TRANSDISCIPLINARY LEARNING COMMUNITIES IN LATIN AMERICA. A STATE OF THE ART

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Resumen:

El texto revisa algunos aportes realizados en los últimos 15 años al estudio de las Comunidades Transdisciplinarias de Aprendizaje realizados en América Latina con una estructura que permite observar con claridad el acercamiento teórico, la descripción de la metodología utilizada y, cuando corresponde, los resultados de la aplicación.

PALABRAS CLAVE: KEY WORDS: Review, Transdisciplinary Communities, Learning, Latin America.

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1. INTRODUCTION.

Latin America has a long tradition in Societal Research, in Participatory Action Research. Since the middle of the last century, researchers in Latin America have been studying the complexity of societal structures and its relationships, but in order to make more democratic researches, they tested innovative research tools and most of those tools were intended to educational processes and to help to search of better government reflections.

We are living in a post-modern age and it is necessary to leave the already established paradigms from the previous century. The academic world is used to manage uni, multi and interdisciplinary research techniques that neglects the inclusion and total consensus. We need to incorporate collaborative activities in scientific research to break the Latin America selfish attitude in order to unite both the academic world and society.

This paper contains a review of some theoretical and methodological proposals in the last 15 years in Latin America in transdisciplinary approaches.

2. TRANSDISCIPLINARY LEARNING COMMUNITIES IN LATIN AMERICA

2.1. Venezuela

2.1.1. Title: The learning cybercommunities. An alternative in the development of the transcomplexity. Case: REDIT

Theoretical conceptual approach: Learning Cybercommunities (LCC) Paradigmatic-investigative cosmovision of complementarity. Transcomplexity as a complementarity vision, the learning cybercommunities as an alternative to keep on ponding. The learning cybercommunities could be an alternative in two ways: as a training space and as research techniques.

Description of the methodology used by the authors: The learning cybercommunities applied in the REDIT case. Formed by researchers that are limited by space and time. The roles of the researchers have to be combined with different experiences or disciplines or with diverse occupational experiences. Common objectives, principles, clear and agreed rules, trustiness and respect are the conditions required. In order for every member to receive, ask, and send information it is necessary a participative, accessible and collaborative culture; likewise, quality information and relevant content. Likewise, the members have to have minimum technological abilities.

Application Results: Doing research under this approach is possible, but the cyber-communities must compromise with it. The research does not have a unique and final product, because it can be reconfigured with the participation of other users, in the REDIT case it is necessary a constant enrichment of the contents, because if not the development will be impeded.

2.1.2. Title: Can Transdisciplinary and complexity be a major emerging knowledge in university?

Theoretical conceptual approach: Critical Thinking focused on the mathematical and systemically resolution of absolute elements giving steps to follow and a methodology to be transmitted in education. Complexity theory application of the scientific methodology for a more theoretical and qualitative area, in order to understand themes that involve humankind thinking. Interdisciplinary, conjunction of the complex and the scientific as a unity and not as divided disciplines, just how a cell, man and society represent, each one a single unity, but their existence and meaning lies and proceeds from a whole or a system.

Description of the methodology used by the authors: Conjunctions on different disciplines (scientific and complex) to obtain results as a whole and apply them on college education for a strengthening in research without the limitation of having just one discipline

2.1.3. Title: The Transdisciplinary, from an educational perspective

Theoretical conceptual approach: The educational system is part of the social environment in which we develop different topics of interest that go into the direction from an educational perspective for it strengthens. In this sense, it is important to mention that through the different educational policies in the Venezuelan education sector, it is necessary to view Transdisciplinary as a conception and a discernment of the approach recently presented by the educational ministry.

The Transdisciplinary exceeds the limits of the interdisciplinarity. It has the intention to overcome the knowledge fragmentation, beyond the enrichment disciplines with multidisciplinary knowledge and epistemological exchange of all scientific methods of knowledge, interdisciplinary was created to express, in the teaching field, the necessity of a happy transgression of the frontiers between disciplines, of the overcoming of pluridisciplinary and interdisciplinary

Description of the methodology used by the authors: The transdisciplinary point of view starts when the person begins to understanding reality because the reality is transdisciplinary. Each concept emerges from the purpose of uniting knowledge areas that allows professors, researchers, and students get closer to reality.

