertainty, with a teaching-learning process in the field of the arts marked by mechanism, repetitive memory; as well as the formalities of the traditional framework, with a lack of strategic and methodological tools that promote innovation and reinforce the ability to analyze, explain and apply the knowledge acquired from the experience of the real context, distancing itself from the development of creative skills from an interdisciplinary approach that complements higher level training. (Hurtado et al., 2018).

In this sense, international references such as those presented by Castro (2023), Pérez et al, (2021), Campos and Palacios (2018), Rodríguez et al., (2023) and others, confirm that this panorama limits the work of students and teachers to develop their academic and artistic skills, since generally in the ideas that are presented for the achievement of a project, the criteria and reason of the subject with more experience prevail; which leads to interrupting the presentation of different alternatives that complement the work of an interdisciplinary team, negatively impacting the planning, execution and evaluation of any problem that needs to be solved.

Under the approaches of Barba, (2020), in order for universities in the field of art training to be able to align themselves with the demands of the environment, they need to use creativity tools as part of the pillars of the new millennium that drives social development, training professionals not only with knowledge, but also with competencies that encompass doing and being, with the ability to face the challenges present in their professional practice in a systemic way; which implies the need to make curricula more flexible with interdisciplinary orientations that direct their strategies towards the development of creative thinking and innovation.

Under this scenario, Vygotsky (2012), cited by Ramírez et al., (2017), alludes to creativity as the ability of the subject to generate something new, either by reflection of the outside world or by certain stimuli and cognitive skills that are produced in the brain, originating a unique feeling of the human being (p. 2). Under this line of reasoning (Zaro, 2021), he affirms that creativity is present in both teachers and students of this century, without having exclusivity of age, gender or condition.

In addition, it becomes a challenge of pedagogy, since simultaneous visions are needed to establish an interdisciplinary process that contributes to deciphering the problematic nodes of a situation, to achieve a product for the benefit of a group, (Alcívar & Baquero, 2022), which in turn strengthens relational competencies and reinforces the meaningful learning of those who share the project.

For his part, Van Der Linde (2014) concludes in his research that the importance of interdisciplinarity in creative education lies in the pedagogical interaction that is established between various disciplines where elements of communication, collaboration, dialogue and trust are present "to achieve the goal of new knowledge" (p. 11), that is, the contribution of research methods and scientific concepts that consider the reality of the problem from the perspective of the concept is indispensable. systemic perspective, even with effects associated with emotions, intelligence, personal and professional growth. López (2017).

On the other hand, in Latin America, the antecedents presented by (Rex 2019; Rosso 2020); among others, on creativity and interdisciplinarity in university contexts; confirm that in countries such as Chile, Mexico, Argentina, Bolivia and Colombia, the approach to creativity is dismissed as a subject in the curricular mayas of higher education institutions, affecting the training of future professionals.

They also conclude in their research that teachers are rooted in old paradigms working under an intellectual egocentrism with didactic actions that lack scientific language and information processing considering the behavior of the system, only on specific occasions do they consider the participation of other disciplines to complement the construction of knowledge and innovate in academic production. a scenario that is replicated for students who mostly prefer to develop their activities individually, invalidating the results that can be achieved through work teams, affecting academic development; therefore the expected results.

In this regard, the UNESCO Report (2020) states that teachers as pedagogues of the twenty-first century have a leading role in the development of students' creativity, affirming that universities as a pillar of knowledge must assume the responsibility of guiding training towards innovative results where elements of science and innovation are present. (Morín, 2021).

Hence, the training of graduates in art requires focusing creativity by supporting the divergent thoughts of the work teams that lead to the development of inspirational and intuition skills, reducing dissatisfaction with the academic work developed in the practices of the future professional; since creative capacity can be fostered through innovative strategies used within the classroom.

In this order of ideas, the universities of this millennium need a change in teaching processes by taking innovation; (Córdoba et al., 2018; Ramírez et al., 2017), as an alternative that offers teachers and students to promote and generate competencies to organize and execute interdisciplinary creative projects with conditions that impact social groups.(Córdoba-Zúñiga, 2018)

However, when considering the binomial that the university forms with knowledge, it is necessary to verify the strategies used within the classrooms and to begin to establish innovative practices with the intervention of different disciplines, recognizing that every subject is creative (López, 2017).

Under this scheme, authors such as Valera and González (2015), Zaro (2016) and Fernández et al., (2019), from their perspectives, assume creativity as a process in continuous construction that encompasses personal self-realization, intelligence and also previous experiences as a means of creating meaningful memories with relevant information to create a link with imagination and curiosity permanently. As Morín (1919) states, this integration fosters bridges for the field of knowledge and is enriched through the dialogue of disciplines to provide solutions in the real world.

In agreement, Bolio (2019) and Moreno (2023) state that interdisciplinarity seeks the integration of the capacities of the different areas that participate in a creative project, to achieve agreements at the theoretical, methodological and experiential levels. This approach requires the management of a systemic perspective where the breakdown of judgments about different ideas and a divorce with the correct answers and schematic or repetitive strategies are considered. (Aldana 2017).

It should be noted that the development of the Colombian educational system is framed in high-quality accreditation projects, following international standards; as well as the guidelines established by the Ministry of Education and the 1994 law, granting permission to higher institutions to incorporate models and methods under an academic autonomy adapted to the specific needs of each region.

