



Teacher training: the relevance of creativity in school

Cristina COSTA-LOBO¹, Jessica CABRERA²

¹ *Departamento e Psicologia e Educação, Portugalense Institute for Human Development, Universidade Portugalense Infante D Henrique. ccostalobo@upt.pt*

² *Departamento de Didáctica y Teoría de la Educación, Facultad de Formación de Profesorado y Educación, Universidad Autónoma de Madrid. jessica.cabrera@uam.es*

Abstract

Some social and educational dissatisfaction occurs when the school focuses almost exclusively on the development of the convergent thinking of the students, forgetting the creativity in a divergent and contextual sense. In this debate there is always some tension that occurs under the difficulties of the experts to reach consensus on a definition of creativity, and then to point out guidelines for their evaluation and training. The controversy that surrounds the evaluation of the construct of creativity has justified the search for alternatives, by some authors, to the similar tests of Torrance, in the fluidity, flexibility, originality and elaboration, resorting to stimuli essentially unfamiliar to the individuals (Lubart, Besançon, and Barbot, 2011). It is assumed a theory of evaluation of the creative potential of the students of basic education, based on verbal and graphic subtests that evaluate the main forms of creative cognition: - Divergent exploratory and convergent integrative thinking. Assuming that creativity is a phenomenon that involves higher levels of consciousness and complexity (Cabrera, 2009); considering the work of Sternberg and Lubart as a theoretical foundation and arguing the results of Costa-Lobo, Coimbra and Almeida (2017), are addressed and epistemologically based didactic options for the pedagogical training of teachers and for the organization of curricular and extracurricular activities of the school, in order to develop creativity in educational contexts.

Keywords: Teacher training, Creativity, Creative potential, educational contexts

Introduction

The study of creativity as a complex phenomenon is proposed in a broader sense than what has been traditionally studied. This makes more sense in the educational field, given the new pedagogical trends that require an approach that integrates the new requirements in the educational institutions, their management teams and teaching staff, and the public policies that respond to a demand that not only deals with the Creative thinking and their possibilities of stimulation and evaluation, but also, consider the advances of knowledge, new technologies and educational improvements that involve contextualized innovations. In this sense, we propose to base the application of creativity in educational contexts, and at school in particular, with an epistemology that integrates the different approaches based on awareness, complexity and transdisciplinarity (Cabrera, 2011) and recent research that addresses some Forms of evaluation and teacher training (Costa-Lobo, Coimbra and Almeida, 2017). For this, the objectives of the shared studies are: to identify how the creativity is understood; to describe an epistemological model that integrates the different fields of knowledge in its field; describe the main guidelines in the evaluation of creative thinking; elaborate a proposal of basic guidelines to develop creativity in educational contexts.

According to Costa-Lobo, Sousa, Campina, Vestena, and Cabrera-Cuevas (2016) the implementation of specific strategies and promoting an appropriate educational environment for the development of creativity signals the importance of the construct to be increased in psychoeducational practices, challenging and multifaceted environments. Almeida et al. (2017) report the need to pay attention to the cognitive and learning processes of gifted children through the identification of measures that allow effective support for their psychological development and school learning; these authors characterize the cognitive abilities of gifted children and their particular forms of learning, evidencing how the current emphasis is no longer placed on quantity but on the functionality of cognitive abilities. Costa-Lobo et al (2016) and Costa-Lobo et al (2017) signaled harmony promotion practices between educational research and psychological intervention, with regard to the development of skills and attitudes that encourage thinking and creative potential.