Have been said that, transdisciplinary is a recent conception. The complexity of the world we live on, force us to value the interconnected phenomenon. The actual physics, biology, social and psychology are interacting reciprocally. The world´s description and the actual phenomenon, suggest a new way of valuing things from a much wider perspective with a new way of thinking that requests the finding of a new paradigm that is able to interpret the actual reality. This is where the transdisciplinary conception is taking us.

Application Results: The author finished by focusing that the present Venezuelan educational system should rely on a professor taught under a dialectical global approach that allows the creation of the required competencies in terms of knowledge, skills, and abilities.

On this matter, the job of the educator is determined by the knowledge obtained of the diverse integrated disciplines.

On its behalf, transdisciplinary is given on education since long time ago, in our context, like a society immersed on the searching of progress through research and innovation that will allow the professor focus on the new paradigm for his own and effective development; the transdisciplinary topic approached is one of the purposes of the investigation, in which I propose myself the creation of a grounded theory of different supported contributions from a transdisciplinary perspective for education.

2.1.4. Title: The importance of Transdisciplinary in the educational model by competences

Theoretical conceptual approach: The approach by competences envisions an education geared to the needs, focused on the student to learn, to exploit their talents and capabilities and to develop his personality, with the intention of improving their conditions of life and participation in the transformation of society whom he is a part of.

Because of that, it is necessary the use of a methodology with a transdisciplinary approach, that at the same time nourishes and builds the complex, critic and creative thinking. (SEP, 2010)

Description of the methodology used by the authors: Transdisciplinary is first and foremost a discipline of thought because it combines different pieces of knowledge that belong to different sciences which in the end are disciplined, therefore, transdisciplinary must be understood like something that simultaneously occurs be-

tween disciplines, through them and beyond every other discipline. Their unity is knowledge and their purpose the comprehension of the world. So, it is necessary to note that knowledge is not divided by subjects. Therefore it will be necessary to form students under this new school, in transdisciplinary fields that approach language and communication, mathematical thinking, comprehension and exploration of the natural and social world and a full personal development for coexistence (SEP, 2009), which means that the learner has to be perceived as a "person that applies and uses the knowledge that he learns in a natural way through life, even when he becomes a professional in just one area, nor does he subdivide his proceeding in the subjects of his doing" (Frade, 2009, pg. 180).

Application Results: In the new stage of life we are facing, the educational system will have the obligation of proposing an encounter between theory and practice; the philosophical and the scientifically, since the human carrying, essentially, a triple reality (Morín, 2002) he is an individual, part of society, but also part of a species, where every true human development has to comprehend the development of individual autonomies, the participation of communities and the conscience of belonging to the human species. The complexity of each and every situation presented to the human being nourishes itself through diverse disciplines to later feed them back with their own contributions. The global problems belong to everyone. Without a Transdisciplinary vision of education in general, and the evaluation of the impact in particular; is practically impossible the achievement of a result contained with effectiveness, relevance, and excellence.

2.1.5. Title: Transdisciplinary: A proposal for High Education in Venezuela

Theoretical conceptual approach: Transdisciplinarity possess wide and complex contents of signification, since there has been no place to accumulate theory and practice that allows us to refer to the specificity of the term without the danger of mutilating or oversizing what currently connotation in its short, relative history, so we must run the risk of defining and arguing synthesis proposals that would bring us closer to that goal.

With this clarification is that the research is conducted to indicate events where no frontiers between disciplines exist, in other words, the actions that move within and through a determined discipline.

Description of the methodology used by the authors: Multidisciplinarity and interdisciplinarity have been clarified and conceptualized by authors like Ander-Egg (1993), Boissot (1975), Espaillat (1985), García Guadilla (1996), Paris (1973) and Saneugenio (1991). However, in a generic way, we will mention that multidisciplinarity, from the etymology view, means many disciplines, in other words, many disciplines approaching the same study object, but with no interconnection or relation between them.