However, even when Colombian universities renew their qualified registration by updating programs and micro-curricula, studies carried out by Ospina (2022), Sarmientos (2023), Rodríguez et al., (2023), reveal that there is an incongruity between what is said about pedagogical practice and the development of creative competencies and what is actually done with both indicators in the classroom. which represents a problem that limits academic productivity.

Similarly, it is evident that the proposed contents and the activities carried out generally lean towards particular interests, fading the benefit of interdisciplinary experiences to form knowledge competencies in accordance with the current demands of the environment. A situation that results in student participation being reduced to a limited space for the exchange of ideas with other disciplines that can enrich their improvement in the skills acquired to develop in the field of

By emphasizing this situation and placing it in the regional context, it can be interpreted that the Popular University of Cesar is a reflection of international and national problems. Among the academic programs offered is the Bachelor's Degree in Art, whose professional profile recognizes from a systemic point of view the link between creative knowledge and disciplinary knowledge, with reflections that support the graduate to develop their skills and competencies and apply them in their professional practice.

However, the dynamics of their relationships show that there are limitations to bring creativity to its maximum potential, since intellectual egocentrism is commonly observed that prevents interdisciplinary work, lack of conditioning in the physical structures that generate greater academic enthusiasm, teachers and students demotivated by scientific work that endorses the projects, as well as artistic works that remain inside the classrooms of causing dispersion of ideas and lack of interest in taking them to another level other than academic. (López 2017).

In this regard, Reynoso and Pons (2022) assure that in order to train competent educators in the area of the arts, it is necessary to modify the curricular content and the strategies used within the classroom to meet the real needs of the groups in formation, with interdisciplinary resources that connect with the essence of the student to understand and implement the information received respecting the diversity of thoughts. Therefore, as the construction of creative projects integrating different disciplines becomes possible, in that order the traditional way of teaching will change and spaces will be created that generate creative and interdisciplinary academic commitments.

Under this interpretation, the present study seeks to analyze creativity as a factor that drives interdisciplinarity in the training of students of the Bachelor of Arts of the Popular University of Cesar by posing the problematic question oriented to: How creativity drives interdisciplinarity in the training of students of the Bachelor of Arts of the Popular

University of Cesar?

Based on the above assumptions, it is necessary to follow a systematized guide that identifies what are the components of creativity, as well as describe what are the elements of interdisciplinarity in the training of students of the bachelor's degree program in art at the Universidad Popular del Cesar, to then establish practical strategies that respond to their needs in order to strengthen the execution of interdisciplinary creative projects in convergence with the professional competencies necessary to exercise an innovative career in the country and the world.

2. THEORETICAL FOUNDATION

2.1. Creativity

For Hurtado et al., (2018), they are skills that people have to imagine and materialize an idea generating a solution to a given problem; in coincidence, the studies of (López and Llamas 2018, López 2017; Fernández et al., 2019; Salguero 2019; Morales 2017), affirm that creativity is directed by the curiosity of those who periodically ask questions to explore the environment and even to modify it, generating opportunities and different ways of dealing with the same problem.

It can also be defined as a "set of skills linked to personality that allow him/her, based on previous data and through a series of internal (cognitive) processes, to transform them to offer the solution to a dilemma with originality and effectiveness" (Bassat, 2014. p.13).

However, for (Castillo et at., 2016), in their neuropsychology study, they confirm that creativity in the teaching process is directly related to motivation, enthusiasm, multiple intelligences, and the executive function of learning. For their part, the research by Muñoz and Martínez (2023); Campos & Palacios, 2018 and Fernández et al., 2019); They agree that creativity plays a crucial role in interdisciplinarity, since from the incorporation of different perspectives and dialogue with other disciplines, knowledge is built that generates possibilities for addressing the complexity of a context and opens opportunities that enrich the practices of art professionals.

In this sense, within an artistic and interdisciplinary context (Morales, 2017. p.56), it validates that creativity can be seen from production, thought and also as a personality trait present in any professional area, which is developed with individual or collaborative practices; Both require joint work where connections are established for the benefit of a system and achieve an extraordinary result.

In this particular, to see creativity from a systemic approach where different thoughts meet to execute a project, is to talk about the interactions that occur in creative processes and their relationship with the context Csikszentmihalyi 1998 cited by Campos., et al (2018), where elements such as knowledge, the person, the environment, process and product.

2.1.1 Components of creativity. For Campos et al., (2018), multidimensional factors that are part of the creative process are related to each other under a certain context to achieve the proposed objectives, which are described below:

Person: refers to the individual capacity of talent, in the case of teachers and students they are intrinsically the staging of personality traits, motivation and cognitive styles, recognizing that individually these aspects characterize their way of interrelating with the other, supporting the creation of an innovative product adapted to the context. In the same way, in the spaces of development of training for future professionals of the Bachelor of Arts degree, it is necessary to apply technical skills and particular skills to permeate the process of interdisciplinary creativity with responsibility, capacity for wonder, detachment, enjoyment, among others. (Campos, et al 2018. p.174).

