

Reflections on climate change communication and environmental care: the teachers' view in the school context¹

Reflexões sobre a comunicação das mudanças climáticas e o cuidado ambiental: a visão de professores no contexto escolar

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ABSTRACT

It is of utmost necessity to reflect on climate changes (CC). This human-environmental problem is global and with concrete projections of future intensification, directly associating with the need to promote sustainability. Thus, this study had as its purpose to comprehend the understanding held by teachers about CC communication in schools, specifically investigating how their school context addresses CC and environmental care (EC) to the students and how they see their students standing over these issues. Efforts like these are of extreme relevance, as one considers that these students will be future adults who will more strongly suffer the consequences of CC. The school becomes a fertile ground to discuss, stimulate and implement pro-sustainability actions of care and mitigation. Exploratory interviews with 11 teachers were carried out in both public and private schools. In summary, the teachers positively saw the student as willing to a pro-ecological engagement, highlighting the most needed family participation, the continuity of the projects, and the promotion of experiments with the local reality as means to stimulate behaviors and the building of beliefs, attitudes, and visions linked to the principles of sustainability. Such results provide a basis for the

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schools to (re)build projects of socio-environmental education, which take into account psychological dimensions that enable sustainable lifestyles, also considering global environmental issues.

Keywords: Climate change. Environmental care. Environmental psychology. Teachers. School context.

RESUMO

Refletir sobre as mudanças climáticas (MCs) se faz de extrema necessidade. Esse problema humano-ambiental é global e com projeções concretas de intensificação no futuro, se associando diretamente à necessidade de promover sustentabilidade. Diante disso, este estudo teve como objetivo compreender a visão que professores possuem sobre comunicação das MCs nas escolas, investigando, mais especificamente, como seus contextos escolares abordam MCs e o cuidado ambiental (CA) com os estudantes, e como enxergam o posicionamento de seus alunos diante desses temas. Esforços como esses são de extrema relevância, ao se levar em conta que esses alunos serão futuros adultos, que irão sofrer mais fortemente as consequências das MCs. A escola passa a ser um terreno fértil para discutir, estimular e implementar ações de cuidado, pró-sustentáveis e de mitigação. Foram realizadas entrevistas exploratórias com 11 professores, de escolas do âmbito privado e público. Em síntese, os professores enxergaram o aluno de maneira positiva, como disposto ao engajamento pró-ecológico, ressaltaram a necessária participação familiar, a continuidade dos projetos e a promoção de experiências com a realidade local como meios para estimular comportamentos e a construção de crenças, atitudes e visões atreladas aos princípios da sustentabilidade. Tais resultados fornecem base para que as escolas possam (re)construir projetos de educação socioambiental, que levem em conta dimensões psicológicas favorecedoras de estilos de vida sustentáveis, considerando também problemas ambientais globais.

Palavras-chave: Mudanças climáticas. Cuidado ambiental. Psicologia ambiental. Professores. Contexto escolar.

Introduction

The advent of sustainability has intensified the attention paid to the social and human aspects of ecological preservation; this preservation is not merely physical and immediate conservation but also thought of in cultural and future aspects. Sustainability refers to the opportunity for long continuity of life in any

complex system, including human systems and their social and psychological aspects. It refers to the preservation of physical and biological aspects in the present, but also to the interactions with human well-being over time (CORRAL-VERDUGO, 2010; WERNER, 1999).

This context becomes even more complex when it comes to climate change (CC). As this human-environmental problem is global, with interdependent chains of action, which is currently present, with concrete projections of intensification in the future, it is directly associated with the need to promote sustainability; whose principles are guided precisely by future orientation, by the interdependence between ecosystems, and by pro-social and pro-ecological actions at local and global levels (CORRAL-VERDUGO, 2010; GIFFORD, 2008; IPCC, 2014; PBMC, 2014).