Application Results: Promote financially the investigations that are determined to give answers to fundamental problems of the country, especially, the ones that lean on multidisciplinary and transdisciplinary approaches. This situation stimulates us to propose a way to the epistemic integration, beyond a mix of techniques, transcending paradigms based on a transdisciplinary education proposal capable of crossing and putting into dialogue the different knowledge areas.

2.1.6. Title: Places for intercultural and Transdisciplinary learning in a changing society

Theoretical conceptual approach: Transdisciplinary research: development and application of a conceptual framework based on specific discipline´s theories, concepts and methods. Instead of working in

a parallel way, the researchers collaborate through analysis levels and interventions to develop a comprehensive comprehension of the problem.

In the transdisciplinary research, the researchers, develop a shared conceptual framework that integrates and transcends their perspective in their respective discipline.

Description of the methodology used by the authors: Analysis of the approach and metaphor of Brecher (1986) of the so-called disciplinary tribes that integrate the High Education Institution (HEI). The disciplines will not be defined as the concepts, methods and fundamental goals, or because of the variations in the institution's knowledge maps, which show a complex reality that tries to be simplified through diverse models of study accreditation on high education and/or indicators of quality and relevance evaluations (academic credibility). It would not be identified with a community or social group organized on a communication net

Application Results: Learning as a service of the public, autonomous, traditional universities. Matches with the solidarity sense; but is far away from contributing to the transformation of institutions and with the university context; it is a caring approach or a fulfillment of a limited normative of 120 hours with no impact activities in the training of the student. Till the date, it has a low impact in the interinstitutional relations, in the generation of socio-institutional spaces and in the curricular redesign.

2.1.7. Title: Transdisciplinary and education

Theoretical conceptual approach: The present article, begins from the notion of transmethodology through a hermeneutic speech like a regulatory concept to study the relation between transdisciplinary and education. It is about a global turning in the interior of the knowledge configuration through the transversal-subjective that can create pedagogic scenarios like nests in order to form dialogues of knowledge. The discussion´s goal is to propitiate an academic creator work that that drives the necessary knowledge of an (another type of) formation and touches the possibilities of development on self-consciousness. In this text, you think about the relation.

Description of the methodology used by the authors: The previous notes represent an instance in which the educative process has to be understood from a transdisciplinary point of view; it is about considering the links that are produced in the development of knowledge dialogues that display a complete perspective making itself constituent.

In this sense, the normative ruptures that propitiate the knowledge fragmentation bring epistemological obstacles that do not surpass the constituted perspective and therefore knowledge loses its foundations of complexity.

These intersubjective relations, where contradictions or complementarity outcrop, represent the beginning of the construction of Transdisciplinary. In consequence, transdisciplinary found itself in the professor, students and community contributions that display a public knowledge which intervenes in the development of academic knowledge.

According to these considerations, the scholar scenario must to change, the academic encounters must have dialogues, there have to encounter that boost dialogues, encounters for the production through a permanent communal reflection and research as an element that will substitute the mere learning as information about the different types of knowledge.

Application Results: Transdisciplinary is not a new discipline, nor a thematic tool or a "wonder" discipline, its purpose is to find bridges between objects to get closer to a complete thought. Therefore, in

the educative context, transdisciplinary implies that the curricular contents have to be traversed in their limits and contours of meaning in order to distinguish between what it is unfulfilled, undetermined and the inclusiveness of new relationships as the possibility of the construction of knowledge. The curriculum will end up being a social construction in the class-community room, its contents will be constituted by diverse themes that originated of the process of the problematization of reality where the professor will include the curricular notions that students require to solve them.

2.1.8. Title: Transdisciplinary in higher education in the 21st century

Theoretical conceptual approach: The presented study, of documental format, had the purpose to analyze Transdisciplinary in the field of higher education, specifically, in university institutions as a process that allows the overcoming of the fragmented vision of the essential University functions. Transdisciplinary is the process that allows the apparition on new knowledge fields through the dialogue of the disciplines.

Description of the methodology used by the authors: Transdisciplinary education clarifies in a new way the need for permanent education in the present days. Its purpose is the comprehension of the present world, in which one of its imperatives is knowledge; disciplinary, pluridisciplinary, interdisciplinarity and transdisciplinary are four arrows of the same arch: that of the increasingly complex knowledge of the underlying reality. Transdisciplinary education is founded on the reevaluation of the institution role, imaginations, sensibility and body in the transmission of knowledge. Universities conceived as centers of the scientific knowledge, have to envision themselves from the Transdisciplinary with the purpose of holistic formation of their professionals with com-

petences that allows the approach to a complex social reality.

