

Editorial: Didactics and Transdisciplinarity

Adia Chermeleu¹

The need to understand the dynamics of the current world and to respond to its many uncertainties led to a *transdisciplinary reflection* in the education sciences faced to norms, and values and, especially, intercultural and transnational practices. The contemporary transformations and the globalization of education problems need a transdisciplinary approach, which shall take into account all the dimensions of the human being. In such vision, we focus on the multiple connections between local and global, on making a pedagogical framework which shall allow the pursue of a unitary meaning of the world.

The term *transdisciplinarity* was used for the first time by Jean Piaget in 1970, with the meaning of improvement of the methods used in university education, of spacing from lecture-type courses, for searching “a new type of knowledge”, as result of the “instability of borders amongst subjects”². Piaget’s conception is not alien, in a certain extent, to Blaise Pascal’s ideas, who had already shown that the world cannot be totally known, without knowing its parts, no matter how different they might be, are interconnected by complex relations, complexity becoming one of the key ideas of transdisciplinarity. For Edgar Morin³, the most famous transdisciplinarity theoretician, education for the future might enter in the teaching process the *qualities* of knowledge: to regard the error and illusion; to place the entire information in a context and assembly; to relate to the human condition; to face uncertainties; to learn understanding, which is to study the root of misunderstanding and its effects, like racism, xenophobia, despise; to understand the ethics of the human genre, which cannot be learned / delivered by morality lessons.

Dicționarul Educației (Education Dictionary) described transdisciplinarity like a “pedagogical approach (...) with a priority focus of its intents on the full development of the subject, beyond purposes centered on school contents”⁴. In such vision, the purpose of transdisciplinary education may be to learn to change ourselves and to change society, and such education related evolution is not possible without being able to recognize each other in the *look of the Other*, by intercultural, transreligious and transpolitical attitude, which is to be learned⁵. Transdisciplinarity knew, with time, multiple and different interpretations, controversies and redefinitions.

¹Associate Prof. PhD , Education Sciences Department, Faculty of Sociology and Psychology, West University from Timisoara. E-mail: adia.chermeleu@e-uvv.ro

²H. Nowotny, (2003), *The Potential of Transdisciplinarity. Rethinking, Interdisciplinarity*. Available on-line : <http://www.interdisciplines.org/interdisciplinarity/papers/5>.

³ Edgar Morin, (1997), *Réforme de pensée, transdisciplinarité, réforme de l’Université*, Lucarno, *Motivations*, nr. 24.

⁴ R. Legendre, (1993), *Dictionnaire actuel de l’éducation*, Paris / Montreal, Eska, p. 1369.

⁵ Basarab Nicolescu, (1997), *Évolution transdisciplinaire de l’Université*, Paris, UNESCO.

Some studies⁶ consider that transdisciplinarity and interdisciplinarity can be considered similar concepts which mobilize, in favour of the same situations, resources coming from various subjects. Several common ideas came up out of most theoretizations: study of a topic by the representations of several subjects, but also by pedagogical approach *beyond subjects*, which follows the application of *fundamental methods common for all subjects*⁷. According to the CIFAR (Canadian Institute for Advanced Research)⁸, the fundamental principle of transdisciplinarity consists of the systematic refusal to approve the world and its issues, by the categories imposed by scientific subjects.

According to other researchers, transdisciplinary education assumes the study of a problem or object by specialists in various subjects, reflections of which transcend their field, by the merger of knowledge and methods, rather representing a definition of interdisciplinarity. Other researchers talk about co-disciplinarity or metadisciplinarity⁹. Alain Caillé¹⁰ is voluntarily seduced by Edgar Morin's ideas, as related to the crossing of subjects with uncertain limits which are to open towards other subjects as well, in order to become fecund. Starting from Marcel Mauss' notion of *interscience*, he proposes to waive the term of transdisciplinarity, for the term of *metatransdisciplinarity*, understanding by it the interrogation of subjects in their hidden paradigmatic fundamentals. Jean Biès¹¹ names it *holist education* within the school and University, an adapted rehabilitation of a *tripartite anthropology*, of *psychologies psychosofies* and their practical applications.

