

EPISTEMOLOGICAL REFLECTIONS DERIVED FROM TRANSDISCIPLINARY RESEARCH PRAXIS¹

Reflexiones epistemológicas derivadas de la praxis investigativa transdisciplinar

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Abstract

The purpose of this work is to expose the epistemological reflections provided by the researchers who form an interdisciplinary group and establish a diagnosis during the first phase of participatory and action research (PAR). The project focuses on comprehensive health care in four communities with high and very high marginalization rates, located in the Comiteca-Tojolabal Planeau, Chiapas, Mexico, during the 2021-2022 cycle. This article develops a qualitative, descriptive, and critical reflection approach to rethink research based on linear relationships. It is understood that a philosophy of transdisciplinary education delineates a complex praxis that generates social transformations. First, the PAR method and its challenges are defined. Then, the challenges experienced by the researchers are exposed since they take actions to comply with the requests of the call issued by the National Council of Science and Technology (CONACYT) until the moment of second reflexivity in which they examine what they are doing while they are doing it (Giddens, 2011). The main results reveal that the constant approach and dialogue among the body researchers and between the body and the communities generates intercultural sensitivity when different epistemologies and plural ways of understanding them coexist. This favors the projection of various methodological strategies that weave efforts in favor of the community well-being and allows the researcher to assume a socially responsible attitude.

Keywords

community, philosophy, intercultural, investigator, participatory, transdisciplinary.

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Resumen

El propósito del trabajo es exponer las reflexiones epistemológicas hechas por investigadores que integran un grupo interdisciplinario y que elaboran un diagnóstico durante la primera fase de una *investigación acción participativa* (IAP). El proyecto se centra en la atención a la salud integral de cuatro comunidades en estado de alta y muy alta marginación, ubicadas en la Meseta Comiteca-Tojolabal, Chiapas, México, durante el periodo 2021-2022. Este artículo, de corte cualitativo, descriptivo y reflexivo-crítico, permite repensar la investigación fundada en las relaciones lineales. Se entiende que, una filosofía de la educación transdisciplinar, delinea una praxis compleja que genera transformaciones sociales. Primero, se define el método de IAP y sus desafíos. Luego, se exponen los retos experimentados por los investigadores, desde que planean acciones para atender a las solicitudes de la convocatoria emitida por el Consejo Nacional de Ciencia y Tecnología (CONACYT), hasta el momento de una segunda reflexividad en el que, en términos de Giddens (2011), comprenden lo que hicieron en tanto hicieron. Los principales resultados revelan que el acercamiento y diálogo constante entre el cuerpo de investigadores y de éstos con las comunidades, genera sensibilidad intercultural cuando coexisten diferentes epistemologías y formas plurales de entenderlas. Lo anterior, favorece a la proyección de diversas estrategias metodológicas, que tejen esfuerzos a favor del bienestar comunitario y permite que el investigador asuma una actitud socialmente responsable.

Palabras clave

Comunidad, filosofía, intercultural, investigador, participativo, transdisciplinario.

La utopía está en el horizonte. Camino dos pasos, ella se aleja dos pasos y el horizonte se corre diez pasos más allá. ¿Entonces para qué sirve la utopía? Para eso, sirve para caminar (Eduardo Galeano).

Introduction

The *analysis of the national development plans* implemented in the governments of Carlos Salinas de Gortari (1988-1994), Ernesto Zedillo (1994-2000), Vicente Fox (2000-2006), Felipe Calderón (2006-2012) and Enrique Peña Nieto (2012-2018) allows to understand that the concepts and methods expressed are linked to neoliberal economic policy and the generation of techno-technological Western advances. However, several civil protests have occurred, such as those led by workers, environmentalists or the Zapatista Army of National Liberation (EZLN). In addition, the epistemological transitions of scientific communities have caused that intervention models are not based solely and exclusively on economic and administrative criteria. The international conventions of the United Nations Organization (UN, 1992a, 2002b, 2015c, 2020d), have worked on the planning policies for others that appeal for decentralized management, active participation, intercultural dialogue, common welfare and recovery of local knowledge. Under this logic, the concept



of participation, methodological proposals and participatory techniques require the commitment of local inhabitants to transform their reality, from the diagnostic stage to the operation and evaluation of the project.

Translating these theoretical postulates into social practice is not an easy task. According to Murcia et al., (2016), social processes are crossed by agreements. These agreements, as referred by Ibáñez (2001), are determined by ideological interests and, therefore, political, economic, social and cultural. As a result, different research plans are also disrupted by this phenomenon. The ontological structure of nature and human reality is complex; however, the idea of the growth of accumulated knowledge, instrumental rationality and the imaginary that pure sciences are totally reliable simplified the world and justified the displacement of the identities of the South and its worldviews. For their part, Ortecho, Fenoglio, Cejas and Peyloubet (2012) raised the following:

...The prevailing epistemic approaches assumed values and interests implicit in the production of knowledge that is characterized by supporting the technological supply paradigm, linear base transfers, the pretended scientific neutrality, the emulation of exogenous methods with little or no local value and technology managed as a black box (p. 34).