Application Results: The scientific disciplines, as we know them today, as branches of the knowledge that manifest themselves with autonomy, are rather modern.

Disciplines took shape in the division between Science and Philosophy because of the variety of study objects raised after the Scientific Revolution, when many religious and cultural dogmatisms were overcome. Every science it's separated in one edge according to their specific study object: Physics study the relations between bodies, Biology studies the manifestations of living organisms, Chemistry studies the internal links of matter, Mathematics studies the formal interconnections between numbers, and geometrical figures.

2.2. Brazil
2.2.1. Title: Complex Knowledge and transdisciplinary education

Theoretical conceptual approach: The complex, contemporary system demands the regeneration of humanism and ethics. Transdisciplinary education is the base of the political and cognitive action in the planetary agony of nowadays.

Description of the methodology used by the authors: "The seven-necessary knowledge for the education of the future". Edgar Morin. Education that heals knowledge blindness. An education that guarantees the correct knowledge. Teach human condition. Teach the earthly identities. Face the uncertainties. Teach comprehension. The ethics of the humankind.

Application Results: Teach educators. Recognize the role of technology Look at the internet as the means, not as the end. Apply basic training needs and competencies with meta-professional attitudes syntonized with nature, culture, and the cosmos. Learning involves knowing, being, doing and coexisting. This approach of ideas can be applied in any institution

and teaching center. Nevertheless, it is not applied to a specific sector, this is a merely illustrative document.

2.2.2. Title: Transdisciplinary and education

Theoretical conceptual approach: We are all involved in a profound and generalized crisis of the ecosystemic nature, a paradigmatic crisis that affects our relationship with life, including schools. This requires educators to have a theoretical panorama that is deep, wide sustained by Transdisciplinary nourished by complexity in order for us to find compatible solutions with a complex nature of the present problematic. In this sense, and in order for us to carry out our educative mission, it is recommended to keep on going on the paths of science and open the epistemological cages.

Description of the methodology used by the authors: We should note that at this moment, Transdisciplinary helps us understand that we cannot keep on working with ludic proposals that are sustained on determinist and reductionist thinking, or in a positivist planning and in a methodology that fragments reality, life, and knowledge. We cannot keep on overestimating the ludic methods of an abstract and formal model, which supposedly, wants to put every knowledge unity in order. We cannot keep on privileging this or other structure of scientific method, in other words, or privileging the object, or the subject or the social context in which things happen.

Application Results: Transdisciplinary, nourish be complexity, demands each professor with the creation of ludic, flexible, cooperative, learning environments or contexts, the creation of educational ecosystems in which solidarity prevails, as well as association, ethics, generosity, fellowship, dialogue in the search of constant solutions to emergent conflicts, respect for the differences and the recogni-

tion of cultural diversity of the existence of different learning styles that enriches the individual and collective experiences that beautifies our lives.

2.3. Argentina
2.3.1. Title: How to generate a transdisciplinary performance within the frames of a research project, and not die while trying it.

Theoretical conceptual approach: In the present presentation we problematize the performance of "Pido Gancho: Jugando con Brech" from the transdisciplinary group Brechtian as form the National University Villa María, based on conceptual consideration that refers to the Transdisciplinary, the games and the creational processes approached.

Description of the methodology used by the authors: Transdisciplinary is the interaction to different artistic manifestations, causing interactive processes of research, production, and transference between them. The barriers between different areas have been broken through ludic activities in order to create a united community.

Application Results: The two-year transdisciplinary work, allowed, not just the personal and pedagogical growth, through the academic integration space, until now, they were moving in an independent and disconnected way, students, graduates, and professors. Creating a program that is enriched day by day, with the incorporation of new members, professors, and students.

2.3.2. Title: Transformations in movement: the transdisciplinary importance of expressing a socio / communicational map into a Territory

Theoretical conceptual approach: The transformative idea of participatory action research plus the concept of integral approaches leads us to produce dialogical spaces for reflection and action, building

transdisciplinary and popular senses to construct a vision for intervention and integrated approach in the territory.