Complex and transdisciplinary approach to pedagogical training in creativity

The transdisciplinary approach is a characteristic of knowledge, since, as it raises of Herran, "when investigating in a discipline, it ends up in the transdisciplinary" (2010, p.166). Regarding the study of creativity, it is necessary to consider a transdisciplinary and complex approach, since in order to approach its field, diverse disciplines are required, diverse material, spatial, technological resources, diverse methodologies and approaches to define and evaluate it. The complexity as a paradigm, intervenes in the educational task at the epistemological, ontological and methodological level given the multidimensional character of reality that, in Morin's words, forms a joint fabric (2004). Therefore, educational priority should not only be directed to processes of knowledge construction and learning, but also to "issues related to ecological sustainability, planetary citizenship, as a consequence of evolution, intelligence and human consciousness In an integrated perspective "(Moraes, 2007, p.6). The author herself offers us a proposal of possible educational purposes in the following dimensions and their respective indicators: a) Ontological, anthropological and eco-spiritual dimension (Learning to recognize, acquire and commit to aesthetic and spiritual values), b) Cognitive, emotional and Psychophysics dimension (Learning to think, to feel and to know, to learn to take care of the body), c) Ecological and planetary dimension (Learning to take care of the environment, of the planet and to live / to live), Creative and aesthetic dimension And creatively, learning to innovate, think and produce aesthetic and artistic objects), (Moraes, 2015, p 111). To consider, therefore, a complex and transdisciplinary approach, implies a greater adaptation to the particular contexts of this globalized era, where the proposals arise from the pooling with the values that each institution has for purpose, with an adaptive, flexible and open sense to the updates of the educational center itself. On the other hand, it is not only a question of focusing on a part of the system and what should be improved, but also, as Morin (2015) puts it in what must be preserved. In this respect, all changes will be understood in the vision, attitudes and cultural relations of those who make up the educational center, giving meaning to new projects, strategies and new contributions to evaluate creative thinking (Costa-Lobo, Coimbra and Almeida, 2017).

It is urgent to attend to the essential themes of perennial pedagogy, to promote reflective, critical and complex thinking, in order to be better prepared, among other topics, for new ways of perceiving reality and relating to each other that are causing the increase of digital technologies, as proposed by Ken Robinson (2015) regarding to the growing problems, for example, with cyberbullying (Ortega, Calmaestra, & Mora, 2008) and studies that explain how it affects students' emotions (Caetano, A., Freire I., Veiga A., Martin, M. & Pessoa, T., 2016). A teacher with a transdisciplinary and creative vision, will be able to respond better to the new challenges, and in agreement with de la Torre (2006) "to contribute to the knowledge of the qualities and potentialities of his students" (p.692). Considering the study of creativity, from this transdisciplinary perspective, is especially important because it is observed that in the advances of research in its field, there has been an expansion of studies beyond the definitions of the types of individuals with creative characteristics, and beyond researchers dedicated to stimulating creative thinking, or to link it to certain areas, such as artistic or advertising. We attend to the phenomenon that occurs at the transpersonal level, that is, collective, systemic and with repercussions on ecological sustainability. According to the study carried out in this sense, we have found that both theories of creativity, the different approaches and the most emerging trends have transdisciplinary attributes (Cabrera, 2009).

In the research carried out with the specific objectives of deducing transdisciplinary references and valuing these transdisciplinary references for training in creativity, (Cabrera, 2016), these are resolved in a favorable way. These transdisciplinary references are those that have to do with principles of personal improvement, formative and with a sustainable ecological relation. The specific referents of transdisciplinarity for training in creativity have to do with a teacher who facilitates learning processes, with the flexible use of the resources they have, with adaptation in the organization of time and space and the number of students, a teacher attentive to the motivations of the students, as well as situations that emerge from the context and social, political, economic and cultural contingency, an attentive teacher in generating a climate of respect, participation and collaboration, both



in the classroom and Outside of it, a teacher who values content, such as attitudes, participation, skills and competencies and adapts their assessments with different strategies in a permanent feedback process. Given the growing demand to incorporate creativity in different areas of society, and in the educational field in particular, we base the present proposal on a research that contributes to the epistemology of creativity, as a field of study, which has had two international awards (Cabrera, 2011): The Model of tendencies in creativity from a complex-evolutionary consciousness CCC, or Model of tendencies in creativity.

Epistemology of Creativity

The physicist David Bohm (2002), points out that "creativity is something impossible to define with words" (p.31). According to our disciplinary field and the way we perceive, understand and apply creativity in our field, it can be presented in different categories and approximations, as happened in a congress where more than four hundred meanings were collected (Sikora, 1979). For the researcher M. Romo (2006) "Creativity is a way of thinking whose results are things that have both novelty and value" (p.23) and as a special form of problem solving supported by other non-cognitive traits. For other authors, such as de la Herran (2006) is not enough a way of thinking, or respond to what or how, or who or what. For this author, creativity goes through levels according to its orientation and purpose. First, that which is produced as something isolated, that can be produced by discovery, then that which refers to an achievement for a given system (personal, ideological, institutional) where its basic process is productivity, and that creativity that interests to the formative sphere, which is that creativity that favors human evolution, individually and collectively.

