

EDITORIAL

With great satisfaction *Sophia: collection of Philosophy of Education* is pleased to present the publication number 29; in this opportunity the core of reflection revolves around complex thinking and the sciences of complexity in education.

With the purpose of contextualizing the reflections present in the pages of this volume and realizing a retrospective view of the processes experienced by the human being of recent times, we found that since the second part of the twentieth century, we have been experiencing a series of disillusionments and epistemological, scientific and technological fractures that have generated a multiplicity of thoughts, conceptions, attitudes, actions and reactions that have led to the emergence of:

New cultural, epistemological, and philosophical movements that question and put modern rationality in crisis; ... Various attempts to vindicate theory over practice; the need to reconceptualize and re-construct the reality of communication, of the life of the subject and of society is outlined...;... new ways of thinking, new forms of interaction are promoted... (Aguilar, 2010, p. 149).

Aspects that result from scientific and technological progress and that together have generated a complex society that requires a reevaluation of integrative, qualitative and holistic approaches that seek to understand that knowledge is not linearly produced and that it is necessary to rethink the sense, the nature, construction and meaning of it.

The aforementioned aspects make the presence of complex thinking possible and, in whose approach, it is feasible to question the following, among other things: What is the point of distinguishing complexity as science, method and worldview? Would it be correct to segment complexity into three strands? What is the point of distinguishing complex thinking in the broad sense and in the “strict” sense? How important is the idea of self-organization for the construction of a complex method of thinking? How does it relate to the contributions of cybernetics, systems theory and information theory? In what sense can education from complex thinking contribute to the development of an ecological culture?

These are some of the questions that will be addressed in the pages of this issue and that, from the content presented in the following ten

articles, attempts to provide a series of categorical tools that foster understanding and new questions about the different sectors and scenarios of reality. The articles are divided into two sections:

In the first section, there are five documents whose topics are directly linked to the central theme of the call for this issue. In the second section, there are five writings referring to specific actions, specific contexts, applications and experiences linked to the practicality of a segment of the central theme, of the philosophy of education and of philosophy in general. A brief presentation of the essential elements of each of the manuscripts that make up this issue is provided below. Thus, the first section is represented by documents such as:

Morphogenesis and complex thinking, submitted by José Luis Guzmán Nestar from Spain, Eduardo Cañete Islas from Chile and Milan Marinovic Pino from Spain. This manuscript examines teaching-learning methods involving complex creative processes, appealing to mediated and self-regulated experiences through the use of morphologies such as fractals, systems, pattern modelling, growth, fragmentation, and diachronic and scalar transformation, depending on levels of procedural complexity. The authors aim to review the category of complexity and define principles and procedural levels, which act as meta-models derived from complex thinking, from the MOSIG model and from the current parametric design in relation to teaching, especially the creative processes.

Convergences and differences between complex thinking and the ecology of knowledge, written by Rodrigo Severo Arce Rojas of Peru. This review paper analyzes the concomitances and divergences between complex thinking and the ecology of knowledge with the purpose of exploring possibilities for complementarity and examining synergies in the framework of a critical epistemology that allows the understanding of the reality. The author presents a characterization of complex thought from its main exponents such as Edgar Morin, Boaventura de Sousa Santos and others. The review concludes that both complex thinking and ecology of knowledge have similarities in sharing principles of organized systems, dialogicity, recursivity, and retroactivity; in addition to being explicit in terms of overcoming the subject-object distinction to move to a subject-subject relationship. The author of this paper argues that the two proposals constitute alternatives to hegemonic scientific thought giving value to cognitive pluralism and cognitive justice; both proposals stand as transformative alternatives to social reality.

The integrator character of the Morin's thought in university formation, prepared by Freddy Varona Domínguez of Cuba. This study covers two areas: the complex thinking of Edgar Morin and university educa-



tion. The author proposes to argue the integrative character of Morin's thought and criticize the actions that reduce the integrative character of university education; he considers that the distinctive feature of academic education is that "is realized from the conscience of the person involved and the attention to this affectivity during the formative process".

Teaching Professional Identity: Conjoining Complex Thinking and the Educational Field, written by Juan Pablo Albadan Vargas from Colombia. This article presents a series of reflections on the alienation of the educational spectrum, from initial training systems of university professors with respect to the enveloping social tissues, subjective dynamics, and the discarding of correlations, relationships and demands linked to the social fabric for which teachers are trained. The center of reflection is to unveil complex components associated with these systems from the configuration of elements, dimensions and curricular structures for their modernization and reconfiguration.