Maps of villages proposed to investigate the communication relationships established between the community affected by the floods, the organizations that participated in the aid operations and the Public Policies executed according to the resolution of different problems.

Description of the methodology used by the authors: The author emphasizes on the methodological dimensions, the debate on the role of public universities and research in emergency situations and in the construction of the country and region project. Likewise, he starts by recognizing that communication and development are associated with practices and experiences. Concrete acts of reality transformation carried out by diverse political and social actors in concrete territories.

Application Results: Encourage the construction of meaning about health and the environment. Work on diagnosis and permanent monitoring of the territory. Ease the use and appropriation, of the Interactive Map for the communities. Generate socio-edu-communicative processes by producing pedagogical materials. There are no valid results, only expected ones.

2.4. Cuba
2.4.1. Title: To Transdisciplinary research through a cooperative learning

Theoretical conceptual approach: A cooperative learning standpoint was applied in various topics on Public Health course from the medical field, therefore, five student groups were formed who interacted with specialists and workers from the health area, other sectors and with members of the population.

They identified the most pressing health problems of the area and conducted an investigation. The method´s acceptance was evaluated by the students with a statistic's exploratory technique. For the

results, they drew analysis, conclusions, and debates with the professor´s presence as coordinator; each team presented satisfactory and successful results of their researches.

Description of the methodology used by the authors: A cooperative learning method was applied, in order to link various topic in a Health subject.

For the research task in cooperative learning, five workgroups were formed, who interacted with specialists and working people form the health area, from other areas and members of the population

Application Results: The results obtained in the researches by the students are presented, in which they were familiarized, more than usual, with the project´s design and execution, in the use of descriptive and inferential statistics with the participative method and the work between different disciplines and sectors.

The investigations presented, showed an adequate use of scientific reading and writing skills, as well as those of short-term action research planning.

The cooperative learning method contributed to this experience to strengthening the teamwork as a premise for the transdisciplinary research.

2.4.2. Title: Transdisciplinary and university education. Philosophical vision on challenges and potentialities

Theoretical conceptual approach: Transdisciplinarity as the result of the current science and technology development and of the globalization era, refers itself to a zone that goes beyond the disciplines, even when it means no to lash out against them or against the specialists on the subject, rather well, it suggests the cooperation interdependency and integration between them; it unites the forces and open the minds. This interaction contributes to transformations in diverse relations, overall in the ones referred to knowledge, it requires from the researchers a universal

and systematic vision of reality, as well as experience in interdisciplinary dynamics, with the purpose to overcome them.

Description of the methodology used by the authors: The integration has to engage the relationship between practice and theory. This statement does not deny that it is necessary to put more emphasizes to the theoretical research that is part of the High Education Centers in an ideal place for its development.

About integration, it is appropriate to point out that, like in the systemic approach, it has to be extended to all the curricular structure: the professor´s task, the topic, the course, the career, both vertically and horizontally.

The vertical integration takes places on a study object that integrates other study objects of other disciplines. It is based on what is already learned, although it reaches greater depth and ramification. It represents the continuity of the knowledge elements that work as invariant because of the repetition.

The horizontal integration occurs when we present the study object consequential with the knowledge of more than one science and we insist on it to take conscience of the heterogeneity of reality, with is multiple nexus and interdependency. This modality includes the barriers and fragmentation removal that is supported in the reasoning abilities of development, like comparison, discrimination, classification, systematization, integration.

Application Results: Transdisciplinary is the result of the science and technology development and the connections, interactions, fusions and integration of the diverse faces of the human life, based on the globalization concept. Nonetheless, it is not a spontaneous fact. The conscious action of men and woman is essential.

The arrival to transdisciplinary is a task of the whole society, but the high education centers have a basic role. In high education, transdisciplinary conditions exist. Nevertheless, a conscious effort aimed to

a right achievement is necessary, its starting point should be an academic dialogue between students of different specializations, including the ones that have, seemingly, nothing in common.