In an exploratory study carried out in the course of research, as we approach the term of creativity, we find that some myths persist about this phenomenon, as they may be the subject of a few chosen persons with this gift or talent; which are attributes of those who have artistic skills; that it is about having very original ideas; that is to handle a number of important techniques that stimulate creative thinking, or that is linked to better spaces, material or technological resources (Cabrera, 2011). Creativity seen in this way is a biased proposal. On the other hand, several authors (De la Torre, 2006, Gervilla, 2003, Landau, 2002, MacKinnon, 1975, Money, 1957, Runko, 2009, Sternberg, 1977, in Cabrera, 2011) have been recurrent in categorizing the Creativity in separate qualities responding to the Who, the How, the What and the Where. These referents have to do with: a) creative person: has to do with personality traits, intrinsic and extrinsic motivation, creativity associated with certain pathologies, self-realization, stimulation of thought, measurement of creative thinking, b) creative process: involves seeking information, transforming, evaluating, executing, intuitive or analytical processes, preparation phases, incubation, enlightenment and verification, didactic processes such as problematizing, acclimatization, stimulation, estimation-valorization, orientation, c) creative product: It refers to if it has novelty, value, new implications, originality, complexity d) creative environment: Concerning the environment, psychosocial, didactic environment, physical environment; Climate, humor, game, material conditions, communication, respect, freedom.

We agree with the difficulty of defining creativity, first because it cannot be classified only in profiles or personality types, excluding other ways of being and communicating individual talents, even less of a way of thinking or 'creative thinking' (Romo, 1997), as the same author agrees subsequently (2006); second, because from Pedagogy, products cannot be categorized as creative without the context where they are used, and many products would be left out because of their lack of constructive input, a matter inherent in a creativity that contributes to the common good; third, because the advances in knowledge and studies on creativity show that the divergent thought not the only way of reaching creative processes and results as an example, and fourth, because there is a current of thinking that is working on the theme of the creative adversity for years (de la Torre, 2009, 2010), which indicates that not only adequate spaces and climates favor creativity, but adversity and resilience also constitute a great reference and potential of the same. On the other hand, several authors (Amabile, 1996, Csikszentmihalyi, 1998 and Sternberg, 1999) include the system as an annex to all of the aforementioned, which are called componential models, however, other researches in the creativity subject



(Alfonso, 2006, Landau, 2002, López, 1995) point out that what they offer, is not only to add the motivation nor the relevance of the context, since this responds to an insufficient understanding of the creativity. Faced with this, we broaden the field of study toward studies that link creativity as a potential and a transformative, social and ethical human value, all accompanied by awareness (de la Torre 2006, de la Herran, 2008), and other areas as varied as 'Creative Nature' (Moraes, 2007) or 'The Creative Cosmos' (Laszlo, 1997).

From the known models to explain the field of creativity we find: a) Process, Result, Personality, Development, Creativometry (de la Torre, 1984) b) P-creativity, H-creativity (Boden, 1994), (d) Intrapersonal, logical, mathematical, spatial visual, musical, kinesthetic-bodily, interpersonal intelligence (Gardner, 1997) e) Relevant skills for the countryside; Skills relevant to creativity and Motivation for the task (Amabile, 1996) f) Educational creativity or first order, Outstanding or second order creativity, Extraordinary creativity or third order (de la Herran, 1997) g) Mystical, Psychodynamic, Psychometric, Pragmatic, Cognitive-social, Social-person, Confluence. (Sternberg, 1999), h) Individual, Field, Scope. (Csikszentmihalyi, 1998), i) Creativity as imagination; as mental capacity, as problem solving; as self-realization; as an investment; Such as psychosocial interaction and paradoxical creativity. (S. de la Torre, 2008), l) Punctual or spontaneous creativity or action for an achievement, systemic or partial creativity or achievement for a system, Evolutionary or total or systemic creativity for human evolution (A. de la Herrán, 2008). These theoretical proposals are interpreted globally as a set of rich models, which are based on complementary criteria.