In Romania, transdisciplinarity is understood as “interconnection of several subjects taking the shape of curricular integration, with the possibility to build, with time, a new subject or a new field of knowledge, by what we call merger – the most radical step of integration”¹². The merger process of knowledge belonging to various subjects leads to the emergency of new investigation fields and to the development of integrated research projects and programs. In such vision, integrated design and approach of the curriculum, specific to transdisciplinarity, are centered “on real life, on important, significant problems, as they appear in the day-by-day background and as they affect people's lives.(...) The learning acquisitions get their meaning and value only by their contribution to the personal, social and professional success of youngsters. The formal classical subjects lose their capacity to dictate

⁶ Yves Lenoir, Lucie Sauvé, (1998), <<Introduction. L'interdisciplinarité et la formation à l'enseignement primaire et secondaire : quelle interdisciplinarité pour quelle formation ?>>, in *Revue des Sciences de l'éducation*, vol. 24, no. 1, p.-3-29.

⁷ P. ANGERS et C. BOUCHARD, (1992). L'intégration, source de l'interdisciplinarité. In R. Delisle et P. Begin (dir.), *L'interdisciplinarité au primaire* (p. 69-77). Sherbrooke :Éditions du CRP.

⁸ <https://www.icra.ca>

⁹ C. Blanchard-Laville, (2000), << De la co-disciplinarité en sciences de l'éducation>>, in *Revue française de pédagogie*, nr. 132, p. 55-66.

¹⁰ Alain Caillé, (1997), <<Guerre et paix entre sciences. Disciplinarité, inter-et transdisciplinarité>>, in *La revue du M.A.U.S.S.(Mouvement anti-utilitariste dans les sciences sociales)*, nr. 10, p.5-20.

¹¹ Jean Biès, (1998), <<Éducation transdisciplinaire. Profils et projets>>, in *Bulletin interactif du Centre International de recherche et Études transdisciplinaires*, nr. 12.

¹² Livia Pop (dir.), (2011), *Didactic Strategies in Transdisciplinary Perspective*, Bucharest, Ministry of Education Learning

the development manner of training and the curricular design model¹³. Integrated design of the curriculum assumes adapted organizing of the learning process, centered on the principle of “*learning by research/investigation and discovery*, principle based on holistic and constructivist vision on the learner and on the surrounding world”¹⁴.

Transdisciplinary approach in education sciences assumes a rethinking of the concept of subject and, respectively, of the concept of didactics. It is known that, along time, knowledge and the report of man to scientific knowledge evolved, starting with the 17th century, when the fundamental discoveries of scholars like Copernicus or Galileo Galilei led to the change of anthropocentric conception of man on the Universe, which led to the progressive organizing of scientific research in subjects. “Practiced in excess, this specialization determined the researcher to forget, many times, that its study object was registered in a global background of knowledge, in general”¹⁵. Out of such perspective, transdisciplinarity represents a needed exigency of the current world and awareness of the fact that the substance of knowledge is merely within a subject but rather *beyond* it. Transdisciplinary approach does not mean, however, the end of subjects, but rather the need of a supra-specialization, in order to understand it all, what led to looking for *strategies and methods*, able to offer new perspectives to subjects, to enable the understand of phenomena complexity, by a global approach.

We have noticed lately a will of disciplinary opening, which animated many pedagogical reflections on the possibility that various subjects consociate around a project and collaborate in order to fulfill it, which essentially represents a interdisciplinary approach, term transdisciplinarity is taken for, more often, or, in other words, step where the transdisciplinary undertaking ends, which, we all know, does not exclude, but assumes pluri- and interdisciplinary. It is well known, for such purpose, Basarab Nicolescu’s metaphor, which considers that “disciplinarity, pluridisciplinarity, interdisciplinarity and transdisciplinarity are the four arrows of one single bow: which is knowledge”¹⁶. A didactic transdisciplinary undertaking is considered to succeed when the pupil /student, initiated by multiple approaches and with successive perspective changes develops him or herself various disciplinary loans and connections (methods and instruments, writing, creative improvisation) during the learning process, where school needs to propose to train him or her by global approach, avoiding the decoupage of knowledge in dissociated units, without any connection in-between. “It is obvious that social and professional life merely contain problems which shall only refer to one single subject”¹⁷.

Transdisciplinary vision from the sciences of education led, with time, to the concept of *transversal competences*, which started appearing in the official programs of the end of the 20th century, without being initially

¹³Lucian Ciolan, *Integrated Learning. Fundaments for a Transdisciplinary Curriculum*, Iași, Polirom, 2008, p.130-131.

¹⁴*Ibidem*, p. 131.

¹⁵Aude Guillevin, Vincent Magnon, Olivier Moulin, Kahina Zaïmen, (2007), <<À propos de transversalité dans l’école de musique>>, in *Cahiers de recherche. Enseigner la musique*, nr. 9&10, p.1-18.