Knowledge: it is the ability that students and teachers have under interdisciplinary work to connect with the particular rules and procedures in each discipline amalgamating the cognitive energy that allows expanding the field of action of a project, in this sense the creativity marked from knowledge in future professionals is anchored to a theoretical framework that represents each discipline facilitating an inclusive academic practice with the effectiveness of facing the challenges of each planned project.

The product: it is the reflection of the creative process evidenced through the fulfillment of the initial objectives set by the interdisciplinary team, it is evidenced as a result of a joint and synchronous effort, where the added value that distinguishes it from other products with the same characteristics can be identified. (Trisan & Mendoza 2016).

Processes: it is oriented to the execution of the actions that the interdisciplinary team will take to present the proposed project, motivation and emotions must be present as elements that dynamize creativity, marking the process from the generation of ideas to their materialization. Ramírez et al., (2017) comment on creativity as the ability of the individual to maintain the focus of the development of a project in four stages: preparation (explores), incubation (thinking non-consciously), enlightenment (the idea appears spontaneously) and verification (validation

of the idea consciously).

On the other hand, in order for the process of obtaining the final product to be innovative , Cabello (2017) proposes to follow Bloom's taxonomy with the possibility of combining several elements in coherence and functionality, for this three phases are taken: the first is directed towards the generation of ideas encompassing the understanding of the task under divergent thinking that captures the alternatives of action with solutions, secondly, the analysis, planning or systematization of the resolution of the problem with convergent thinking; finally, execution or production, which materializes the plan, which does not imply a single solution.

Environment: implies the contextual space where the interdisciplinary team creatively makes decisions about the product that is generated, according to (Campos., et al 2018. p.175). who quotes (Labarrere, 2005), "the environment where the individual is inserted will condition whether these skills are developed, enhanced or inhibited". Hence, the conditions provided by the university in the bachelor's degree programs in art to create designs or creative projects must allow the fluidity of ideas in each proposed process. (Morales, 2017) with a creative environment that provides opportunities to take advantage of individual talents and produce divergent responses.

Therefore, when considering the elements described above for the development of creativity in interdisciplinary processes, agreements between the parties are encouraged through inclusive language that respects divergent thoughts, as well as the particularities of the participants, enriching the process and ensuring that the proposed objectives are achieved with a minimum of errors.

In conclusion, the elements of creativity immersed in interdisciplinary work when they are part of the teaching-learning process of future art graduates, conditioning factors for the creative practices of the projects presented, additionally expand the possibilities of their academic competencies to face the challenges of a complex and demanding environment. (Hurtado et al., 2018).

2.2. Interdisciplinarity

For Thompson (2021), it is the integration of knowledge and methods from various disciplines that address complex problems in a systemic way, transcending traditional disciplinary boundaries; through it, effective collaboration is fostered both in research and in practice Llano (2016); that is, interdisciplinary work leads to facing multifaceted challenges that cannot be solved from a single disciplinary perspective. To this end, it is necessary to share spaces, methodologies in a framework of systemic knowledge where agreements are established, to reach the most effective solution that benefits the context. (Sarmiento, 2023; Wang et al., 2020).

2.2.1. Elements of Interdisciplinarity

Systemic conception: consists of identifying the problem from different perspectives or points of view, evaluating both external and internal factors linked to it, in order to establish objectives with measurable and improvable actions through a plan aimed at solving the situation under study.

Institutional structures and procedures: refers to the normative, procedural, conceptual, and regulatory bases that regulate interdisciplinary work, serving as a guide for the execution of cooperative action plans with creative activities that promote the integration of students with other disciplines and other sectors of knowledge.

Interdisciplinary research: refers to the ability of actors from different disciplines to follow a systematized methodology and understand the problem from a dynamic that unifies points of view and strengthens the view of creativity to mark the path that best suits the solution to it.

Scientific language: It is oriented to the use of the linguistic varieties of an interdisciplinary team during the execution of a project, using with precision and objectivity a language in the field of science, in such a way that discoveries, theories and data can be communicated in an expensive way, without ambiguities, therefore, it requires the construction of agreements that validate the problem to be solved with unified and operational ideas based on thinking creative.

Intellectual egocentrism: It refers to the cognitive tendency to understand things only from one's own perspective, that is, the inability to recognize the position of the other on an issue is evident; therefore, appearing in an interdisciplinary team hinders creativity by limiting the exploration of innovative ideas.

Interdisciplinary collaboration: This refers to the cooperation between different disciplines that provide knowledge to address complex problems in a holistic and effective way, involving the integration of the participants' capacities with creative methods that allow them to solve challenges within a research and educational context.

In this order of ideas, the elements of interdisciplinarity are revealed as determining factors to promote creativity in the training of art

students at the Popular University of Cesar; since, when considered as part of the creative process, they promote the knowledge of the actors, expanding the innovative possibilities to solve problems from different perspectives. In addition, when a methodology with clear rules and procedures is integrated, spaces are opened with opportunities to create dynamic learning environments that strengthen relationships and invite experimentation and exploration, nurturing the creative process. (Reinoso & Pons, 2022).

3. METHODOLOGY

Following the parameters established by Hernández-Sampieri (2018), this article follows a quantitative route, understanding that the problem posed seeks to analyze creativity as a factor that drives interdisciplinarity in the training of university students under a rigorous and systematically organized process to test some assumptions of the variables studied; selecting, for this, specific units in a given context and then establish the results statistically, extracting the respective conclusions and recommendations.

