

Juan Carlos A. Sandoval-Rivera & Rosa Guadalupe Mendoza-Zuany

## Exploring a situated and active pedagogy of care to address socio-ecological challenges in Mexican schools

### Abstract

This article presents the findings of a collaborative research project conducted with teachers from schools located in rural, indigenous, and Afro-descendant contexts in Veracruz and Yucatan in Mexico. The research employs an active pedagogy of care of the social and ecological environment. The pedagogy is based on the incorporation of local and indigenous experiences, concerns and knowledge of students' families into the educational process. Reflections are provided on the identification of socio-ecological challenges for the design and implementation of learning progressions, which involves teachers and families learning to use the pedagogical proposal and researchers learning about how teachers and families implement, adapt and evaluate it based on what is meaningful to them. We present a methodology for the identification of the socio-ecological challenges, as well as the learning progressions that have been generated in each of the schools for a transformative education.

**Keywords:** *Situated Education, Care, Indigenous Knowledge*

### Zusammenfassung

In diesem Artikel werden die Ergebnisse eines gemeinschaftlichen Forschungsprojekts vorgestellt, das mit Lehrkräften aus Schulen in ländlichen, indigenen und afro-deszendenten Kontexten in Veracruz und Yucatan in Mexiko durchgeführt wurde. Die Forschung setzt eine aktive pedagogy of care der sozialen und ökologischen Umwelt ein. Sie basiert auf der Einbeziehung lokaler und indigener Erfahrungen, Anliegen und Kenntnisse der Familien der Schüler/-innen in den Bildungsprozess. Der Beitrag reflektiert sozio-ökologische Herausforderungen für die Gestaltung und Umsetzung von Lernfortschritten und beleuchtet dabei, wie Lehrkräfte und Familien lernen, die pädagogischen Impulse zu nutzen. Dabei wird die Methodik zur Identifizierung der sozio-ökologischen Herausforderungen sowie der Lernfortschritte, die in jeder der Schulen für eine transformative Bildung erzielt wurden, vorgestellt.

**Schlüsselworte:** *Situiertes Lernen, Care, Indigenes Wissen*

### Introduction

During the first two decades of the twenty-first century, we have been able to verify in different geographical contexts of the planet how the degradation of the ecological systems that make human survival possible has been accentuated, thereby compromising the present and future of populations that have historically faced important socio-ecological challenges, as is the case of the indigenous and Afro-descendant populations of Latin America. We have witnessed how these strategies have led to the rupture or weakening of the community's social fabric, have destroyed or weakened local economies, have led to the erosion of cultural and biological diversity, and implanted ideological models that facilitate the success of the logic of productivism (González-Gaudiano, 2016).

Likewise, in rural and indigenous communities of Veracruz and Yucatan in Mexico (Figure 1), where we are conducting the research reported here, we have been able to verify that socio-ecological challenges are accentuated and expressed in the physical environment as well as in weakened social and organizational structures affected by inequality, violence, alcoholism, drug addiction, lack of job opportunities, migration, etc. In addition to the above, the post-pandemic educational balance is expressed, from the hegemonic narratives, as a catastrophe that seeks to be resolved through the thinning of curricula and the achievement of minimum learning, which impacts the educational quality that is required to understand and act in the face of the socio-ecological challenges that afflict us.

Based on the above, and in order to contribute from a transformative education perspective, we propose a collaborative, critical and ecofeminist research, for the implementation of a situated, active pedagogical proposal, oriented to the care of the physical and social environment in preschool, primary and secondary schools with their teachers. It is a research carried out to promote epistemological, methodological and pedagogical turns that help to better understand the complexity of the problems we face, understand their causes and foresee consequences and, above all, transform our realities. We want to facilitate the understanding that the decisions that were made in the past led to the problems we face today and from that critical under-

standing, predict and plan for the future we want in collaboration with teachers, families and communities. To this end, we work collaboratively with teachers from preschool, primary, and secondary schools in the recognition of the socio-ecological concerns, knowledge, and practices of the contexts where they teach (Mendoza et al., 2022), the design and implementation of situated and active learning progressions (Sandoval et al., 2021). In this article we try to answer what are the main socio-ecological challenges that have an impact on the daily lives of families, how to identify and interpret them and how we can address them in the classroom from a situated and active pedagogy.