¹⁶Basarab Nicolescu, *op.cit.*, p.13.

¹⁷Michel Develay, Philippe Meirieu, *Émile, reviens vite – ils sont devenus fous*, Paris, ESF (PÉDAGOGIQUES), 1994, p. 176..

accompanied by theoretical definition. One of the first definitions is owed to Phipippe Perrenoud who considered that “a transversal competence is a structured network of declarative (to know, to learn), procedural (how to make, to apply) and conditional (when and why) attitudes and knowledge, in order to adapt, to settle complex problems and to make projects in a given background”¹⁸. Transversal competences are different from disciplinary competences by the fact that they have, by definition, a larger area of applicability, going beyond disciplinary and learning fields limits, by the fact they assume an assembly of knowledge and concepts, abilities and attitudes, which may allow the fulfillment of *complex tasks*, which involves, in transdisciplinary vision, the plenary development of the pupil /educable, both personally, and as related to initiative, imaginative and autonomous creation capacities. Already a known concept used in all school/university curriculum, transversal competences are also called *competences for life*¹⁹, which follows the adaptation of the educable to the surrounding environment, active citizenship, capacity to work within a team and working in heterogeneous social groups, their social and affective development, making their work more effective, capacity to be occupied, life learning, complex and critical thinking etc.

All such mutations to in education sciences determined a rethinking of disciplinary didactics, generally understood as teaching/learning science of a subject. It is known that any subject reunites own scientific knowledge and concepts with knowledge from other subjects, referring as well to concepts from the learning psychology, from sociology, philosophy, cultural anthropology etc., in the attempt to professionalize and adapt to the practical exigencies imposed by the current world. The preoccupations of didacticians have marked out lately the need of transdisciplinary vision in didactic researches, in an attempt to respond to educational challenges related to inter and trans-disciplinary reports amongst subjects, of integration possibilities and limits of such reports²⁰. There appeared, as such, new interrogations and new reflection themes around themes arisen from transdisciplinary approach. Interrogation on school knowledge regards both subjects taught in school and at the University, and competences of pupils/students, but also of teachers, their profiles. School epistemology, understood as critical view on the contents of learning, in terms of principles and methods, may guide us to a *complex vision* on the specialty didactics and to *possible thematic reflections* arisen from the integrated approach of a curriculum:

- methods used in the transdisciplinary delivery/learning process
- integration of cross-curricular topics in the basic curriculum
- didactic speech from the perspective of transdisciplinary communication
- transdisciplinarity in university curriculum

¹⁸:http://www.unige.ch/fapse/SSE/teachers/perrenoud/php_main/php_1995/1995_08.rf

¹⁹R. Legendre, *op.cit.*, p. 736.

²⁰V. Adia Chermeleu, (2015), *L'éducation transdisciplinaire. Quels enjeux didactiques dans l'enseignement primaire?*, in Nabil Hajji et Odette Lescarret, *Les mouvements sociaux à l'épreuve de l'interculturel*, Paris, l'Harmattan, col. Espaces interculturels, capit. 6, p. 93-103.

- a new epistemology of school knowledge in transdisciplinary vision
- from didactics – research to action didactics
- disciplinary didactics with transdisciplinary practice
- relations between education sciences and disciplinary didactics in initial and continuous training
- didactic strategies in cross-curricular learning
- cross competences in university programs
- integrating concepts, true lecture keys of subjects
- transdisciplinarity for interculturality and international education
- transdisciplinary evolution of the University
- semantic mutations of the trade of teacher
- towards a paradigm of educational unity

Beyond many opinions, sometimes divergent, related to defining, problematic and methodology, “Transdisciplinarity may be considered a current of ideas, a revolution, a paradigm change or a new vision of the world. In substance, it is a little of all, as it proposes a reflection way and stimulates creativity”,²¹. Transdisciplinary dimension of the education sciences is part of the current paradigm of the world which unites imaginary to reality and scientific theories with a poetic vision on the world. The interrogation of possibilities offered by school and University, of the relation between Didactics and transdisciplinarity – the topic proposed by no. 2/2015 of the Journal of Educational Sciences – in the holistic training of the educable is part of this process itself.

²¹ Victoria Gonzales Garcia, (2014), <<La pratique de la transdisciplinarité à l'Université et ses implications sur le curriculum>>, in *Présence. Revue d'étude des pratiques psychosociales*, vol. 6, p.1-19., available on-line : <http://www.uqar.ca/psychosociologie/presences/>