In this sense, the term environmental care (BOFF, 1999) has been used to express pro-ecological behaviors, but it does not mean a specific behavior in itself but denotes a set of practices whose purpose is the protection of the environment, which may take into account the issue of CC or not. In 2007, José Pinheiro and Thiago Pinheiro (2007, p. 25, our translation) used the term environmental care (EC) to designate this relationship with the environment, “in a sense quite similar to protect,” arguing that it is an expression shared by several areas interested in the theme, and can work as a bridge between environmental psychology and environmental education. These authors also argue that the term “care” is an expression widely used in everyday life by common sense, is well understood by people in general.

In light of this, this study aimed to understand teachers’ views on CC communication in schools, investigating, more specifically, how their school contexts approach CC and EC with students and how they view their students’ positioning in front of these topics.

It is essential to highlight that studies of psychological and communicational aspects related to the theme are incredibly relevant because they allow investigations that seek a greater understanding of behaviors of environmental degradation, engagement, and acceptance of public policies for ecological protection, in addition to the understanding of elements related to the adoption of sustainable lifestyles, psychological barriers to this adoption (GIFFORD, 2008). Moreover, it is considered that these students will be future adults who will suffer more strongly the consequences of CC. Thus, the school becomes a fertile ground to discuss, stimulate and implement caring, pro-sustainable, and mitigation actions.

Methodological course

The study involved 11 teachers from private and public schools in Natal, Arez and São Miguel do Gostoso, in Rio Grande do Norte. The invitation to the teachers was based on a convenience selection, having been made based mainly on the availability of the participating schools, which were invited because they developed environmental education actions and projects on their premises.

Thus, we interviewed three teachers who were currently headmasters of the schools. They indicated eight other teachers to be interviewed, following the criteria of having an interest in pro-ecological actions, having been ahead of environmental education projects, or teaching subjects that usually address the theme of CC in the curriculum. Subsequently, the invitation was extended to these other teachers, and the interviews were conducted at the schools employing a scheduled time.

Exploratory interviews were conducted based on a semi-structured script. Gaskell (2002) emphasizes the importance of the qualitative, semi-structured interview to obtain a more detailed understanding of people's views, attitudes, values, motivations, and knowledge in specific contexts. The 11 teachers interviewed, finally, were from the following backgrounds: pedagogy, biology, geography, sociology, physics, letters, and environmental management. In addition, they will be presented in the results by fictitious names, allowing gender identification.

The script used was constructed for this study by the researchers themselves based on a pilot study and diverse scientific literature, emphasizing the area of environmental psychology. The interviews were transcribed in full, and the data were analyzed using interpretative-based thematic content analysis (BRAUN; CLARKE, 2006).

Thematic axes were extracted from two guiding aspects, established *a priori*, as presented in Table 1. The first aspect referred to the teachers' ideas about the young person concerning the CC, which included approaching the problem with them, the challenges, doubts, and uncertainties mentioned. The second aspect referred to the understanding of the context of the adolescent in the view of this teacher, reporting how this context addresses the issues addressed and how it should be addressed to stimulate engagement in EC to mitigate the CC.

CHART 1 – GUIDING ASPECTS FOR THE ANALYSIS OF THE INTERVIEWS AND THEMATIC AXES EXTRACTED FROM EACH ASPECT

Teachers' ideas about the relationship: teenager and CC	Adolescent insertion context
Thematic axes:	Thematic axes:
View of CC as another environmental problem	CC as syllabus
Strategies and tools to address the topic	Sporadic projects on environmental issues and lack of projects on CC
Contact with practice	Institutional difficulties
Interdisciplinarity	Contact with reality and nature
Challenges to approach/communicate on the topic	Presence of guides: experienced people
A positive view of the young	Continuity and interdependence

SOURCE: Prepared by the authors.

Then, the main results and discussion based on the axes of analysis extracted from the two guiding aspects mentioned are presented.

Teachers' ideas about the relationship: teenagers and CC

Viewing CC as just another environmental problem

The complexity of CC, its abstraction, and complex perception has been highlighted by several authors (CLAYTON *et al.*, 2015; GIFFORD, 2011; PAWLIK, 1991; UZZEL, 2000). However, despite recognizing specificities of CC, the interviewed teachers do not see them as something that means anything but another type of environmental problem, in the sense that this issue can be communicated and taught with a view to its mitigation, just like any other problem. As exemplified in the following account: “*Can.... CC can be discussed as another environmental problem, through examples, for them to see what is happening now, and what might happen in the future*” (Teacher Edna).