Under this premise, the type of research is analytical with a descriptive field method, cross-sectional, non-experimental since it seeks to identify, describe and characterize the particularities of the reality of a context from a scientific field at a single time, recognizing that the analysis of the results is based on the instruments applied to a specific sample, where the data provided support interpretation without the need to manipulate the variables. (Arias, 2015).

To follow the procedure with an intentional sample, 11 (eleven) teachers and (87) eighty-seven students whose similar characteristics were focused on academic condition, age, semester studied and willingness to participate, allowing the results to give a meaning with greater objectivity. (Hernández, et al., 2014).

Regarding the data collection technique to analyze and link the measurements obtained, two questionnaire-type surveys were constructed, Likert scale with closed statements corresponding to the dimensions studied: components of creativity and interdisciplinarity processes, for which a scale of interpretation of the mean with ranges of alternatives was constructed which allowed measuring the reliability of the instrument applied. (See Table 1)(Martínez, 2018)

Table 1: Scale for the Interpretation of the Mean.

Alternatives	Category	Limits	Result
Always	Very high proficiency	$4.21 \geq X < 5.00$	Favorable
Almost always	High dominance	$3.41 \geq X < 4.20$	
Sometimes	Moderate proficiency	$2.61 \geq X < 3.40$	Neutral
Almost never	Low dominance	$1.81 \geq X < 2.60$	Not favorable
Never	Very low proficiency	$1.00 \geq X < 1.80$	
Source: Martínez (2018)			

4. RESEARCH RESULTS

Table 2: Alpha C Coefficient. Students.

varianza de los ítems	Sŧ^2	43,41673349
varianza de la suma de los ítems	SŁ^2	458,0347501
item	K	33
	K-1	32
coeficiente Alfa Cronbach	ɑ	0,9335

Source: Own elaboration (2024). In Original language (Spanish)

Table 3. Alpha C Coefficient. Teachers.

varianza de los ítems	Sŧ^2	64,6909091
varianza de la suma de los ítems	SŁ^2	517,2
item	K	33
	K-1	32
coeficiente Alfa Cronbach	ɑ	0,9023

Source: Own elaboration (2024). In Original language (Spanish).

Tables 2 and 3 show reliability through the Cronbach alpha coefficient, where students gave a result of 0.9335 and teachers 0.9023, both with high reliability

Variable: Creativity
Dimension: Components of Creativity.
Average Students: 2.93 / Average Teachers: 3.10

Figure 1: People. Students.
Source: Own Elaboration (2024) In original language (Spanish).

Figure 2: People. Teachers.
Source: Own Elaboration (2024) In original language (Spanish).

Within the creativity variable, Components of Creativity Dimension yielded moderately dominant results neutral result for both samples, with 2.93 for students and 3.10 for teachers. In this sense, people with a result of 3.77 high proficiency were validated for the indicator, that the sample composed of students indicate in 59% that they always and almost always recognize their competencies and creative skills, however, they have difficulty creating an innovation product that adapts to a given context; As for teachers with a high proficiency average of 3.58, they also indicate that they distinguish their creative capacity and know how to use it within a strategy to achieve a certain objective with students. (see Figures 1 and 2)

In reference to the knowledge indicator with a low result of 2.25 for students, denoting in 66% almost never and never manifest knowledge of the rules and procedures that are necessary to carry out interdisciplinary work with creativity, limiting their action within a project; likewise, teachers with an equally low proficiency score of 2.44 affirm in 67% that they never and almost never take into account standardized procedures as a discipline that can support them in the development of an inclusive creative practice. (see Figures 3 and 4).

Figure 3: Knowledge. Students.
Source: Own Elaboration (2024) In original language (Spanish).

Figure 4: Knowledge. Teachers.
Source: Own Elaboration (2024) In original language (Spanish).

However, in the product indicator with a result of 3.40 moderate mastery neutral result for students, it is observed that 45% of the respondents state that they always and almost always manage to achieve the objective but with disagreements and limitations to execute collaborative actions that highlight creativity; In the case of teachers, with a moderate neutral result of 3.30, 64% of them affirm that only sometimes the final product presents high quality standards with an added value that distinguishes them. (See Figures 5 and 6).

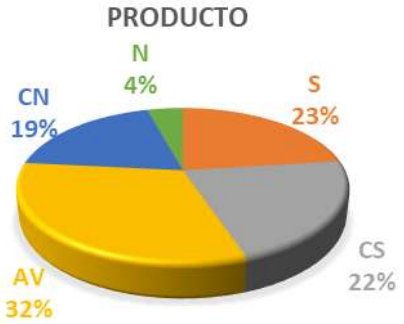

Figure 5: Product. Students.
Source: Own Elaboration (2024) In original language (Spanish).

Figure 6: Product. Teachers.
Source: Own Elaboration (2024) In original language (Spanish).

Likewise, in the process indicator, an unfavorable result under mastery of 2.59 for students, it is observed that 48% of the respondents agree that the motivation to develop spontaneous ideas is almost never present and never within teamwork and consciously verify that they can be successfully viable; however, in the case of teachers with a moderate neutral result of 3.33, it is evident that 58% of them indicate that they almost always and always use Bloom's taxonomy and the four stages of development of a project to guarantee students that the ideas are understood and can capture alternative solutions that materialize the idea. (See Figures 7 and 8).