Collado (2021) points out that science simplified reality to the size of human understanding when it reduced its logic to a series of simple rules. Consistent with Morin's perspective (1999), to avoid "risks" of error and illusion, scientists hyper-specialized and objectified the subject of study. Of course, this rational method within human reach attracted benefits from describing the behavioral laws of macroscopic bodies at rest or moving at small speeds; however, its capacity to describe the nature at very small scales, at the quantum or subatomic level, that revolt against deterministic logic was limited.

Scientists over time understood that systems are spontaneously chaotic and diverse; moreover, they moved from the idea that the world exists independent of human perception to thinking that human consciousness is interconnected with what is called reality. The Mexican psychophysicologist Jacobo Grinberg (1991) explains that there is a basic matrix or organization of space, whose fundamental state is total coherence and symmetric. According to his synergic theory, the human brain can distort the structure of the lattice in the most complex form known in the universe; such distortion constitutes the perceptual reality; then, each of the neural activities configures a micro-distortion of the lattice.



The human brain contains about 10 to 12 million neurons, and when one alteration interacts with another, a complex macro-distortion occurs. The main hypothesis is that perception arises as a result of the interaction between the neural field and the lattice of space. In a similar way to Nicolescu's (1996), Grinberg (1991) points out that there are different perception levels that are found on different levels of consciousness; for this reason, he comments that a theory of perception—such as that created by indigenous sages or *chamanes*—emerges from experience. People perceive the world in a way that is different from the perception of another person, simply because they were born in another culture. Thus, the attempt to explain the perception places the person in the “base” of the creation of reality; this attempt to understand helps him to unify. Consequently, it is possible to say that a person who understands the existence of different perceptions situated at different levels of reality and consciousness, is more respectful of the other.

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Facing this new understanding, Carrizo (2003a) comments that scientists integrated different theories and methods; they accentuated and weakened their disciplinary limits and strengthened their fields. Of course, linear and unidirectional logics of communication still circulate between disciplines that violate alternate logics; according to Carrizo (2003a and 2004b), these can be deconstructed from two ways. First, if the investigator assumes a transdisciplinary attitude, a spirit open to the unknown that places him “in a meta systemic level on the relationship between disciplinarity/interdisciplinarity” (Carrizo, 2004b, p. 59). The second through the design of strategies that combine different types of disciplinary and extradisciplinary knowledge, as well as the articulation of diverse actors for the production of innovative and pertinent knowledge (Carrizo, 2003a). Both actions avoid or address conflicts of interest and work for and from study communities.

The new concept of research acquires certain nuances and relatively anti-objectivist meanings when the human being is seen as able to reflect, act, manage and transform his reality. This proposal, which spread very quickly among the academic community, produced a series of replicas. Reyes (2018) comments that the results of the research start from the fact that the human being has the capacity to transform his reality and interpret it intersubjectively. However, the concrete effects of these investigations reveal that they do not transgress the limits of the theoretical-disciplinary. Furthermore, Reyes (2018) argues that the value neutrality has mutated into a kind of “political asepsis” that causes that

social research is a kind of discursive denunciation that is limited to preaching change, among other consequences.

Participatory intervention requires subjects to self-investigate, get involved and mobilize to transform their reality; however, conflicts between community-researchers arise when the former has not had contact with other research bodies and the latter have remained locked in their knowledge plots, oblivious to conflicts and social problems.

The purpose of this text, qualitative, descriptive and critical, is to communicate the epistemological reflections and decisions made by researchers of interdisciplinary training, who apply a diagnosis of PAR to detect problems and enhance integral health resources in four communities describes as high and very high marginalized, located in Comitaca Tojolabal, Chiapas, Mexico, during 2021-2022. The text is divided into three sections. First, the PAR method and the challenges faced by the facilitators in this process are defined. Then, the challenges experienced by the researchers during the planning of their actions to meet the requests of the call issued by the National Council of Science and Technology (CONACYT), the initial negotiation with the study communities and the application of instruments for participatory diagnosis of community health are presented.

Finally, the results of a second reflection are presented, in which, using the words of Giddens (2011), the researchers understand what they did while they did it. The topic is current and relevant because the contemporary world requires the design and implementation of participatory projects that allow to address complex problems; in their actions, researchers risk implementing assimilationist or paternalistic interventions. The process and the results obtained by a project depend on spatio-temporal factors, however, the exposition of the epistemological reflections allows the improvement and/or replication of some methodological decisions by other researchers.