Other teachers are more straightforward in assuming the differences of the problem. This is the case with Éric when he says that CC cannot be worked with students in the same way. He states:

No, it has to be different. I believe it has to be totally different. Look at the rain regime: we are in autumn, but the rains are more significant than in winter; everything is disorganized. So, I cannot deal with the issue of my garbage, selective garbage collection, which is passing through or not in my neighborhood, with these and other environmental issues, of course we have to have a broad vision in all of them and deal with all, but it has to be separated as well.

Still, Éric agrees with the view that CC is also a type of environmental problem, but that it has to be communicated separately, informing its specifics.

Strategies and tools to approach the theme

Teachers mentioned that to lecture about CC in the classroom; it is necessary to use visual tools, such as videos, images, slides, and debates through the proposition and resolution of problems. In addition to resources that impact and raise awareness, such as events reported in the media or through speakers other than the teachers themselves, to diversify the classroom routine and promote interest in the subject.

Teacher Renata states about this:

In the classroom, in this case, it would be to bring this experience through videos, the experience of a person... a statement or else bring an engineer like that from the wind farm, for him to talk because one thing is the teacher talking there every day and such, and they are tired... but bringing someone from outside to speak has changed the face, changed attention, changed interest.

It can be seen directly in this statement that, even in the classroom, strategies to bring concretely what exists in real-life conditions can help visualize the problem and give meaning to what it means to young people, beyond just passing on content in an expository way.

Although the speeches assist in structuring a classroom conducive to the communication and consideration of CC, teachers were unanimous in mentioning the need for a practical approach to the topic. In other words, it is necessary to

create *affordances* in the formal spaces of school participation that go beyond the classroom walls and even beyond class time. By *affordance*, we mean a relational concept, which refers both to the individual and the environment's properties. These are the different perceptions attributed to environmental aspects that arise from their direct experience (GIBSON, 1979; HEFT, 2013; PINHEIRO, 2007).

These are not purely mental representations taken as reality; they are perceptions constructed from what environmental properties outside the individual make possible. The central point here is that *affordances* that promote ecologically responsible behavior can be stimulated, even in the classroom. The teachers' talk helps illustrate this discussion: taking a local plant suffering from climate change, taking cases, bringing accurate data to create possible solutions.

Contact with practice

In the teachers' view, teaching about CC with a view to pro-ecological engagement is necessary to practice. This is how the student will see where to insert himself, giving meaning to his learning. It is about creating and proposing moments of discovery and new person-environment relationships, where there is engagement in new *affordances*.

This highlight is illustrated in the report:

You take the student out of the classroom to see things around the school with him and carry out the activity... the experience I have been having so far is of great acceptance in this type of practice, with me there has not been a bad student so far (Teacher Daniel).

Teacher Daniel maintains a vegetable garden in the schoolyard and also referred to it when exemplifying his speech. The teachers refer to contact with the practice that can be formally provided within the educational institution itself. Therefore, this axis differs from another but complements it, which will be detailed below, which is about contact with reality/nature. Although the school outside its premises can provide the practical doing, the main difference is that the contact with reality/nature can occur informally (without the participation and systematization by the school). In any case, the teachers clarify that this school practice is the first step for teenagers to extend such actions to other microsystems that they attend directly, such as in their family niche. Thus, teacher Patrícia states:

For example, these projects that we did (...), they internalized it, because they studied, researched, and they were able to pass it on to other people, parents would come and say, my son, ah, he already cares about the environment.

Interdisciplinarity

Interdisciplinarity was pointed out in the teachers' speech as an indispensable element to communicate effectively about CC. Teacher Ane states:

I am very much in favor of working in an interactive, interdisciplinary way. I think that Physics, Chemistry, Biology, and Human Sciences could suddenly work on this in an interdisciplinary way. A small historical study could be done on how climate change affects society; it has affected it over the years.