2.5. Mexico
2.5.1. Title: To build a transdisciplinary model of cybersocial-cultural communication

Theoretical conceptual approach: The first one states how the sociocultural approach to communication is built from the perspective of complexity and transdisciplinary in order to understand with greater depth and scope the complex communicative processes of today.

On the second one, it is suggested and developed a transdisciplinary model for sociocultural analysis of communication.

Description of the methodology used by the authors: It has a theoretical approach

2.5.2. Title: The Transdisciplinary Learning Evolution.

Theoretical conceptual approach: The transdisciplinary education origins in the richness of the scientific spirit, which is based on questions and on the rejection of all the a priori answers and the contradictory statements.

At the same time, the role of the deep-rooted intuition of the imagination, sensitivity, and body in the transmission of knowledge is revalued. Sharing the universal knowledge- a necessity in our world- cannot take place without the emergence of a new tolerance based on a transdisciplinary attitude, which implies putting into practice the transcultural, trans-religious, trans-political and transnational visions.

The concrete proposals will also be discussed: time for transdisciplinary (dedicating approximately 10% of the learning time to Transdisciplinary), the creation of workshops for transdisciplinary research in each educational institution (composed

of researchers from all disciplines), transdisciplinary forums, and pilot transdisciplinary experiences in the cyberspace.

2.5.3. Title: From Transdisciplinary to self-knowledge and community dialogue of knowledge: simplicity facing a crisis.

Theoretical conceptual approach: In many ways, emotional and rational, the intellectual humans' sons and daughters of this death-life- death world crisis, encounter themselves a space of survival through a rational autism, searching a mental explanatory prototype that will guide our acting in an engaged world to achieve a non-sense development on globalization based on the obliteration of both human soul and the world´s soul.

This way of being, on the heart of the twentieth-century human crisis, can be characterized as an attempt of rescuing what is essential in the guts of a scientific, rational (civilized) monster, in the vain attempt to flew of the horror of the world falling into pieces.

Description of the methodology used by the authors: Going deeper into and attending this processes and human problematics, is essential to generate a transformation of the academic praxis in Latin America and in a world that is capable of responding in a creative way to the huge socio-environmental challenges that we as humans have in these historical moments. (de Sousa Santos 2014).

Nicolescu (2002) reminds us that the necessity of coherence and internal order of disciplinary doing, expresses itself in the self-demand of imperative application of the Aristotelic logic; nonetheless, maybe a lot of us felt that this scheme has many contradictions and mistakes that are essential part of reality and complexity, which lives in every corner of the real world (Morin y Kern 1999).

Both Basarab Nicolescu and Edgar Morin, emphasize that these difficulties derive, in an essential way, from the lack of at-

tention and interest to the wakefulness or self-knowledge of what we are being subjects of knowledge.

Application Results: Finally, for what has been stated before, we can say that knowledge exists in the encounter with the others, and these on their world that is co-created in the encounter of the triadic (me- you- world) participatory world, so, reality that emerges from a participatory knowledge is a subjective/objective reality capable of nourish what John Heron calls, a self-generative culture.

2.6. Colombia
2.6.1. Title: A New Challenge in Research: A Transdisciplinary Approach in Communication and Development.

Theoretical conceptual approach: The objective of this paper is to show to communication researchers that they must have a major epistemological amplitude, because approaching social problems to form the transdisciplinary point of view is scientifically valid and at the same time is a theoretical and methodological challenge, especially to the area of communication and development. This point of view suggests a breakdown in the "undisciplined" or "individual" research, forming a team of technical researchers (the ones educated on universities) and the non-technical (local actors formed in the daily life and not in universities and/or institutions).

2.6.2. Title: Transdisciplinary: Proposal for an Educational Communication Model for Cancer Control in Colombia.

Theoretical conceptual approach: The approach of cancer control emerged from the revision of different conceptual frameworks for planning and decision making.

From this revision, some common elements in the cancer control were identified and contextualized for the Colombian

reality, with the purpose of achieving an intervention model based on scientific evidence and on the analysis of institutional capacity.