Figure 1.: Map of Mexico, Source: authors' own creation

### Towards a pedagogy of care

We start from the fact that the causes of the socio-ecological crisis that is currently being experienced in the contexts in which we have been working and which emerge from ideological models focused on economic profit at all costs. In this sense, for the cases presented here, we also want to consider the potential relationship between the socio-ecological crisis (Caride & Meira, 2001; González-Gaudio, 2016) and the neglect we have had in terms of important aspects related to our immediate environment (Puleo, 2011). Although this neglect of our environment, of people and of the relationships with the living beings that share the space/place we inhabit may have a direct relationship with what we call the socio-ecological crisis, we want to approach it in this project from another perspective, one that can be more comprehensible to all people. We are talking about the perspective of care. Finally, although almost all of us know what caring is and what it is to neglect something or someone, we understand the act of caring as thinking and paying attention with love to someone and doing what is necessary for them to be protected (Sandoval & Mendoza, 2022). It is not a matter of working on care as curricular content, but rather of apprehending care as a way of being in the world (Boff, 2002) in an active way, doing, participating and transforming. Thus, the perspective of care gives us the guideline to critically interpret the world and transform it from the place in which we are, that is, in a situated way (Sandoval & Mendoza, 2022), with empathy and commitment.

### Situated and active learning progressions

To refer to the situated nature of pedagogy, we take Holland et al. (2003) who point out that it is in social interaction and in specific contexts where culture is accessed, which in turn becomes concrete practices (Lotz-Sisitka & Lupele, 2017) from which learning can take place. Situated learning practices emerge from active and constructive meaning-making processes, in which participation in a system of knowledge and practices emerges in forms that are contextually localized and situated in the concrete world. Thus, pedagogically situating care can allow us to develop educational processes committed to what is best for the common good in a specific place.

Learning Progressions (Sandoval et al., 2021) constitute a methodology for achieving situated and connected learning (Lotz-Sisitka & Lupele, 2017). It is an active pedagogy that has as its central axis the care of the physical, natural and social environment. They are made up of a sequence of four quadrants (Figure 2).



Figure 2: 4-quadrant model, Source: Sandoval et al., 2021

Quadrant 1 has two key elements. It begins with a situated narrative that presents a story close to the context in which the students live, who are also characterized by having the notion of care at the centre, by being hopeful, containing knowledge and practices and socio-ecological concerns, as well as alternatives to face them. The power of storytelling as a decolonizing project is recognized (Smith, 1999). It also presents a space called “Did you know...”, in which school knowledge is articulated with local/indigenous knowledge in horizontality, recognizing its potential complementarity and/or contradictions, as well as the possibility of starting from experience and the local to understand the global. Quadrant 2 is aimed at students inquiring in the local context, and doing so through unconventional and situated methods, conversing, dialoguing, listening, observing and getting involved in everyday life, particularly those aimed at caring for the physical and social environment. This implies the collaboration of families and local actors as experts and experts, and particularly by giving women a voice. We want students to ask questions on their own and to be prepared to share their findings in the classroom so that learning expands (Engeström, 2001).

Quadrant 3 is aimed at getting students to share these findings, to analyse them collectively in the light of other school knowledge, promoting their articulation in new “Did you

know...” that delve into the topic of progression from a trans-disciplinary perspective that is not governed by subjects. Although knowledge that has been placed in these situations or contexts is taken up, its approach is not segmented or limited to the subjects considered a priority, such as those related to language and mathematics. Different disciplines, sciences, and arts are integrated to understand realities and transform them, and this quadrant paves the way for implementing change challenges in Quadrant 4. In this last quadrant, the challenges are posed at different times and with the participation of different actors, but always with the collaboration of the students’ families. It is inspired by active learning (O’Donoghue et al., 2018), as the essence of this quadrant is “doing”. From this doing-with/for, we can reflect, analyse and theorize about what has happened in the process. Learning progressions help to trigger a learning process without limits or ‘minimums’, without the boxing and segmentation of subjects, and without the exclusion or subordination of local knowledge, in which knowledge linked to disciplines and that which emanates from the local are organically articulated; and at the same time, an active learning process oriented towards the transformation of oppressive and unjust contexts.