Transdisciplinary Participatory Action Research

The positivist paradigm seeks objectivity and the determination of causal-linear explanations that are based on the same methodological approach as the quantitative method. According to Prats (2000), scientific production from the natural physical area was mimicked by the field of social and human sciences, causing scientists to fall into the epistemological trap of transforming the researched subject into an object, and the researcher subject into an external and alien to the everyday problems of societies.

Hence, Duque Hoyos (2001) and Morin, Roger and Mota (2001) argue that disciplinary knowledge reached its limit and proved unable to propose solutions to complex social problems, then demanded the emergence of a transdisciplinary and intercultural dialogue that allows the human consciousness to enhance its evolutionary and transformative capacity to give the different disciplines and non-academic knowledge. Gradually, the researchers defined the object of study of political, reflective, self-critical and transformative investigations of social problems.

During the Second World War, Kurt Lewin (1946) showed concern about the work done by university centers that impose their vision on solutions to problems and assign a passive role to community members. This is how he proposed the articulation between psycho-social theory and practice in action research (AR). In this line, Ander-Egg (1990) defined AR as a reflective, thematic, controlled and critical process, whose purpose is to study some aspect of reality, so that it acts in a transformative way on it. There are two ways to approach problems from AR: collaborative action research and PAR. The first requires the interconnection of efforts of different groups at different levels — individual, school, municipal, state, regional, national — that use research as a strategy to jointly solve problems. On the other hand, Fals-Borda (2008) generated a PAR proposal similar to the version known today, defined as a useful tool for communities to empower themselves through the creation of knowledge “from below” for the reevaluation of their wisdom. Rahman and Fals Borda (1991) acknowledged that Lewin placed science at the service of society; however, many of his followers translated his work into a kind of operational research.

Similarly, Negrete (2008) acknowledged that Fals Borda’s productions were extraordinary, but that he lived through numerous stigmas despite his open work. Over time, there have been numerous PAR proposals, but in all of them it is possible to identify common denominators, such as the emphasis on practice, reflection on action and work for community welfare.

For Sirvent and Rigal (2012): the “central epistemological core of PAR is the notion of praxis, understood as social action aimed at the transformation of reality, whether in some of its material, sociocultural or consciousness aspects” (p. 23). Praxis involves the conscious participation of citizens during the decision-making that affect their daily life and the construction of knowledge based on intercultural dialogue. Krause (2002) dilutes the subject-object separation of research; according to the author, PAR “implies ‘methodological support’, and not necessarily expertise of the researchers. They offer participation in the investigative process, which will often require an awareness of ideological position, since values are incor-

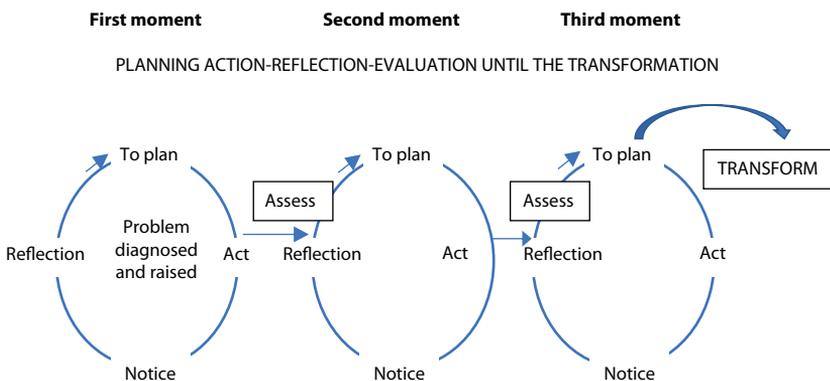


porated in the process” (Krause, 2002, p. 48). A similar reading is made by Balcázar (2003) who comments that the researcher is an external agent that helps to debate, obtain necessary resources or facilitate the education process of the community members. Over time, and as local leaders empower themselves and develop a critical vision, they steer the process of change as they learn to conduct research and value the role it can play in their lives.

The participants do not see themselves as victims, nor the researchers as assistants who support people meant as “deficient”; on the contrary, a transdisciplinary and intercultural perspective allows accepting coexistence and epistemic complementarity. Recovering the words of Zavalloni (2008) it is possible to say that the PAR is potentially useful to recover the healthy social and cultural mechanisms that are being destroyed in a world where a kind of “immediate present” grows, in which there is little interest in remembering the contemplation, coexistence and violence infringed towards some identities.