The education under the sign of complexity, made by Darwin Joaquín Robles of Colombia and Dorys Noemy Ortiz Farm of Ecuador. This article explains that complexity involves the adoption of a new view of the world, of oneself and of the relationships between the various levels involved; considers that one of the fundamental problems is the disarticulation between a discourse that declares complexity as an essential construct and a schematic and reductionist practice that generates an incoherent context for learning. The authors intend to introduce a number of elements to achieve a holistic understanding that responds to the new challenges that life and the ecosystem pose at the present time. The writers describe the principles of complex thought and then propose an education under what they call the "sign of complexity".

Below, the relevant aspects of each of the documents that form part of the second section of the journal's structure are briefly explained. This section contains the following manuscripts:

Reconfiguration of youth's religiosity in contemporary society and its relation to complex thought, written by Dolores Vélez Jiménez and Juan Mendoza Hernández from Mexico. The article analyzes the problems and difficulties that the process of secularization brings with it in the life of the young of the present time. The authors argue that secularization has become the method for contemplating and accepting religion; they intend to describe the macrosociological factors involved in the dynamics and relations between young people and religiosity. The authors conclude that the reconfiguration of religiosity leads the young person to a responsibility for himself in a massive and anonymous society that commits him/her to be transformative and projects him into the future through the application of the referents of complex thought.



The High school student movement in Chile an approach from complexity, constructed by René Antonio Varas González; Marcela Eliana Betancourt Sáez and Héctor Marcelo Rodríguez Mancilla from Chile. This article analyzes the high school student movement in Chile from a transdisciplinary approach as a complex phenomenon insufficiently investigated and reflected on by the social sciences and humanities. The central problem of this document is the crisis of the institutions of liberal democracy, and more specifically, the relationship between the concepts of citizenship and complexity, for the interpretation of the high school student movement.

Didactic strategies for the development of competences and complex thinking in university students, submitted by Dulio Oseda Gago; Ruth Katherine Mendivel Geronimo and Miriam Angoma Astucuri from Peru. The manuscript has as its starting point the logical framework of competence development and complex thinking in the world university system. The authors intend to demonstrate the effects of the application of didactic strategies for the development of competencies and complex thinking in students of a public university in Lima. The didactic strategies used by the researchers were the problem-based learning strategy, the collaborative learning strategy, and the strategy of embedded information and communication technologies.

Philosophical dialogue as adventure and experience that heals, by Andrés Escobar Vásquez and César Augusto Ramírez Giraldo of Colombia. This manuscript aims to analyze the vital contribution of philosophical dialogue to the understanding of problems of human existence. The authors see in philosophical dialogue an opportunity for the transformation of existence and as a healing experience of the evils that afflict postmodern man.

Reflections and perspectives on the evaluation of mathematics learning in Mexican higher education, structured by Maritza Librada Cáceres Mesa of Mexico; Javier Moreno Tapia of Mexico and Jorge Luis León González of Cuba. This article presents an analysis of the evaluation practices of apprenticeships in mathematics subjects in higher secondary education. The authors see the evaluation of learning as a challenge for teachers and to achieve meaningful learning in the student; they intend to revitalize the formative dimension of evaluation in order to transform their practices in the light of contemporary curricular requirements. Researchers emphasize the need to promote a culture of evaluation that ensures the development of a systematic, rigorous, critical, reflective, and academic decision-making process.

With the intention of advancing some guidelines for new reflections on the diversity of approaches and fields of action that complexity has, it is



established that the segmentation of complexity is presented as something *purely apparent* but is oriented towards the understanding that the whole and the part, the simple and the complex, the dynamic and the static, the finite and the infinite, order and chaos, the clear and the confused, they are complementary, interrelated, mutually supportive and necessary.

In the current context, complexity is a real challenge for all areas of human action, the new scenarios require different ways of teaching and learning according to the requirements of society, which call for a rethinking of education systems and the incorporation of new methods, techniques and strategies that allow the overcoming of old paradigms so that the subject develops skills and abilities to undertake the paths of understanding, the interpretation and transformation of the complex reality in which we find ourselves immersed.

In the educational field, the educational institution should be responsible for providing the tools to understand that life is situated between the corporeal and the spiritual, it is something that becomes complex, internalized, dynamic and permanently self-organizing. The educational institution should be responsible for facilitating the conceptual and methodological means and instruments that enable the transition from simple to complex thinking with a view to re-constructing, constructing and reconstructing in a way that surpasses the additive vision of the traditional forms of action based on the fixation, in the near, in the obvious, on the mechanical and linear causality of the established to take other directions; In this sense, the educational institution will be in charge of providing the necessary elements for the subject to develop the elementary competences that allow him to develop in a complex society, with emergent and complex problems characteristic of the current time.

Let us continue to build transformative thoughts of different worlds and realities.

Bibliography

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- 2010 Percepción y metacognición en la educación: una mirada desde América Latina. *Sophia, colección de Filosofía de la Educación*, 8, 147-196.

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