Some of the speeches mentioned ideas to make this interdisciplinarity possible. Teacher Ane mentioned that this might be possible through the implementation of round tables in the classroom. However, despite being seen as necessary, the teachers also pointed out that it is a great challenge to implement it. Teacher Patricia mentions that one of the problems of working the topic in an interdisciplinary way is its transversal character in the academic curriculum. She states:

I think you have to have a written project, and make it happen, systematically because it is in that one, right? Oh, I am working on the environment, and I am working on the environment (...) it needs to systematize this, honestly speaking, it enters as cross-cutting themes, then there is that more accessible thing, it ends up not belonging to anyone, I think there had to be an obligatoriness.

Other challenges complement this idea pointed out by the teachers, which are detailed in the following axis.

Challenges to approach/communicate on the topic

When considering the perceptual impossibility of CC through sensory factors, addressing the topic is of the order of social communication (PAWLIK, 1991). However, studies indicate that inaccurate knowledge about it is also favored by the uncertainties surrounding the subject, and there is a disconnect between the questions and answers of experts and the general public (OPPENHEIMER; TODOROV, 2006). Teachers mentioned this scenario as a challenge to communicate about CC to adolescents. As illustrated by the report,

I think the most significant difficulty for the teacher is dealing with the bombardment of information because it has many aspects, from people who believe that this temperature change is natural, it is a variation of the ice age, and it has to happen. (...) so to carry out an analysis, a filter of all the information they receive, having to be impartial (...) this is the main challenge that I perceive, is the range of information they have, that we have what to filter and how to handle it (Teacher Renata).

The concern with uncertainties, the informational excess with contradictory aspects, was also pointed out by the teachers Luciana and Helder. For them, this reality not only harms the communication of the problem, but it also goes beyond this kind of broken, confusing, and divergent communication that contributes to the inaction of young people. This is what the literature on the human dimensions of CC has been highlighting. The communicative process can be a significant barrier to engagement (CLAYTON *et al.*, 2015; GIFFORD, 2011).

In light of this, the role of the media is also discussed. It can act as a major barrier to the consideration of CC (GIFFORD, 2011) or contribute to more effective communication (CLAYTON *et al.*, 2015). The media, therefore, has a mediating function between events in various parts of the world and the people in their specific localities (DOHERTY; CLAYTON, 2011). To illustrate, Teacher Ane reflects on the topic:

I think it has to do with the media too, the media sensationalizes everything, and sometimes there are some important things, from the consequences of these CC that are happening there, which are not propagated, and how it is not put interestingly... So, this snowball starts to turn, specific themes for me to work on, I have to say to them: — Look! It may fall on Enem!

Being attractive to the student is another challenge mentioned by some teachers. Teacher Ane's reflection continues:

when we talk about certain topics, it ends up arousing more interest than the environment. Then it really gets difficult. To talk about the subject is not a challenge, but to stimulate action, maybe it is.

Teacher Simone's view agrees with this disinterest and mentions that, at this stage, teenagers are interested in music, dancing, dating. Nurmi (2005) highlights that there are characteristic interests of this cycle/stage of human life, from macro-systemic influences as well, such as cultural ones (CALLIGARIS, 2000). Concerns with employment, with interpersonal relationships are highlighted in adolescence. However, at this stage of life, people are already able to understand feelings, linking them not only to concrete figures, such as parents and friends but also to abstract entities, such as concepts of freedom, for example (PAPALIA; OLDS; FELDMAN, 2006). Therefore, why not encourage affection for the planet and themes related to ecological protection? Other studies have shown that there is indeed space for youth interest in sustainability issues (WRAY-LAKE; FLANAGAN; OSGOOD, 2010). Moreover, according to this view, the lack of interest was not a consensus among the teachers; some pointed to a more positive and proactive view of young people, presented in the following axis.

A positive view of the young

The proactive ability and engagement of adolescents in mitigation actions are seen by these teachers as possible and achievable aspects, as long as the contexts in which adolescents are inserted facilitate, promote and encourage this engagement. When reporting on a project developed by him, Teacher Helder highlights the active role of young people, mentioning that they not only studied the content, but they were going to carry out actions, such as interviews with professionals involved in the project's themes.