For Krause (2002), PAR “follows an introspective and emancipatory spiral: a spiral of cycles of planning, action, systematic observation, reflection, and then a replanning that gives way to new observations and reflections” (p. 48). Latorre (2005) points out that different researchers have described the cycles of reflective action to improve the practice as a flow diagram or action spirals. An interesting proposal is the mentioned by Naranjo et al. (2019) who adapted the cycle spiral of the ARmethod, from Carr and Kemmis (1988), and included the moments required to achieve the expected changes or transformation:

Figure 1
PAR Method Cycle Spiral



Source: Naranjo et al. (2019)

The classical idea that “theory produces practice” was modified by that of “practice generates theory”. Of course, when a researcher visits communities, his mind is loaded with disciplinary theories and experiences that are useful to read reality; however, he understands that such reality is indeterminate, unpredictable, complex, and that his conceptions are limited and ontologically commensurate with those produced by others. Even assuming a transdisciplinary educational or research philosophy requires disciplinary or interdisciplinary knowledge. Under this logic, the researcher reformulates the practice and the theory itself; this process is always mediated by philosophical questions about the meaning of research, ethics and values.

Based on the above and congruence with what Espinosa (2019) refers to, it is possible to recognize the following triads, tensions and dilemmas between elements, concepts and processes that feed each other, when transdisciplinary is operationalized through PAR:

- Research-Action-Reflection
- Theory-Practice-Ethics
- Learning-Teaching-Research
- Cross-Knowledge Dialogical and Intersubjective Dialogue-Reflexivity
- Academic-Artistic-Popular Knowledge
- Rationality-Emotionality-Corporeity
- Individual-Society-Species
- Autoformation-Co-formation-Ecoformation

A research project does not solve the ‘big’ problems of education, but it does solve specific cases. Chávez Tafur (2006) says:

(...) not all these attempts are successful, but in all of them the confrontation of the wills and capabilities of their executives with the specific problems they seek to solve generates results that can be analyzed to identify successes, limitations, favorable conditions and other results of a given intervention. In other words, any experience can lead to learning if it is properly processed by its implementers. In this way, practical knowledge can be generated based on the set of experiences of a given intervention process (...). Such practical knowledge can be useful. By making use of knowledge based on their experience, the group or institution that has carried it out can make corrections in its definition or conceptualization of a certain problem; modify its working methodology to improve it or, continue building successes if its activities have positive results (p. 5).



As stated, the important and interesting thing about this type of research is that the mismatches between the expected, the obtained and the unexpected do not attract punitive or negative consequences for the scientific community; on the contrary, they are used to get a deeper knowledge about certain social processes.

Moments of social intervention

The methodological process of the research project, whose purpose is to promote healthy lifestyles in community settings, consists of three phases that correspond to a participatory, transdisciplinary and intercultural paradigmatic posture: a) the diagnosis of the situation and the delineation of strategies (1 year), b) the implementation, monitoring and training of the school community (2 years) and c) the regional replication of the project and construction of public policy design (2 years). Constant feedback always leads to a new spiral of reflection and action.

The choice of the communities was made after studying the social, economic, political and food conditions of the region, from the scarce records in official sources. The communities of Tuila El Grande (135 inhabitants), San Rafael “El Ocote Bandera” (47 inhabitants), Guadalupe Palmira (890 inhabitants) and Yaltaché Buenavista (83 inhabitants), which are in the municipality of Comitán de Domínguez, Chiapas, Mexico, were selected. All of them are in a state of high/very high marginalization, are easily accessible and do not face violent political conflicts. The Legal Representative, the Technical Manager and the Center’s research professors participating in the project visited these communities to present the purposes and scope of the project. It should be noted that initially the participation of a community that rejected the work proposal had been considered; instead, Tuila El Grande agreed to collaborate.

The first decisions of the interdisciplinary researchers in a transdisciplinary project

The Sustainable Development Goals (SDGs) established by the United Nations (UN), in the 2030 Agenda, and the search for well-being outlined in the National Development Plan of the current Government of Mexico 2019-2024 (PND, 2019), aim at the effective exercise of rights and the reduction of inequality gaps. These policies have been criticized for their apparent rhetoric, pure and plain idealism and impracticability; however, they have served to set aspirations and a horizon capable of generating

concrete social practices. A new logic is presented on the meaning of development where, after many political struggles, the social actors that were not included now exercise their right to autonomy, i.e., the governance of their territories through the search for answers to their multidimensional problems and decision-making. In line with these aims, in 2019, CONACYT convened the academic community to propose research and advocacy projects on food and comprehensive health in, by and from communities in at least three public schools (initial, basic and upper middle school), especially in a state of high and very high marginalization.