Creative trends model CCC

When we speak of creativity evolving in complexity of consciousness, we are referring to the development of its theory encompassing, every time, new fields of study in a process that goes from the most particular to the most general. Based on the development of the consciousness studied by many authors (Freud, Jung, Piaget, Freire, Montessori, Rogers, Maslow, Erickson) synthesized in a study by Dr. González-Garza (2006) Wilber (2005, 2006) reveal an evolution corresponding to a dimension that conforms biological, psychological, organismic-social and transpersonal or spiritual human nature. The Model of tendencies in creativity from a complex-evolutionary consciousness or 'Model of Tendencies in creativity CCC' covers the different fields of study as well as their more extensive and deep applied fields considering in a first subdivision, the approaches and theories known and consensual by Researchers (a type of individuals, all people, system), to the most emergent (complexity). We present a summary for each referent, with its theories, authors and force ideas. It should be noted that the theories and authors were elaborated from primary and secondary sources and reviewed several times by experts in creativity.

Consensus Approaches

Category: A sort of individuals

These studies contributed to clear myths about artistic genius to advance research on creativity and talent in all people.

Table 1. Category one sort of individuals

REFERENT	Theories and Models	Outstanding Authors reference works YEAR	FORCE IDEAS KEYWORDS
INDIVIDUAL	Theory of genius Anthropometric Study	F. Galton, 1869	The genius individual is cataloged as creative. People are born with that gift, feature Innate and hereditary.
INDIVIDUAL	Theory of the Giftedness	L. Terman, 1925. Sh. Blumen, 2013	Characteristics and development of the trajectory of The gifted individuals. High performance talents and learning styles

Source: Own elaboration from Cabrera (2011, p.163)



Category: All People

In this category it is where the greatest contribution is received, especially from Gardner's denunciation in 1950, regarding the need to study creativity as a capacity other than intelligence (Sternberg, 1999).

We propose to associate theories with those that focus creativity in impulses (picodynamics and studies from pathology), measurement (psychometric tests), stimulation (pragmatic approach and its different techniques of stimulation of creative thinking), evaluation (The indicators of creative products), human development (humanist approach and creativity from self-realization).

Table 2. Category of all people

REFERENT	Theories and Models	Outstanding Authors reference works YEAR	FORCE IDEAS KEYWORDS
IMPULSES	Psychodynamics Approach	Freud. 1908/1959 Rank, 1932; Kris, 1952; Kubie, 1958; Vernon, 1970 Jung, 1959 1964	Tension between real consciousness and unconscious impulses. Sublimation of conflicts. Art and creativity. Adaptive regression and elaboration. Preconscious. Express unconscious desires. Collective unconscious and archetypes.
THOUGHT	Associations Cognitivism Theory; Classic; Trait and Personality Theory; Intelig. Multiple; Gestalt model; Simulations with Computer; Other	Dewey 1910; Wallas 1926, Wertheimer, 1945; Newell y Simon 1972, Gardner, 1973, Mackinnon 1975; Weisberg, 1986, Finke 1990; Boden 1992. Romo 2003, Runko, 2007.	Creative problem solving. Specific intellectual processes. Problem space. Perception of problems as a whole. Troubleshooting in an original way. Creativity carries ordinary cognitive processes. 20.000 hrs. Seven types of intelligences. Solve problems or create relevant products. Play creative thinking on computer. P creativ. And H creativ. Provides novelty and Value in addition to relying on non-cognitive traits. Creativity as Potential.
MEASUREME NT	Psychometric Approach	Guilford, 1950; Torrance, 1962 Costa-Lobo, Coimbra, & Almeida, 2017; Lubart, T.I., Besançon, M. & Barbot, B. (2011)	Creativity is the key to education. Criteria: fluidity, flexibility, elaboration and originality Creative potential Creative cognition EPoC - Evaluation of Potencial Creativity Divergent exploratory thinking and integrative convergent thinking.
STIMULATIO N	Pragmatic Approach	Crawford, 1931; Osborn 1953; Gordon 1961; De Bono 1977	Technique to form new combinations. Brainstorming. Synthetic Method; Lateral Thinking. 6 hats for thinking technique
EVALUATION	Enfocado al Producto	Newell, Shaw & Simon 1958 Mc Pherson Brodgen & Sprecher, 1964, Gutman 1967; Taylor 1972	Some criteria: Novelty and personal, social, scientific value; New implications; Surprise; Existential, social, artistic, symbolic and operative structures. Originality and complexity
HUMAN DEVELOPME NT	Humanist Focus	Fromm 1941; Murphy 1947; Riesman 1950; May 1959; Maslow 1973; Rogers 1980; Blay, 1980; Marin 1984; Goleman, 1996.	Productive orientation Biosocial interaction with Culture Autonomous person To be existential Creativity as health, self-realized person, Open to experience, happy; be yourself; Valuable innovation, intuition, wisdom of the unconscious. Spiritual realization. Transcendent consciousness.