Figure 7: Process. Students.
Source: Own Elaboration (2024) In original language (Spanish).

Figure 8: Process. Teachers.
Source: Own Elaboration (2024) In original language (Spanish).

On the other hand, in Figures 9 and 10, the environment indicator is validated with a moderate neutral result dominance for both samples, (2.64 students) and (2.85 teachers), where the vast majority indicate that almost never and never (47% of students) and only sometimes (73% of teachers) that it has conditioned spaces that facilitate them to carry out interdisciplinary work in a creative way. limiting decision-making in the generated product in order to expose it in contexts other than the university.

Figure 9: Environment. Students.
Source: Own Elaboration (2024) In original language (Spanish).

Figure 10: Environment. Teachers.
Source: Own Elaboration (2024) In original language (Spanish).

Variable: Interdisciplinarity Average Students: 2.75 / Average Teachers: 3.28
Dimension: Elements of Interdisciplinarity

Figure 11: Systemic Conception–Students.
Source: Own elaboration (2024). In original language (Spanish).

Figure 12: Systemic Conception–Teacher.
Source: Own elaboration (2024). In original language (Spanish)

For the interdisciplinarity variable, in the dimension Elements of Interdisciplinarity, an average of 2.75 students is observed with a moderate mastery neutral result and teachers with an average of 3.28 equally moderate mastery.

In the case of students, the systemic conception indicator yielded an average of 2.80, stating that both 41% of the sample, as well as 31% only sometimes and almost never respectively have elements to be able to globally identify factors that positively or negatively affect creativity in an interdisciplinary way.

In the case of teachers, the result of the indicator was 3.39, where 43% and 18% indicate that they always and almost always seek information from other colleagues to apply strategies that promote creativity in their students. (See Figures 11 and 12).

Figure 13: Institutional Structures and Procedures. Students.
Source: Own elaboration (2024). In original language (Spanish)

Figure 14: Institutional Structures and Procedures. Teachers.
Source: Own elaboration (2024). In original language (Spanish)

In relation to the indicator Institutional structures and procedures, both show a similar result with moderate neutral dominance where students with an average of 3.28 indicate in 56% that they almost never and sometimes know the regulations that the university has to work in an interdisciplinary way, even when there are activities that are carried out in a cooperative way; the teachers, on the other hand, with an average of 3.24 where both 43% of the sample as well as 9% affirm that they always and almost always have creative activities to integrate their students with other disciplines based on the requirements of the Faculty of Art. (Figures 13 and 14).

Figure 15: Interdisciplinary Research. Student.
Source: Own elaboration (2024). In original language (Spanish).

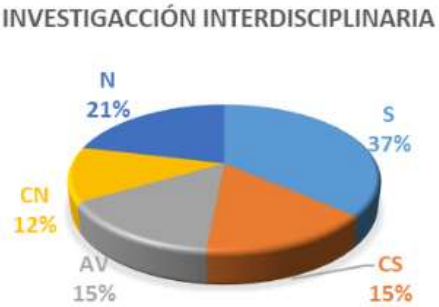

Figure 16: Interdisciplinary research. Teachers.
Source: Own elaboration (2024). In original language (Spanish).

On the other hand, the Interdisciplinary Research indicator presented an average of 2.50 under dominance unfavorable result, where 40% of the respondents indicate that they only sometimes have knowledge of a systematized Methodology that leads them to discern between different points of view to draw a single conclusion that promotes problem solving by applying creative thinking; a position endorsed by 37% of the students who stated that they almost never they apply this type of tool. On the other hand, 52% of teachers with an average of 3.33 moderate proficiency neutral result indicate that they always and almost always use research methodologies with exercises that facilitate them to obtain an overview of the situation studied in order to activate the problem-solving capacity of their

students. (See Figures 15 and 16).

Figure 17: Scientific Language. Students.
Source: Own elaboration (2024). In original language (Spanish).

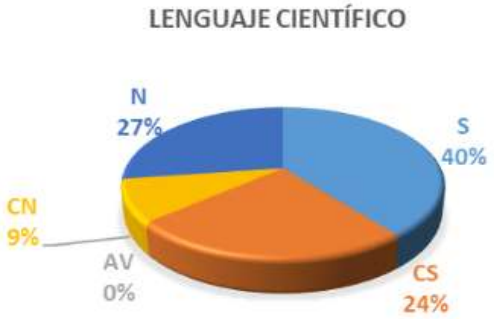

Figure 18: Scientific Language. Teachers.
Source: Own elaboration (2024). In original language (Spanish).

For the scientific language indicator, the sample composed of students affirmed with a moderate neutral result of 2.61 mastery, 36% affirmed that they only sometimes use a scientific language with precision that locates actions that lead to creativity; likewise, 32% confirm that they almost never know how happy to use scientific language to develop creative projects; on the other hand, teachers with a neutral result of 3.39 moderate dominance contrary to the position of the students, they point out mostly represented by 64% that they always and almost always use scientific language without ambiguity for the construction of agreements that guide the execution of creative activities. (see Figures 17 and 18)

In the case of the Intellectual Egocentrism indicator, the students gave a result of 2.87 moderate domain where 56% indicate that sometimes and almost never they differ from the opinions of others or place their position above other people who work together with them to develop a creative proposal; contrasting with the position of the teachers, those with an average of 3.94 high proficiency favorable result 79% maintain their position in front of a team when cooperative work is carried out, generating in some cases obstacles or limitations to reach agreements that benefit the entire team. (See Figures 19 and 20).