It is possible to detect three moments in which CONACYT (2019) outlines actions that allow to set an interdisciplinary work, with a view towards transdisciplinarity. The first focuses on intervention from five axes of action: 1. food and nutrition, 2. integrative medicine, 3. psychosocial health and healthy life, 4. art, culture and recreation and 5. pedagogical processes for school and community health. For developing these axes and to integrate a solid staff, the interdisciplinary group was formed with professors-researchers of the Regional Center for Teacher Training and Educational Research (CRESUR, based in Comitán de Domínguez, Chiapas, Mexico), both in the area of exact sciences as well as social sciences, behavior and humanities. In addition, associate researchers whose areas of training were medical sciences, social sciences and humanities joined. The criterion that guided the attachment of the researchers to the different axes was their disciplinary training; then, the project became a kind of “archipelago” in which the researchers of each line worked in their respective islands, closed, disarticulated and fragmented, with a hyper-specialized orientation. In this understanding, the axes of action were seen as objects of study of the disciplinary field of origin of the researchers, not as problematic and horizontal areas related to intercultural, community and participatory studies.

To achieve interdisciplinary or transdisciplinary of the project, the call requested to assign a “co-manager to a researcher in the area complementary to that of the technical manager” (CONACYT, 2019, p. 3). It was not proposed that only a scientist should be included, but any person who could support the person responsible for the project. Researchers chose as co-head a person attached to the Center, whose primary function was to maintain close contact with the communities and to seek dialogue between the axes of action.

To ensure success and sustainability, CONACYT (2019) requested that the participating communities show consensual interest in working with the project’s researchers. Only in this way would it be possible to



generate self-management processes in communities that, according to CONACYT (2019), should promote “the recovery of millennial practices, from breastfeeding and strengthening of community ties, to techniques, treatments and traditional medicines, either local, regional, often foreign, to prevent and even care for their diseases” (CONACYT, 2019, p. 3). To achieve this goal, it was necessary to visit communities and engage in discussions with municipal agents and school authorities. In Guadalupe Palmira, the commissariat composed of the *ejidatarios* was contacted. Then, contact was established with the school committees and, finally, with the general population. The CRESUR authorities explained them the intention of the project and it was then that two interesting phenomena emerged in that community. On the one hand, the low availability of the community, due to the power struggles between the educational authorities whose mandate ended once the project was accepted by CONACYT and the new authorities of CRESUR. On the other hand, the request for financial support or material resources that allow researchers access to study communities. After several meetings, the partnership agreement was signed. At each CONACYT request, the Center’s researchers made decisions that they considered relevant to the diagnosis of the situation.

Initial negotiation of the proposal

CONACYT is funding the project whose intention is to generate healthy lifestyles in communities in a state of high and very high marginalization. On the other hand, the body of researchers internal and external to CRESUR and the inhabitants accepted the commitment to position themselves as active participants; from this perspective, all of them are understood as objects of study. Consequently, the final report and the deliverables that CRESUR must deliver to CONACYT are products that need to socialize, reconstruct, discuss and share, so that the different assessments enrich and diversify the information obtained: this is an ethical and epistemological PAR transdisciplinary. Therefore, it is important that reflections and self-criticism arise from the researchers, especially during the first conversations with the communities.

Initially, researchers asked, among other questions: with whom is it possible to negotiate? With whom can we build alliances? What is the community structure? Who are the most influential people for the community? What social conflicts are the most common? When and how to start applying the instruments? To obtain this information, the researchers designed a sociogram that is a descriptive tool through which the place of

each member within the community and its interrelationships are known, reason for which it is very useful. It was found that the three smallest communities belong to the system. The highest authority and with the greatest political impact on the territories are the municipal agents (men) who are elected every three years, as is the case with the municipal president. There are also school committees, usually composed of women, which serve as a vocal, treasurer and secretary. In the Guadalupe Palmira community, men make political positions that empower them to make decisions and to financially sanction people who fail to attend meetings that they convene or that fail to comply with the assigned activities; in this way, and by community agreement, they have “forced” the population to engage in matters of public domain. In this community there is a commissariat made up of *ejidatarios*, landowners and managers of government projects.

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When the socio-drama took place, the researchers identified the most representative community figures, their main conflicts and alliances; what was interesting at this point was recognizing women as peripheral identities in the public space. However, in addition to some working in the field, all of them are responsible for raising and caring for their children and the home. Those named by Rodríguez (1998) were also identified as “the antagonists” to people who do not wish to participate or who place themselves against some decisions made in common agreement between the communities and the researchers. Thus, the question arose about how to involve those who do not wish to be involved in the project. The answer that has so far been found is that one person feels engaged to the extent that the other—call him or her a researcher, institution, general population, or government—demonstrates a genuine sense of collaboration and interest in his or her well-being.

At first, the villagers saw in those “foreigners”, someone to distrust; this way explains their little participation and reluctance. At the same time, the researchers felt distant from the interests of the population when they entered a foreign territory. Both had shaped negative prejudices about the other (Marcelín, Collado and Malo, 2021). However, as time passed by and as a result of spontaneous talks and the application of research techniques to detect needs, the prejudices of both groups have gradually disappeared.