Source: Own elaboration from Cabrera (2011, p.163)



Category: System

Creativity present both in people and at the level of social-cultural system. In these studies, although they integrate contextual elements, aspects related to transdisciplinarity are not yet mentioned.

Table 3. Category system

REFERENT	Theories and Models	Outstanding Authors reference works YEAR	FORCE IDEAS KEYWORDS
From Confluence	Socialcultural Theory	H. Gruber, 1974 Simonton, 1981	Scientific creation as a result of a working life. Creative productions as adaptive adjustment variations. Creativity needs psychosocial, individual and social articulation. . Future and creativity with a prospective social view
From Confluence	Social theory. Model Component	T. Amabile, 1983 a la Act.	It integrates different processes; Highlights the environment Socio-cultural, personal, creative, Intrinsic motivation.
From Confluence	Theory of Investment	R. Sternberg, 1977 a la Act.	Integrate 6 resources: Intellectual skills, knowledge, thinking styles, personality, motivation, environment.
From Confluence	Ecological Theory	M. Csikszentmihalyi, 1988 a la Act.	It highlights the historical and social environment of creative works. Flow state as a high level of creativity. Individual - Field - Scope.
From Confluence	Total Applied Creativity Theory	D. de Prado 1988 a la Act.	Socio-humanistic techno - create . Humanistic vision Integral part of creativity in practice. Multilingualism. Self-conscious creative teaching.

Source: Own elaboration from Cabrera (2011, p.163)

Emerging approach

Category: Complexity

In this category creativity considers the particular types of individuals, all people, society, nature, integrating cognitive, corporative, emotional, spiritual and ethical components. (Megatrends, Transpersonal Approach to Consciousness, Complex Approach, Ecosystem Approach, Interactive and Psychosocial Theory, Complex-Evolutionist Theory) (Cabrera, 2009). In this emerging approach, we have considered two researchers who have been incorporating the transdisciplinary and complexity references in their research around creativity. In turn, and after an in-depth interview with each of them, it was considered pertinent to highlight the authors who are most significant for them, and in which they lay the foundations that make them committed to creativity from the complexity.



Table 4. Category Complexity

REFERENT	Theories and Models	Outstanding Authors reference works YEAR	FORCE IDEAS KEYWORDS
Transdisciplinary	Interactive and Psychosocial Theory.	S. de la Torre, 1982 a la Act. References: Osho, E. Morin; 1981 a la Act. Maturana, Varela, Binnig, Laszlo, Lorenz, Prigogine, Moraes, Capra, Briggs, Pribram, Wilber, Bohm, Roger Ciurana, D'Ambrosio, Nicolescu, Zukav, May, Damasio, Lipton, Servan-Schreiber, Others.	To know how to educate in the complexity of the planetary era. Ecological sustainability. Eco-systemic paradigm. Creativity as part of a personal, social and cosmic whole that manifests as energy flows. It integrates emotion, thought and action. Character dynamic, interactive, systemic and complex. Creativity rather than generation of ideas, as fields of vibration. Quantum creativity. To train in creativity is to bet on a future of progress, justice, tolerance and coexistence.
Transdisciplinary	Complex Evolutionist Focus	A. de la Herrán, 1998 – a la Act. References: Lao Tse, Confucio, Buda, Sócrates, Zhuang zi, Kant, Herder, Hegel, Fröebel, Martí, Eucken, Nietzsche, Teilhard de Chardin, Montessori, Maslow, Dürckheim, Krishnamurti, Deshimaru, Fromm, Blay, Morin, García-Bermejo, González- Jiménez, and Anyone.	Overcoming self-centeredness. Complexity of consciousness. Noosphere. Human evolution. Knowledge. Increase. Consciousness. Education for Death. Self Realisation. Evolutionary or total creativity. It is defined beyond its action, product and system or reference ism. It has two destinations: personal growth and social improvement, formation and evolution of consciousness. Education for Universality. Education on Humanity.