Description of the methodology used by the authors: This methodology engages three principal dimensions of the model for cancer control, connected by means of the main axis that is the educational and communicational component for cancer prevention, it is focused on various areas, from which some important points are selected in order to make the control, like:

The purposes on which some actions or operations are directed:

• Risk Control
• Early diagnosis
• Treatment
• Rehabilitation and palliative care

Application Results: The model is guided to generate learning processes and personal, collective and institutional transformations that will allow people to gain autonomous, decision-making abilities regarding their health, body, and life, and participative construct conditions that allow the use of their right in order to reduce risk trajectories for cancer.

Specifically, the model can be applied in processes related to cancer in areas like:

• Expansion and accessibility of information
• The conduct of participatory research
• The formation and strengthening of institutions, employees and programs in foundations
• The promotion of critical analysis and of the advance of the social speech, and communicational agendas regarding cancer and how to control and prevent it.

Theoretical conceptual approach: One of the main challenges that educational institutions faces are working together with student´s families for the achievement of the institution goals. This was the conclusion of one investigation that identified 5 types of participation of the scholar community:

2.6.3. Title: Learning communities: Transforming schools and society.

Informative, advisory, decision maker, evaluative and educational. To face this another challenge the Community Project emerged, designed by the Especial Research Center in theories and overcoming practices – CREA, From Barcelona University. The project searches for improvement of the scholar coexistence and the results of the student´s learning through the participation of their family members and volunteers in the decision making and school activities

Application Results: Nowadays, all the educational acting is implemented and the main achievements are:

Better family members' relationships between the managers and school´s professors

• Teachers that have implemented their pedagogic practices in the framework of a learning dialogue principle
• Students that are improving the development of the basic competencies.
• The organized classroom that allows the dialogue and interaction between students
• A better way of coexistence and raising of solidarity activities between students
• A major sense of belonging in the students, families, and proffers.

Description of the methodology used by the authors: These learnings are based on the contributions of some of the most important authors in the educational area and social science, like Vygotsky, Bruner, Wells, Freire, Habermas, Chomsky, Scribner and Mead, their experience constitutes a permanent challenge, because they question the power relation ingrained in School, learning community is supported on seven educational actions that have already demonstrated scientifically, in any

context and with any population. These actings are put on dialogues with some priorities defined by the community starting with the dreams of everyone captured in an action plan.

In this process many challenges were held, one them was an interlocution between headquarters and directives

2.7. Chile

2.7.1. Title: Knowledge, university and complexity: epistemic and methodological sketches for a transdisciplinary linkage.

Theoretical conceptual approach: From the basis of this epistemological approach, a methodology consistent with the notion of paradigmatology is required.

From the investigation program suggested by Arnold (2004) the macro orientation of the proposals respond to:

i. Studying in the wide range of distinctions, reaching their margins, their horizons of meaning, not limiting the phenomenon to partial and/or pre-conceived typology.

ii. A second-order observation focused on the observation of the observer systems and their respective observations, expanding the research towards the identification of related sets of distinctions and not just the analytical and causal reduction of components and isolated processes

iii. The observation of dynamic processes in mutual affectation, that is, feedback networks of observations that hold each other.

Description of the methodology used by the authors: The author emphasizes on the methodological dimensions, the debate on the role of public universities and research in emergency situations and in the construction of the country and region project. Likewise, he starts by recognizing that communication and development are associated with practices and experiences.

Concrete acts of reality transformation carried out by diverse political and social actors in concrete territories

Application Results: The essay only seeks to identify different tools for education, but it is not planned to be implemented at any point.

2.7.2. Title: Resource Center for Learning (RCL).

Theoretical conceptual approach: The program Resource center for learning (RCL) was a strategy from the MECE project (Program of Quality improvement and equity on Media Education, on public education).

The goal of the programs was to create and to update library in every Lyceum of the country and promote the progressive transformation in interactive Resource Learning Centers, with the potential to offer educational and cultural services beyond the scholar community.

Description of the methodology used by the authors: The methodology adopted was based on the socialization with the actors and with the obtained information, therefore, the next elements were included:

•	Reading, analysis and a deep study of the Library report (RCL) about the politics of for the implementation of Resources Centers of Learning produced by the Education Ministry (MINEDUC)

•	Review of various materials published by the program

•	Teamwork with the Ministry of Education.