When applying the sociogram it was possible to identify that the conflicts experienced between children in the community were caused by discomfort between parents and grandparents. Therefore, reflecting on this, it is understood that it would have been interesting to apply the sociogram to reveal the conflicts and alliances that were configured from the past.

Diagnosis of the situation

Once identified the potential agents, antagonists, support networks and main dilemmas experienced by the community, the design of research techniques to identify problems and potentialities in comprehensive health care was initiated. Alberich (2008) refers to distributive (quantitative), structural (qualitative) and dialectical (participatory) research techniques. Researchers applied the techniques presented in Table 1.

Table 1
PAR techniques: how and with what is done

Tipo de técnica	Técnica
Distributives	Survey
Structural	Semi-structure interview Projective psychological test Observation of the participant
Dialectic	Social mapping Word circling

Source: Own elaboration based on Alberich (2008).

The surveys were applied to teachers, parents, and students. Its design for diagnosing the situation did not prioritize the study of relationships and forms of community organization. This exercise would have helped to recognize, more deeply, the theoretical or practical knowledge of the inhabitants; it would also have helped to understand the philosophy of community education to strengthen social empowerment. In contrast, most survey items focused on identifying problems in the multidimensional health of the inhabitants. The instruments were piloted previously, however, at some moments of the application it was possible to recognize that the cultural code of the community was not used, which forced the reformulation of some questions. On the other hand, structural techniques allowed us to identify a more complex reality: perceptions and emotions of people. However, it was necessary to know in depth the community cosmology as a result of the centrist practices sustained by the bonds of union between the inhabitants. This information cannot be traced in Western world's repositories that preserve written information, but through direct observation and dialogue about rites and collective memories.

However, word circles and social mapping are understood as dialectical perspectives. Alberich (2008) comments that these introduce

dynamizing elements that provoke reflection and show social contradictions. Word circling is a strategy that legitimizes orality and ensures collective participation. Groups of 10 to 12 people were formed for its execution—including the investigators. Based on the results of the surveys, five words were chosen for each of the three different complexity levels:

- Community: cultivation, party, people, nature, co-communication
- Family: woman, man, children, home, weather
- School: teacher, homework, recreation, subjects, love

Voluntarily, one by one each chose a word from each group. With the three words selected, they created complex narratives. This exercise allowed to present the unhealthy social dynamics and protective factors that help to prevent diseases and promote multidimensional health.

On the other hand, social mapping was very useful to know the representations of the participants on the physical and symbolic spaces that generate (dis)comfort and (un)physical and emotional security. The success of this technique was possible because it facilitates the exposure of ideas with a visual impact, or the results were discussed in a horizontal relationship.

It should be noted that CRESUR researchers and external researchers always were in constant communication; they even debated the study variables and presented the progress for constructing the instruments and the analysis of the results to the working group. However, each researcher, trained and enclosed in his monodiscipline, knew little about other fields of knowledge which prevented discernment, contradiction and epistemic conflict.

As a result of the work, a partial diagnosis of the reality was obtained where the vision and interests of the researchers are expressed more deeply. In a second reflection, the working group questioned whether it was really being consistent with the ideals of the communities and those set out in the CONACYT call.

Reflections of the researchers

According to Pineau (2009), transdisciplinarity must take three forms in the transformation field. The first, the socio-interactive extradisciplinary social base consists in the construction of bonds of union between research, action and training; this act requires overcoming the dichotomy researcher and social actor. With this challenge, the researchers faced three difficulties:



1. The diagnostic phase requires time to dialogue on the project's objectives and to recognize the theoretical and methodological foundations of the team. However, once the financial resources were approved by CONACYT, a period of approximately seven months was set for the construction of the diagnose; meanwhile, meetings between internal and external investigators were used to make general agreements.
2. Self-management capacity is one of the community's strengths; therefore, it was chosen to hire residents who master planting, livestock, cooking, healing and alternative art practices so that, in coordination with specialists open to dialogue, both enhance their knowledge and techniques. However, the operational lines of the project make it impossible to recruit people who do not issue official receipts for professional fees. So, it is worth asking who is conceived as a professional and what knowledge must be possessed to be recognized and valued by the Mexican research system. Undoubtedly, this limitation hindered and overshadowed the possibility of carrying out a project with a transdisciplinary perspective.
3. Families in some communities were reluctant and uncooperative to participate in the different activities inherent to the project. As time went by and informal talks were held, they became accustomed to the presence of outsiders. The initial disagreement could be because the integration of the communities into the project was not necessarily from a democratizing perspective but seeking to strengthen the hegemony of the research force and the indoctrination of its way of seeing the world. In a second reflexivity, it is understood that this phenomenon occurred because few community visits were made before the application of the instruments and/or because the first technique applied was the survey, which probably generated the impression of a lack of closeness between the applicator and the respondent.