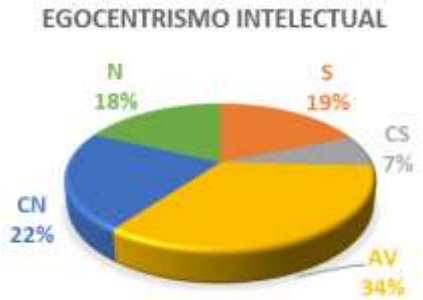

Figure 19: Intellectual egocentrism. Students.
Source: Own elaboration (2024). In original language (Spanish).

Figure 20: Intellectual Egocentrism. Teachers.
Source: Own elaboration (2024). In original language (Spanish).

On the other hand, the interdisciplinary collaboration indicator, with a low dominance of unfavorable results for both samples (2.46 students) and (2.36 teachers), denote the absence of collaboration between the different disciplines to find the feasibility that provides creative solutions to situations evaluated in teams, in such a way that 63% of the students state that they have limitations to work in a team contributing their competencies in favor of a positive conclusion; likewise, 67 of the teachers indicate that it is always and almost always difficult for them to discuss ideas to reach a group consensus. (see Figures 21 and 22).

Figures 21: Interdisciplinary Collaboration. Students.
Source: Own elaboration (2024). In original language (Spanish).

Figures 22: Interdisciplinary Collaboration. Teachers.
Source: Own elaboration (2024). In original language (Spanish).

4.1. Pedagogical Guidelines That Promote Interdisciplinary Collaboration

Considering the results of the surveys carried out and the theoretical review of Llevadot, 2018), (Campo 2018), (Castro, 2021) the proposal on the pedagogical guidelines that promote interdisciplinarity in collaborative pedagogical practices framed in the institutional pedagogical project of the Popular University of Cesar cognitive, behavioral, contextual of a constructivist nature is presented below, so that, It can be incorporated as a transversal axis of the academic curriculum of the Faculty of Art, offering teachers and students the possibility of having a procedure that facilitates the exchange of disciplinary ideas and strengthens the construction of art practices adapted to the challenges of

a complex and globalized world.

Table 4: Pedagogical Guidelines to Promote Interdisciplinarity in Collaborative Artistic Practices.
Source: Own elaboration (2024). In original language (Spanish)

Objetivo General: Proponer lineamientos pedagógicos que fomenten la interdisciplinaridad para el desarrollo de prácticas artísticas colaborativas en los estudiantes de arte de la Universidad Popular del Cesar		
Lineamiento 1: Contemplar la flexibilidad curricular para permitir la integración efectiva de contenidos de diferentes disciplinas que minimicen las barreras colaborativas	Para el logro de estos lineamientos se propone una metodología conformada por 3 fases:	Fase 1. Diagnóstico: elaborar instrumentos que revelen la situación actual entre estudiantes, docentes de las diferentes facultades de la universidad para determinar el grado de receptividad para la participación en prácticas artísticas colaborativas, así como su posición sobre la promoción de la diversidad, la inclusión y el trabajo con las comunidades.
Lineamiento 2: Integrar las TIC en la promoción de la colaboración interdisciplinaria y el acceso a recursos especializados.		Fase 2. Diseño y ejecución de planes de acción que involucren estrategias pedagógicas interdisciplinarias para el desarrollo de habilidades transversales, sociales y de comunicación que faciliten el trabajo colaborativo.
Lineamiento 3: Desarrollar de habilidades transversales, sociales y de comunicación, que faciliten el trabajo en equipo, la comunicación y la resolución de problemas constructivamente.		Fase 3. Evaluación periódica: para verificar el logro de los objetivos reorientando el proceso de ser necesario en función de integrar en los contenidos programados con prácticas investigativas que contemplen la unificación de criterios entre las distintas disciplinas y se pueda ampliar el campo de difusión de las diferentes actividades programadas por la facultad de artes plásticas llevándolas a contextos externos que beneficien a la comunidad.
Lineamiento 4. Establecer políticas educativas en la facultad de arte que contemplen la investigación y la extensión de las prácticas artísticas colaborativas interdisciplinares en beneficio de la comunidad.		

5. CONCLUSION

According to the results obtained as a result of the application of the survey to teachers and students, it is concluded:

For the components of creativity category, both teachers and students have the qualities and willingness to develop creative projects for the benefit of the art faculty; however, they lack knowledge to guide them on the application of standards and procedures to achieve a high-quality product, in addition the university context has limitations for the actors in the process to expand their radius of action and reach other environments through interdisciplinary projects that generate value to the community.

In relation to interdisciplinarity; The selected sample composed of students shows a lack of collaboration when executing a project, with a marked limitation of the use of scientific language and research that hinders having a systemic conception with structure to work according to the opinions of the team members; On the other hand, teachers denote a rigid position referring to their knowledge, lacking flexibility when it comes to sharing their experiences with other colleagues to nourish the process of creative work.