### **Collaborative methodology for a transformative learning in the classroom**

In the process of designing and implementing learning progressions – 30 progressions for preschool, elementary, and secondary so far – to achieve education that contributes to social, environmental, and epistemic justice, we take up Freire’s proposals (1985, 1993, 1997) on the importance of not separating action from reflection on the path to transformation, as well as of not continuing to fall into the epistemological error that minimizes and annuls the wisdom of experience. We take up hooks’ (1994) call as well to assume ourselves capable of questioning and theorising about our practices and experiences. It is necessary to move towards the construction of our own theoretical frameworks (Denzin & Lincoln, 2008; Smith, 1999) in order to have the capacity to interpret our own experiences and contexts from the theoretical categories that emerge in the practice of emancipatory educational processes; that is, to produce our own theory for ourselves.

The training of teachers for the design and implementation of this pedagogy is a central part of the research methodology. We developed an accompanied training process, remotely during the pandemic and face-to-face in recent months, for teachers who are voluntarily interested in learning and appropriating the methodology of learning progressions based on a course-workshop and periodic sessions to accompany the process of design and implementation of pedagogy in their classrooms to promote significant transformations based on flexibility and innovation.

In the accompaniment process, collective and individual, sensitive and empathetic exercises are carried out to recognize: a) educational and socio-ecological challenges in the communities where it is taught, in order to situate challenges on a larger scale; b) community educational actors excluded from school in order to promote new forms of substantive participation in the educational process (e.g. parents with low levels of schooling); c) forgotten and current knowledge, memories and remembrances of

practices, stories once heard, individual and collective memory; the knowledge to be discovered that can be addressed in the teaching-learning process mediated by a critical and purposeful review of the curriculum; d) the position – personal and professional – they have in their context and the necessary conditions to contribute to transformation from the educational field, that is, to rethink themselves as teachers, as people, as women, as members of communities, as indigenous, as Afro-descendants, etc. This lays the foundations for collaboratively initiating and sustaining over time the design and implementation of situated learning progressions that have care as their central axis. Specifically, an initial introduction (virtual or face-to-face) on the work proposal is held with the teaching staff and/or school management. Subsequently, when the schoolteachers show interest in the proposal, a course-workshop of three sessions of two hours each is organised to show the pedagogical basis of the learning progressions.

## **Results**

### **Inquiring indigenous knowledge and local concerns**

The research we developed has resulted in a methodology to identify socio-ecological challenges that serve as input for the design of learning progressions. The collaborative design of learning progressions with teachers constitutes a result in our project, as well as being the core of the pedagogical proposal. In order to identify the socio-ecological challenges, as well as associated knowledge and care practices, we have proposed the following.

Inquiring and documenting together local, indigenous, traditional knowledge that is valuable for care – both current and past – with the intention of articulating it to the learning process in a situated an active way in which what people and communities know and construct as knowledge in their daily lives is valued. The methods of listening and conversation-interviews are essential for teachers, with our accompaniment, to get to know or rediscover stories that everyone can tell and that nourish our knowledge about the contexts. One group of methods that we privilege refers to conversations-interviews (Martínez, 2021), dialogues and listening to stories that everyone can tell and that are bearers of concerns, knowledge and socio-ecological practices of care that must be addressed in educational processes for their articulation with school knowledge, as well as to create narratives that challenge students because of their familiarity and relevance in their own family and community contexts (Mendoza et al., 2022). Central to our project is the recognition that diverse social actors are knowers from different positions and experiences (such as women, youth, children, etc.).

We seek to reverse the oppressive dualisms (Warren, 2000) of gender, origin, class, self-ascription, age, etc., that underpin patriarchy, colonialism and neoliberalism, by emphasising the voices of the most vulnerable actors, excluded from school and disempowered to share concerns, knowledge and practices. These methods are implemented not only so that teachers know and recognise the physical and social environment where they teach and thus have inputs for the design of learning progressions, but also for the development of the progression in which research in the family and local environment is a fundamental part of learning (Quadrant 2). Also, with the possibility to listen to and dialogue with local actors who have relevant and pertinent knowledge to bring back to the school (Quadrant 3), and the implementation of the change challenges with the collaboration, learning and feed-

back from these local actors (Quadrant 4). It is fundamental to address the socio-ecological challenges, as well as associated knowledge and practices through narratives inspired by the stories we heard in the previous phase, recognizing people as storytellers (Martínez, 2021). The creation of narratives has been a very important activity as it enables the agency of teachers as creators, as storytellers, as bearers of stories about care based on their research and their own experience. These narratives, as mentioned above, initiate learning progressions to address socio-ecological challenges in a situated, familiar way, and telling them bilingually – in Spanish and indigenous language – has also been key to positioning all national languages in the school.