•	Meeting with the different participant actors; employees of the MINEDUC, holders, researchers, training institutions and representatives of the librarian profession

•	Visit 9 lyceums to interview RCL coordinators, principals, teachers and students.

•	A survey for the principals, coordinators, teachers, and students of each lyceum examined.

Application Results: The next statements, are the results of this process, assuring

adequate sustainability of the RCLs:

• Sharing resources with institutions, universities, and public libraries; motivate and encourage greater use of ICTs (networked PCs with Internet access, e-books, e-learning) and commitment with the Chile Digital Project 2010

• Establish strategic alliances with the public library program, for example, requesting municipal librarians to offer professional support to RCL coordinators for better management and development of school libraries.

• Plan and carry out in coordination with the public library activities such as workshops, talks, seminars that promote educational and cultural projects that contribute to reading.

2.7.3. Title: Places for intercultural and transdisciplinary learning in a changing society.

Theoretical conceptual approach: In the context of the big global challenges of the 21st century, some observable tendencies on the institutional structure that make, use and finance the scientific research are related with the enfeeblement of the disciplinary storage while more discoveries and investments are made on interdisciplinary fields, a growing demand took place related to public policies and with perceived results as of practical utility, a greater concern for the role of science in international and local development.

Description of the methodology used by the authors: A set of empirical studies began sustained on diverse methodologies that had the challenge of explaining the processes of appropriation of the complex technologies involved in the functioning of this productive sector and of the changing processes of technology that had been generating on it. We don't have a conceptual theoretical proposal but it is clear that to comprehend this complex process multiple disciplinary competencies are required.

Application Results: There were no good results because the new law implementation under the scientific lineal model taken from the traditional knowledge space- universities and research centers- to context but it would be necessary to learn how to integrate different cultures by producing and spreading the already built knowledge. This seems to be not comprehended by many actors from different social areas since the socio-political tensions are one of the prime obstacles affecting the intercultural dialogue. The present challenge is grounded on searching on the social, dynamic intercultural learning spaces and transdisciplinary ones that will tend to be promoted on the academic public sector, just as how new production models of knowledge, doing

and of coexisting are constructed.

Conclusions

The building of a learning Transdisciplinary community depends on the harmonic participation between the technical (researchers) and no technical (local actors) actors. It should be noted that Transdisciplinary is a fully ethic study, as it is indicated "it rejects every attitude that denies dialogue and discussion, whichever origin it comes from, ideological, scientific, religious, economic, political, philosophical" (García, 2006). The spatial context consists of Latin America, where it is found a wide indigenous population and a vast number of developing countries. The compiled sources state an urgent need to incorporate and systematize the Transdisciplinary research for these scenarios in order to boost development. Having to use any research technique that is not in the Transdisciplinary area could generate these problems:

• Conflicts or protests from the local population in a researched area

• Hostility between local actors because of the lack of communication

In order to approach these problems, the next objectives through Transdisciplinary research could help:

•	Generate links between the academic community and the local community in a determined studied space
•	Deepen the available knowledge on every research phase
•	Enrich the research with local/indigenous knowledge
With the fulfillment of the objectives the following results will be observed:
•	Local satisfaction with the proposed and/or executed projects
•	Research participants gain more knowledge by leaving their comfort zone
•	Participants gain more empathy
Participants commit to performing ethical work

Transdisciplinary enriches the knowledge growth of a professional or a student, a great richness in research is also achieved through cooperative learning. Most of the Transdisciplinary reports benefited a social specific group and participants of said report. Because of it, in the postmodern age, participative activities on scientific research must be included in order to break the exclusive attitude that we posses in Latin America to unite the academic world with society.

The key concept in every transdisciplinary study is inclusion. It is emphasized in a number of occasions, that the differences between an interdisciplinary project and a transdisciplinary project, is not just talking about consensual research and participation of different areas, but also of the incorporation of the local actors, in other words, neighbors, indigenous authorities, etc. that live in the studied zone. Professional or not, everyone has to work and contribute from its own perspective and training, in consequence, a broader vision is obtained and different options are considered from every actor´s criteria.

This type of project results very enriching for everybody, it will be of great deal for the Latin-American education sector, for the students to learn and work in teams in an inclusive way, discovering that the whole is greater than the sum of its parts.

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