To answer the question, How does creativity promote interdisciplinarity in the training of students of the Bachelor of Arts of the Popular University of Cesar? It was found that creativity as an intrinsic element in the human being drives the processes of knowledge in people to obtain a product and modify an environment considering the different structures that are presented in an interdisciplinary work. as long as a systemic conception is maintained with an appropriate language capable of recognizing the other from their individual contributions, in such a way that collaboration is established with joint agreements to achieve the purpose of an objective.

To conclude, as for the pedagogical guidelines, these are structured based on the results as a reference that guides the actors of the process towards a complementary joint work in knowledge, allowing to distinguish the specific characteristics of the environment and the participants to build creative thinking and strengthen the interdisciplinary role that must be carried out in the teaching-learning process at the university level.

REFERENCES

Alcívar, & Baquero. (2022). *Creative teacher competencies and significant learning of students in the El Ceibo de Chone community*. *Sinapsis Journal*, 1(21). Retrieved from https://revistas.itsup.edu.ec/index.php/sinapsis/article/view/603/1377

Aldana, G. (2017). *Innovative culture in the organization of the information and communication technology department of the University of Zulia*. *REVECITEC*, 7(2), 73–96. Retrieved from http://ojs.urbe.edu/index.php/revecitec/article/view/3020

Arias, F. (2015). *The research project* (Sixth ed.). Episteme. Retrieved from https://es.slideshare.net/fidiasarias/fidias-g-arias-el-proyecto-de-investigacin-6ta-edicion

Bassat, L. (2014). *The keys to creative thinking*. Connects. Retrieved from https://core.ac.uk/download/pdf/38818606.pdf

Beard. (2020). *Development of creativity in teachers through workshops*. CAUHTEMOC University. Retrieved from https://uconline.mx/comunidadead/application/views/repositoriodetesis/TesisfinalEduardoRiveraArteaga.pdf

Bolio, P. (2019). *Multi-, inter-, and transdisciplinarity*. *Journal of Philosophy and Theory of Law*, (13), 347–357. Retrieved from http://dx.doi.org/10.22201/iij.24487937e.2019.13

Cabello, M. (2017). *Stages of the creative process of artistic production. Case study of four visual artists*. Universidad Autónoma de Nuevo León. Retrieved from http://eprints.uanl.mx/17673/1/1080262512.pdf

Campos Cansino, G., & Palacios. (2018). *Creativity and its components*. *Creativity and Society*, (27), 167–183. Retrieved from http://creatividadysociedad.com/articulos/27/7.La creativity and its componentes.pdf

Castillo-Delgado, M., Ezquerro-Cordón, A., Llamas-Salguero, F., & López-Fernández, V. (2016). *Neuropsychological study based on creativity, multiple intelligences and executive function in the educational field*. *ReiDoCrea*, 5. Retrieved from https://www.ugr.es/~reidocrea/5-2.pdf

Castro. (2021). *Opportunities and challenges for the teaching of the arts, media education and ethics in the post-digital era*. Dykinson, S.L.

Castro. (2023). *Didactic proposals to develop creativity in students of the first basic cycle through visual arts*. Metropolitan University of Education Sciences. Retrieved from http://bibliorepo.umce.cl/tesis/artes_visuales/2023_propuestas_didacticas_para_desarrollar_la_creatividad_en_estudiantes_de_primer_ciclo_basico_a_traves_de_las_artes_vi.pdf

Córdoba-Zúñiga, E. C.-T.-Q. (2018). *Creativity and innovation: Engines of business development*. *Lámpsakos*, 1(19), 55–65. Retrieved from https://doi.org/10.21501/21454086.2663

Fernández Díaz, J. R., Llamas Salguero, F., & Gutiérrez-Ortega, M. (2019). *Creativity: Concept review*. *REIDOCREA*, 8, 467–483. Retrieved from file:///C:/Users/HCG/Downloads/Articulo_creatividad.pdf

Hernández, R. F. (2014). *Research methodology* (Sixth ed.). Mexico: McGraw-Hill. Retrieved from https://apiperiodico.jalisco.gob.mx/api/sites/periodicooficial.jalisco.gob.mx/files/metodologia_de_la_investigacion_-_roberto_hernandez_sampieri.pdf

Hernandez-Sampieri. (2018). *Research: The quantitative, qualitative and mixed routes*. Universidad de Celaya – Universidad Tecnológica Laja Bajío. McGraw-Hill Interamericana Editores, S.A. de C.V. Retrieved from http://www.biblioteca.cij.gob.mx/Archivos/Materiales_de_co

Hurtado, P. A., García, M., Rivera, D. A., & Forgiony, J. O. (2018). *Learning strategies and creativity: A relationship that favors information processing*. *Revista Espacios*, 39(1). Retrieved from https://www.revistaespacios.com/a18v39n17/a18v39n17

Llano Arana, L. (2016). *Interdisciplinarity: A contemporary need to promote the teaching-learning process*. *Scielo Magazine*. Retrieved from http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1727-897X2016000300015

López, F. V., & Llamas. (2018). *Neuropsychology of the creative process: An educational approach*. *Complutense Journal of Education*, 29(1), 113. Retrieved from file:///C:/Users/HCG/Downloads/Neuropsicologia_del_proceso_creativo_Un_enfoque_ed.pdf