### Identified socio-ecological challenges

We identified the three most important socio-ecological challenges for the communities where we work and on which we want to have an impact from the schools. For each of the three challenges we present: (1) how we situate the socio-ecological challenges in the classroom, (2) how we work actively and (3) how we incorporate the perspective of care.

*Care for a healthy diet:* A first socio-ecological challenge that we identified in both Veracruz and Yucatan is that of food. We found with the teachers, on the one hand, the difficulty for families to access quality food, either due to limited economic resources, loss of species of food importance, low availability or low food production, and on the other hand, contradictorily, the convenience of accessing foods of low or no nutritional quality such as processed foods and sugary drinks that compromise the health of the people who consume them. The learning progressions that we have designed collaboratively to work on this challenge in the classroom are aimed at recognizing the richness of the diversity of foods that can be consumed in the contexts in which we are working, as well as the need to conserve and/or recover them by caring for seeds, soil, etc., and documenting traditional recipes with grandmothers in quadrant 2 and disseminating them in quadrant 3. It also shows the health risks associated with over-consumption of processed foods. In order to work actively in the classroom, several challenges for change have been implemented. One is to create seed banks in schools and in students' homes that involve them learning about seed identification and collection, about the drying and storage process required, and thus having access to seeds to sow and enrich the farming systems in which they produce food. Another is to learn how to produce compost to provide nutrient-rich substrate to fertilise crops and produce quality food even in conditions where there is little or no access to land for cultivation. Another change challenge that took place in Yucatan was oriented towards the tidying up of the plot of land. In this activity, strategies were established for planning the backyard, a space present in most of the houses where the students live, with the aim of keeping it clean to avoid the spread of diseases transmitted by rodents and insects and to be able to use it to produce food. The care perspective in this socio-ecological challenge leads us to learn to care for plants, seeds and soil, so as to care for the biodiversity associated with pollination, fertilisation and the diversity of edible species. This, in turn, requires activating the body and making a significant physical effort, which families share collectively.

*Care of water:* Another important challenge identified by teachers in both contexts is access to water. We approached this challenge in terms of two variables: quantity and quality. In the context of Veracruz, a recurring problem in the communities where we have worked is that the periods of drought are becoming longer and longer. Normally, the drought period starts in February and ends in May, although it can last until June. For the last four years, the dry season has started in February and lasted until November. These changes in the natural rainfall cycles are compromising access to water with associated problems such as low food production, skin and gastrointestinal health problems, and health problems associated with water transport and storage. In the context of Yucatan, the main problem is not access, as water is available most of the year, but its quality, as there is the presence of pig farms that contaminate groundwater, which is the main source of water for the communities, with excreta.

With the learning progressions, we have approached the issue of water from several points of view. First, from the point of view of the right to access, which is compromised by prioritising agricultural and livestock use or by a lack of regulation of the waste that is discharged into the ground. The aim of this approach is to enable students to discuss in the classroom and with their families how to manage access to water and how to make it available to people in conditions of water crisis or access to quality water. Another approach has been to understand the water cycle and how it has been altered. Here, a connection is made between the ecological dynamics of water, pollutants and climate change. The gender approach has been present in all the progressions that address water care as women have been responsible for fetching, carrying and storing water and the intention is to open up a debate as to the implications of this role that has been assigned to women and girls, not only locally but around the world. In terms of how to actively work on this issue in the classroom, some of the change challenges that have been implemented are the creation of handmade filters that can be used to obtain water of sufficient quality for domestic use, although not for consumption. Another change challenge is for students to become monitors of water leakage and waste in the community. The perspective of water care is oriented towards taking care of the sources that produce water, such as forests and springs; to maintain the water distribution system of the communities in the homes to avoid leaks, among others. With the actions carried out, we have also learned that taking care of water means taking care of the women who carry it to their homes, because the less waste, the less work it is to carry water from the sources of supply.