Source: Own elaboration from Cabrera (2011, p.163)

This model is an open and flexible proposal that can be expanded and renewed constantly incorporating new research in each category. Some authors could, for example, be in more than one category.

What is intended is to give a panorama, as a general map of the field of knowledge of creativity, so that it can be understood, not only in a linear, chronological and separate way in certain specific fields of study, but in an integral way, with a sense that the researchers themselves have been weaving in history. In this sense, there are no lower or higher levels, but each professional, from his disciplinary field, will contribute to the larger context of the phenomenon.

CONCLUSIONS

There is a need for more training in Creativity for the educational field in particular and in other dimensions that have to do with greater social, cultural and ecological responsibility. Although cognitive studies of creativity have been predominantly understood, the way of understanding it has an increasing tendency towards transdisciplinarity and complexity, integrating other social and personal domains. The trends in Creativity reflect that Creativity is related to ethical implications and social improvement, as well as self-training. The references of complexity and transdisciplinarity have valuable implications in contexts of didactic innovation, methodologies and evaluation. Regarding the conclusions with the new ways of evaluating, Stands out the EPoC battery, battery that allows creative giftedness to be measured, in elementary and middle-school students, in several fields of expression. This battery aims to evaluate the creative potential of school-age children. Measurement relates to two fields of expression, graphic and verbal, and implies two ways of thinking: divergent-exploratory (find numerous original responses based on a given stimulus) and convergent-integrative (produce an original work integrating several elements in a creative synthesis).

This complex and transdisciplinary vision of creativity, we can apply it in different areas on a personal and social-cultural level. From the astounding talents that increasingly appear every day in children and adolescents



from different countries, small inventors, scientists and artists with extraordinary qualities and with whom pedagogy has a great responsibility, as well as with all children empowering Their abilities and competences to express their uniqueness and their relationships with others, to generate an inclusive and respectful environment, and of course not, also considering the environment of which it is part, to generate more contextualized learning in a system that integrates local heritage, Artistic and cultural, in the neighborhoods, the city, and consider as part of the principles, a conscience and ethics that contributes to the care needs of the ecosystem and the planet. With this model of trends in creativity, we can promote a favorable impact in educational communities, whenever a system-wide renovation is proposed: its mission and vision, its community (managers, students, families and other members), their methodological strategies (project-based learning, others), their resources (space, technology, materials), their activities, their network connections, etc. This requires the participation of the entire community, both in training, and in the design and implementation of innovative projects.