López, R. (2017). *Creative strategies for teaching meaningful learning to students in pediatric practice I*. University of Carabobo. Retrieved from http://www.riuc.bc.uc.edu.ve/bitstream/12345

Martínez, C. (2018). *Descriptive research: Definition, types and characteristics*. Retrieved from https://www.lifeder.com/investigacion-descriptiva

Morales, C. M. (2017). *Creativity: A scientific review*. *Scientific Journal of Architecture and Urbanism*, 38(2), 53–62. Retrieved from https://www.redalyc.org/pdf/3768/376852683005.pdf

Moreno, J. (2023). *Philosophy of education, transdisciplinarity and teacher training*. PhilPapers. https://philarchive.org/rec/JEFFDL

Morin. (2021). *The seven necessary knowledges for the education of the future*. Paris: UNESCO.

Morín, E. (2019). *What is transdisciplinarity?* Real-World Multiversity. Retrieved from https://bit.ly/3HadcNW

Muñoz, & Martínez. (2023). *Implementation of an interdisciplinary strategy from the complexity approach in an educational institution*. *PACA Magazine*. Retrieved from file:///C:/Users/HCG/Downloads/00

Ospina, O. (2022). *Creative cognitive processes: A strategic path to promote creativity in university teachers of physics and mathematics*. Javeriana University. Retrieved from https://repository.javeriana.edu.co/handle/10554/63036

Pérez-Ordóñez, C. C.-M.-M. (2021). *Creativity in the Spanish university: A critical analysis of curricula, teaching activity and professional sector needs*. Monograph. Retrieved from https://icono14.net/ojs/index.php/icono14/article/view/1674/1852

Ramírez, L. S. (2017). *Relationship between neuropsychological development and creativity at an early age*. *International Journal of Humanities and Social Science Invention*, 5, 34–40. Retrieved from https://www.ijhssi.org/paper

Ramírez Villén, V., Llamas Salguero, F., & López Fernández. (2017). *Relationship between neuropsychological development and creativity at an early age*. *International Journal of Humanities and Social Science Invention*, 5, 34–40. Retrieved from https://www.ijhssi.org/paper

Rex Correa, P. (2019). *Interdisciplinary experiences in the Faculty of Arts of the University of Chile: Two case studies*. University of Chile. Retrieved from https://repositorio.uchile.cl/bitstream/handle/2250/172979/experiencias-interdisciplinares-en-la-facultad.pdf

Reynoso, Rodriguez, & Pons. (2022). *Art and creativity as tools of teaching practice*. *Journal of Educational Research and Evaluation*, 9(2), 50–68. Retrieved from https://doi.org/10.47554/revie.vol9.num2.2022.pp50-68

Rodríguez, A., Dos Santos G., J. C., Henao M., J. C., Peláez, O. A., Chica R., R. A., & Castrillón Á., E. F. (2023). *Interdisciplinarity for advanced training*. *Educational Pen*, 31(1), 81–101. https://doi.org/10.30554/pe.1.4842

Rosso Mercado, E. (2020). *Interdisciplinarity: Experiences from artistic and cultural education*. University of Antioquia.

Sarmiento, C. (2023). *Interdisciplinarity as a conceptual support in curriculum design at the Friederich Froebel Country Gymnasium in Gachancipá*. Degree project. Retrieved from https://repository.usta.edu.co/bitstream/handle/11634/50380/2023camilosa

Thompson. (2021). *The Oxford handbook of interdisciplinarity* (2nd ed.). Oxford Academic. Retrieved from https://academic.oup.com/edited-volume/27968

Tristán, & Mendoza. (2016). *Taxonomies on creativity*. *Journal of Psychology*, 34(1). Institute of Evaluation and Advanced Engineering. Retrieved from https://revistas.pucp.edu.pe/index.php/psicologia/article/view/14561/15170

Valera, & González. (2015). *Creativity and interdisciplinarity in the teaching-learning process of science in junior high school*. Verona. Retrieved from http://revistas.ucpejv.edu.cu/compendioVar/private/No60/RVNo60A21CE.html

Van Der Linde, G. (2014). *Why is interdisciplinarity important in education? Cuaderno de Pedagogía Universitaria*, 4(8), 11–12. Retrieved from https://cuaderno.pucmm.edu.do/index.php/cuadernodepedagogia/article/view/68/67

Vigotsky, L. (2012). *The development of higher processes*. Austral Publications.

Wang, H.-H., Charoenmuang, M., Knobloch, N. A., & Tormoehlen, R. L. (2020). *Defining interdisciplinary collaboration based on high school teachers' beliefs and practices of STEM integration using a complex designed system*. *Journal of STEM Education*, 7, Article 3.

Zaro. (2021). *Integrative constructs: Creativity, cognitive styles, emotional intelligence*. Open University of Catalonia Foundation (FUOC). Retrieved from https://campus.uoc.edu/annotation/4fc7910ff7aa356c806d4acdf6bac267/833611/PID_00282094/PID_00282094.html

Zaro, M. J. (2016). *Integrative constructs: Creativity, cognitive styles, emotional intelligence*. UOC. Retrieved from https://campus.uoc.edu/annotation/4fc7910ff7aa356c806d4acdf6bac267/833611/PID_00282094/PID_00282094.html