*Care of women:* A third socio-ecological challenge that we have identified in the contexts in which we have been working, and which is related to the two previous ones, are the challenges that women face in their daily lives. Unfortunately, women have had the role of caring for the family imposed on them; a cultural practice that has been socially constructed and has hardly been questioned from a gender perspective. Thus, this challenge is related to the two previous ones and to others that we have also identified, such as intoxication due to constant contact with agrochemicals, lack of participation in decision-making processes at the community and family level, physical and psychological violence, gender discrimination in various public spaces, among others. Women work daily to obtain ingredients for their families in very difficult conditions, given that the eroded soils do not

produce enough food and the indiscriminate use of agrochemicals affects the quality of what is produced; this, together with market dynamics that have generated dependence on transgenic seeds that have displaced traditional food production systems as a space for diversified production of sufficient and varied food for a healthy diet. If we look at the implications for food preparation, we can identify that the search for and carrying of both water and firewood for cooking takes place in increasingly adverse conditions; the loss of vegetation and deforestation means that women have to walk longer and longer distances to collect firewood and water, and carry more weight, causing serious health problems. In the learning progressions that address these issues, we raise questions around the roles that each family member assumes in meeting everyday family needs and how they engage in caring for the women who in turn care for the families. The memories, stories and experiences of women teachers are an important source for the design of progressions that address this challenge and emanate from the reflective processes of accompanied training. It encourages discussions of women's responsibilities and roles in caring for families, animals, plants, etc., in various local and international contexts. It also provides global information and data that show a gender injustice that is important to deliberate on. Change challenges involve students participating in the daily activities of family life and reassigning gender roles and responsibilities. In addition to engaging in the activities usually carried out by mothers, students also participate at home as monitors of both food and water waste, thereby alleviating the work associated with collecting food and water. The care perspective focuses on caring for those who care for us. Mothers, grandmothers take care of us, but who takes care of them? By way of conclusion: The schools we collaborate with have strengthened their understanding of the socio-ecological challenges in their contexts through deliberation and critical analysis. Working with learning progressions can undoubtedly contribute to providing alternatives to face these challenges with care as the axis, and from this, to advance in the transformation of the physical and social environment. Addressing these challenges has required teachers to know and recognise the social, cultural and ecological context, the neglect that contributes to complex problems, but also the knowledge and practices of care that must enter the school; thus, they have been able to design locally pertinent and relevant progressions to understand what is happening on a wider geographical scale. The students have learned to value the knowledge that is generated in the experiences, practices and histories of the families; and at the same time, the families have actively participated in the formative process of their children with the knowledge that they have inherited intergenerationally and that has allowed them to survive, that they have created through experimentation in practice or observation in their daily lives, without conceiving their level of schooling as a limitation to share and teach. The learning progressions are an important input to learn, on the one hand, the contents of the official curriculum articulated with local knowledge, and on the other hand, to critically understand what is happening in the context in which students and their families live and seek to care for and transform. However, it is clear to us that many of the challenges that are identified and are creating concern in the communities go beyond what the school can do; we have identified concerns that go beyond the possibilities of the school and have to do with the actions of illegal companies, structural violence, etc. Teachers have been able to

recognise pressing socio-ecological challenges to be addressed in the design of learning progressions situated in the contexts, active and critical by encouraging the development of change challenges in collaboration with families and communities.

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### Dr. Juan Carlos A. Sandoval-Rivera

Full-time researcher at the Institute of Educational Research, at the Universidad Veracruzana, Mexico. He conducts collaborative research with teachers and indigenous peoples from rural areas on the interaction of Indigenous Knowledge and formal basic education in the framework of local socio-ecological challenges.

### Dr. Rosa Guadalupe Mendoza-Zuany

Professor and researcher at the Institute of Educational Research, at the Universidad Veracruzana, Mexico. She conducts collaborative research with teachers of basic education, oriented to develop situated learning processes considering local and indigenous knowledge in articulation with the curriculum.