The second form proposed by Pineau (2009) is the reflexive and it consists in the development of a metacognitive and critical work of questioning the frameworks of thought and action mobilized, in this case, during the diagnostic phase. The call requested the integration of ontologically commensurate dimensions, but apparently contradictory for a logic based on monoculture, among others: researcher and community; theory and practice; discipline and local knowledge. The professional training of

the researchers did not train them to “unite efforts” which are theoretical-methodological disciplinary or ex-disciplinary in attention to social problems; neither was this challenge raised from the beginning of the project nor were integrative or articulating exercises performed inside the Academy for the development of this ability. Researchers have now realized that it is necessary to generate disagreements, tensions and dilemmas that mobilize the work team. The more complex research, educational, family, community system, the more uncertainty; and, paradoxically, the further away it is from thermodynamic equilibrium, the more it evolves.

Finally, the paradigmatic form as Pineau (2009) says, regroups research that propose axiological, epistemological, methodological and praxeological revolutions. After the diagnostic phase, the researchers concluded that transdisciplinary work is necessarily a political project that is oriented beyond the simple acceptance of cultural diversity understood as tolerance; on the contrary, it considers the other—human or nature—as an indispensable element for life. Moreover, they reflected on the need to adopt an ethical position that rejects asymmetries, result of the exercise of arbitrary power. Transdisciplinarity does not imply a simple attitudinal change in researchers and communities; on the contrary, it focuses on the construction of a new social order where actors assume a critical attitude and struggle to configure more just, equitable and sustainable societies. The construction of knowledge from the dialogue of knowledge fights inequalities through two movements. On the one hand, the equitable redistribution of symbolic goods when the intellectual authorship of researchers and the community is recognized. On the other hand, the redistribution of material assets when the community is benefited through the financial resource granted by the institutional fund. In short, a transdisciplinary research philosophy connects disciplinary and local theories and methodologies as it appeals for the principle of equity that, in the words of Sen (1979), allows achieving personal and collective goals from just opportunities and processes.

The knowledge gained during the diagnostic stage of the project and the recognition of the limitations that did not allow the full fulfillment of the general objective led the researchers to set the following purposes before the intervention:

1. To critically read the diagnosis of the situation outlined and identify information that is not yet available to intervene in, for and from the philosophy of community education. As an effect of this, it is possible to know the concept of multidimensional



- health, defined according to the epistemological bases, practices, beliefs and vision of the inhabitants.
2. To renounce the six axes of action scheme seen as objects of study to problem areas that require interdisciplinary intervention and beyond.
 3. To opt for the systematization of experiences. To paraphrase Jara (2009a and 2012b), Latorre (2005), Chávez Tafur (2006) and Barrera (2010) it is possible to say that this research method evidences the learnings obtained by the researchers with a view to improving praxis, through an exercise of epistemological reconstruction. Barragán and Torres (2017) clarify that one of the risks of this method is that it can be trivialized or reduced to an operational instrument applied by uncritically describe the research process.
 4. To initiate constant dialogues between members of the academic body and carry out field visits very frequently.
 5. To promote close contact between researcher-researcher, researcher-community and community-community for sharing experiences produced in different contexts and promoting healthy lifestyles. In some communities it was possible to observe that practices of gender violence and the consumption of processed foods are a recurrent; a two-year intervention can generate limited changes. Given this scenario, a possible strategic action is to promote coexistence spaces where the population observe more equal and equitable gender relations between researchers. The observation of self-care practices that are only conscious acts of researchers that promote their physical, mental, spiritual, emotional and social health can also be promoters of change.

The formulation of these new challenges required multiple meetings of the researchers in which the concepts of vulnerability, transdisciplinarity, complexity, local development, agroecology, sustainability, food sovereignty, community empowerment, among others, were discussed. After discussions and heated debates between some researchers who held conflicting positions on the issues, it was reflected that it is not necessary to reach a consensus to form a hybrid or inert entity; on the contrary, it was assumed the proposal of Rivera (2015), who appeals for juxtaposition and coexistence of ideas. The expansion of disciplinary boundaries into outer space (other disciplines or knowledge) or subatomic space (an

infinity of other possible worlds), makes visible the multidimensionality of the problem and the solutions.