References

- Alfonso, V. (2006). Creatividad en la psicología. Creatividad como fenómeno complejo y multidimensional. En S. de la Torre y V. Violant (Coord.), *Comprender y Evaluar la Creatividad*, Vol. I., Málaga: Aljibe. 323-333
- Almeida, L. S., Costa-Lobo, C., Almeida, A. I. S, Rocha, R. S., & Piske, F. H. R. (2017). Processos cognitivos e de aprendizagem em crianças sobredotadas: atenção dos pais e professores. In F. H. R. Piske, C. L. B. Vestena, J. M. M., A. A. de O. M. Barby, T. Stoltz, S. Bahia, & S. P de Freitas (Eds.). *Processos afetivos e cognitivos de superdotados e talentosos*: Curitiba : Editora Prismas, 15-39.
- Amabile, Teresa. (1996). *The Social Psychology of Creativity*. Editor, Westview Press.
- Boden, M. (1994). *La mente creativa. Mitos y mecanismos*. Barcelona: Gedisa.
- Bohm, D. (2002). *Sobre la creatividad*. Barcelona: Kairós.
- Cabrera, J. (2009). Creatividad hoy. Una evolución hacia mayores niveles de conciencia y complejidad. *Revista Educación y Futuro* (21) 15-42, Madrid.
- Cabrera, J. (2011). Creatividad, conciencia y complejidad. Una contribución a la epistemología de la creatividad para la formación. Tesis doctoral. Universidad Autónoma de Madrid.
- Cabrera, J. (2014). Creatividad y Educación. Implicaciones educativas desde una creatividad con conciencia compleja-evolutiva. . Educadores. Espacio de ideas y proyectos educativos. *Revista Escuelas Católicas*. Nº 249. 9-22.
- Cabrera, J. (2015). Creatividad, complejidad y formación: un enfoque transdisciplinar. *Revista Complutense de Educación*, 26(3), 505-526.
- Cabrera, J. (2016). Tendência transdisciplinares: um enfoque favorável para a formação em criatividade e a criatividade para a formação. En *Inovação e Educação. Formação docente e experiências criativas*. Santos, Lorenzo & Regina (Orgs.) Editora Unijuí. Ijuí, Brasil
- Caetano, A., Freire I., Veiga A., Martin, M. & Pessoa, T. (2016). Emoções no *cyberbullying*: um estudo com adolescentes portugueses. *Educ. Pesqui.*, São Paulo, v. 42, n. 1, p. 199-212, jan./mar. 2016. <http://dx.doi.org/10.1590/S1517-9702201603138125>
- Csikszentmihalyi, M. (1998). *Creatividad: El flujo y la psicología del descubrimiento y la invención*. Barcelona: Paidós.



- Costa-Lobo, Coimbra, & Almeida (2017). La pertinencia de la creatividad en la escuela: evaluar el potencial creativo de los alumnos *Libro de Actas del 5th International Congress of Educational Sciences and Development* (p 666). 25-27 de Mayo de 2017, Santander, Spain, ISBN: 978-84-697-2780-5.
- Costa- Lobo, C., Pérez- Nieto, M.A., Castillo- Parra, G.; Carvalho, T., Sousa, M., Medeiros, A. M., & Vázquez- Justo, E. (2017). Creatividad en los centros educativos: ¿cómo promover? *Edupsyké*, 15(1), 109-139.
- Costa-Lobo, C., Sousa, M., Campina, A., Vestena, C., & Cabrera- Cuevas, J. (2016). Potencial criativo e processos cognitivos em crianças: da identificação precoce às intervenções futuras. *Diálogos Possíveis*, 15(2), 65-93.
- García, J.L. (2003). *Métodos de Investigación en Educación. Vol II. Investigación Cualitativa y Evaluativo*. Madrid: UNED
- Gardner, H. (1997). *Arte, mente y cerebro. Una aproximación cognitiva a la creatividad*. Barcelona: Paidós.
- González-Garza, A. M^a. (2006). El desarrollo de la consciencia desde la óptica transpersonal. En M. Almendro (Ed.), *La consciencia transpersonal* (2^a ed.) 315-351. Barcelona: Kairós.
- Hernández, R. et. Al. (1994). *Metodología de la Investigación*. México: Mc Graw Hill.
- Herrán, A. de la (1997). *Cómo estudiar en la universidad*. Madrid: Universitas
- Herrán, A. de la (2006). “Hacia una creatividad complejo-evolucionista. Redefinición del concepto de creatividad desde una educación de la conciencia”. En S. de la Torre y V. Violant (Coords.), *Comprender y Evaluar la Creatividad*, Vol. I. Málaga: Aljibe. 61-68.
- Herrán, A. de la (2008). Didáctica de la creatividad. En A. de la Herrán y J. Paredes (Coord.) *Didáctica General. La práctica de la enseñanza en Educación Infantil, Primaria y Secundaria*. Madrid. Mc Graw Hill. 151-176.
- Herrán, A. de la (2010). Contribución al Concepto de Creatividad: Un Enfoque Paquidérmico (3^a parte). *Educación y Futuro. Revista de Investigación Aplicada y Experiencias Educativas*, nº 23, 129-169.
- Mc Millan, J. y Schumacher, S. (2005). *Investigación Educativa* (5^a ed.). Madrid: Pearson.
- Moraes, M^a C. (2007). Complejidad, Transdisciplinariedad y Educación: Algunas Reflexiones. *Encuentros Multidisciplinares* 9(25), 4-13.
- Moraes, M.C. (2015). *Transdisciplinaridade, criatividade e educação. Fundamento ontológicos e epistemológicos*. Campinas, S.P. Papirus (Coleção Práxis).
- Morin, E. (2015). *Enseñar a vivir. Manifiesto para cambiar la educación*. Buenos Aires: Nueva Visión
- Morin, E. (2004). Introducción al pensamiento complejo. Barcelona: Gedisa.
- Laszlo, E. (1997). El cosmos creativo. Hacia una ciencia unificada de la materia, la vida y la mente. Barcelona: Kairós.
- Landau, E. (2002). *El vivir creativo. Teoría y práctica de la creatividad*. Barcelona: Herder (e.o.: 1987).
- López Pérez, R. (1995). Desarrollos conceptuales y operacionales acerca de la creatividad. Chile. *Cuadernos de Trabajo* n° 1. Universidad Central. Escuela de Ciencias de la Educación.
- Lubart, T.I., Besançon, M. & Barbot, B. (2011). EPoC: Evaluation du potentiel créatif (Test et manuel). Paris: Hogrefe.



- Ortega, R., Calmaestra, J., & Mora Merchán, J. (2008). Cyberbullying. *International Journal of Psychology and Psychological Therapy*, 8(2).
- Pessoa, T. (2003). A Educação Reflexiva do Professor – Razões e Implicações ao Nível da Formação Inicial”. *Revista Galego-Portuguesa de Psicoloxía e Educación*, 8 (10). Actas VII Congreso Galego-Portugués de Psicopedagogía (edición em CD-Rom)
- Robinson, K. (2015). *Escuelas creativas. La revolución que está transformando la educación*. Barcelona: Grijalbo
- Romo, M. (1997). Psicología de la creatividad. Barcelona: Paidós
- Romo, M. (2006). “Cognición y creatividad”. En S. de la Torre y V. Violant (Coords.), *Comprender y Evaluar la Creatividad*, Vol. I. Málaga: Aljibe. 23-30.
- Sikora, J. (1979). *Manual de Métodos Creativos*. Buenos Aires: Kapelusz
- Sternberg, R. (1988). The nature of creativity. Contemporary psychological perspectives. Cambridge: Cambridge University Press.
- Sternberg, R. y Lubart, T. (1999). El concepto de creatividad. Perspectiva y paradigma”. En *Handbook of Creativity*. Cambridge: Cambridge University Press
- Torre, S. de la (1984). Creatividad plural. *Sendas para indagar sus múltiples perspectivas*. Barcelona: Promoción Publicaciones Universitarias.
- Torre, S. de la. (2006). “Evaluar la creatividad docente. El profesorado creativo”. En S. de la Torre y V. Violant (Coords.), *Comprender y Evaluar la Creatividad*, Vol. I. Málaga: Aljibe. 683-692.
- Torre, S. de la, y Moraes, M.C. (2008). Decálogo del Docente Transdisciplinar y Creativo”. *Red Internacional de Escuelas Creativas*, 152-153.
- Torre, S. de la (2009). Adversidad Creadora. Teoría y Práctica del Rescate de Potencialidades Latentes. *Encuentros Multidisciplinares*, 9(31), 6-20.
- Torre, S. de la (2010). Adversidad Creadora. Desarrollando otra Conciencia. En S. de la Torre y M Pujol (Coords.), *Creatividad e innovación. Enseñar e investigar con otra conciencia*. Madrid: Universitas. 19-34.
- Wilber, K. (2005). *El espectro de la conciencia*. Barcelona: Kairós (e.o.: 1990).
- Wilber, K. (2006). *La conciencia sin fronteras*. Barcelona, Ed. Kairós. (e.o.: 1985).