Lévinas (1991) argues: “The preferred non-exchangeable is the -I- which in a permanent sacrifice is substituted by the others and transcends the world. But it is the source of speech, because it is the essence of communication” (p. 94). The self is a subjective construction, the result of multiple encounters in the intersubjective space where it coincides with others. In other words, the configuration of an identity is conditioned by the social and intersubjective space, which, in turn, is determined by the ethical space. This idea allows us to reflect on the fact that there are underlying practices of violence in a research process that threaten the freedom, autonomy and democracy of communities.

Marcelín et al. (2021) argue that it is urgent to claim the ethical dimension in any training process, including the research process. In terms of Hernández and Esparza (2022) this means considering that “the center of every human right is based on the person himself” (p. 175). But to assume this attitude it is necessary to maintain close contact that allows the deconstruction of prejudices that threaten the other —a researcher or member of the community— who, until that moment, was unknown and alien. Only in this way is it possible to generate intercultural and transdisciplinary dialogue. Of course, the challenge remains because a series of weaknesses in the narratives that justify the avoidance of interdisciplinary epistemic conflict and the weak ethical and political involvement of the South must be overcome, as a means to reflect on practices and methods.

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Conclusions

The transdisciplinary positioning of the PAR allows to imagine and create a different practice on an exercise of social power that produces relevant knowledge for the benefit of the societies. In this article, the experience of a group of researchers during the diagnostic phase of the situation was presented, achieving three important results: the first, to understand that PAR is always in a reconstruction process, therefore, it is subject to questions and contributions of the policy of different popular sectors and of the researchers themselves. The method is an innovative perspective that breaks the traditional classical paradigm and generates epistemological debates among specialists. The links that generated the most difficulties when they were translated into practice are theory and praxis, critical reflexivity and action, relation object and subject of study, philosophy of

community education and philosophical approach to social research. In the same way, the process produced tensions when specific aspects of the research were defined, such as the “base” theory, methodology, method, techniques and instruments for data collection. It seems that this kind of research linked to intercultural action causes chaos because it causes instabilities, uncertainties, ruptures, fluctuations, synergies, emergencies and constant feedback loops, in, between and beyond the systems involved.

A second result was to understand that contemporaneity must be thought from chaos because knowledge is not anchored to order and discipline, as was believed during the modern era. In this sense and according to Molina (2022), PAR projects are practical utopias because they aspire and imagine a change that is achievable and possible, although in a system of infinite limitations.

Finally, a third result was to identify the outstanding tasks formulated under this new complex logic. One of them is to expand the concept of truth where it is no longer a synonym of accuracy, nor does it mean the mastery of the scientific method. Another is to validate rationality, beyond the demonstrable profit or quantification of profit. Following Gazmuri (2002), it is possible to say that one last task is to seek the generation of an infinite world of possibilities and freedoms, where spirituality and collectivity have their space. These tasks generate new challenges, namely: (1) the replacement of the logocentrism by the richness of orality, senses, emotions and smiles, (2) the replacement of the idea of progress and development that aspires to homogenization by emancipation and empowerment as a way of destroying inequalities and (3) horizontal dialogue through the construction of trust and informal relationships with the community.

In line with Demaria et al. (2020), it is possible to say that transdisciplinary work broadens the dialogue between community and disciplinary visions and practices. At the same time, it builds an ecologically wise and socially just world. The transformations that emerge can be more fundamental and challenging than for example the focus on green economy approaches and sustainable development. These approaches emerged from the recent social and environmental movements that recovered the worldviews of indigenous peoples; however, they differ in their prescriptions, i.e., “in the how, what and for whom it is investigated”. Community visions cannot be reduced or adopted as a common goal or as a recommended route by international organizations and political agendas (Demaria et al., 2020). Philosophy has an important space during the research process because it questions communities about who they are, what they are in the

world for and how they want to live. On the other hand, professionals are required to understand the meanings, meanings and wills of those who are benefited by the project. Both groups work together to generate solutions to the most complex problems and produce knowledge. Community participation is therefore a primary requirement for the sustainability of the project, by integrating its available knowledge and experiences, empowering them and using them for searching for solutions.

One of the limitations of this reflection is that the experiences of the researchers are exposed, but not of the study communities during the research process. The expression of their perspectives would have contributed to a much deeper and more comprehensive analysis, reflection and criticism. Currently, the project has begun the intervention phase and researchers insist on creating spaces for coexistence that allow feedback and evaluation of the different community interventions. In the future, it is expected to describe the results of the project, according to the perspective of both agents of change.

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Note

- 1 This work was developed in the framework of the research project “Philosophy of education: reflections for transdisciplinary pedagogical training”, approved by the National University of Education of Ecuador (VIP-UNAE-2019-1). It was also developed in the framework of the research and advocacy project “Promotion of healthy habits and lifestyles from the school and community environment in vulnerable condition”, approved by the Institutional Fund for Scientific, Technological and Innovation Development FORDECYT-PRONACES/45953/2020.

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