Adolescents' engagement and participation can also be facilitated when young people learn about their active role and the spheres they can act. So, Teacher Helder says: "*And what is the connection with that, how does that have*

to do with me? This understanding needs to be organized and worked on". The teacher understands that approaching CC in a content-based way, without youth participation, without contact with the practice mentioned above, and in a way detached from their realities will contribute much more to inaction. The following report illustrates these ideas: "*I think like this: we realize that young people need this openness, so they can feel capable and can help to contribute, and when they do not see this possibility, they become apathetic*" (Teacher Luciana).

In the previous axis, it was mentioned that the excess of divergent information was pointed out as a difficulty to discuss the issue of CC. However, Teacher Helder disagrees with this difficulty, reporting that this is not so relevant if we think about promoting the proactive participation of adolescents. For Helder, the teacher alone will not solve this informational dilemma, but instead of remaining in the clash of scientific aspects, he can promote a discussion with students based on preventive logic.

Furthermore, still, the teachers highlight the affective aspects of the students. Some will like one subject more about the environment; others will like another one more. This idea is in line with the concept of environmental care (GURGEL; PINHEIRO, 2011; PINHEIRO, J.; PINHEIRO, T., 2007), by highlighting that the pro-ecological interest can unfold in different focuses and possible practices. Thus, when communicating about CC, it is interesting to relate them to these adolescents' conditions and arouse their interest in mitigating the problem through different actions, to which they can affectively bond.

Adolescent insertion context

The thematic axes so far addressed how teachers see the adolescent in the face of the CC theme; however, when reporting such views, the teachers mentioned themes related to the context of the adolescent, especially the school, dealing with how the school context "*is*" in regarding the approach of the CC, and how the school context "*should be*," in the teachers' opinion.

CC as syllabus

Teachers revealed that this subject is part of the curriculum of schools, generally in the subject of Geography, both in Elementary and High School. A statement that illustrates this information is: “*Yes, we have this in the Geography grid, and there is also the Biology teacher who works*” (Teacher Neto).

Sporadic projects on environmental issues and lack of projects on CC

The teachers mentioned that the schools do carry out environmental education projects, but until then, they had never carried out a project that focused on the subject of CC; this is usually handled as syllabus as explained. In their reports, it was possible to identify two main points about the projects: the themes are of a more concrete order, the main ones being water and garbage; and the sporadic nature of its occurrences, being once a year, and with breaks, that is, they do not occur every year. As the speech illustrates:

Well... lately, the Geography teacher is responsible for a lot, who works on these topics in the classroom, but we have already had projects, let me see what the name is... we were doing research internally on the issue of the environment, mainly on the issue of recycling (Teacher Patricia).

Institutional difficulties

Teachers reported institutional difficulties in addressing the topic of CC. The first difficulty refers to the implementation of interdisciplinarity, as already mentioned. Teachers did not criticize the transversality of the content itself, but the way it is systematized in schools combined with what they called the lack of interest of some teachers. This lack of interest would be in the idea of doing something more besides providing content, such as projects that provide practical activities. The following speech, by teacher Neto, exemplifies this view:

The school is a space where the teacher can create projects and look for partnerships, and these projects can even be publicized within the community. It is not very easy but... Look, for me to take a project like this, I first need to have spaces to promote partnerships, and that requires people's time. It is very challenging; you have to break paradigms within this process. You have to give something more of yourself to make it happen.

Other difficulties pointed out are the rigid structures and rules that the school institution must follow. A schedule to be followed, working conditions, program content to be taught on time, pre-established activity models, and pre-established didactic material - often imported from the south and southeast of the country. In this sense, teacher Helder, who also develops actions in a non-governmental organization (NGO) for environmental protection, mentions that:

at school, there is a question of a lot can't, and in the activities of the NGO we create a space where at least almost everything can, that thing of overcoming wall, going there and doing, the young person has the opportunity to face the challenge.

Teacher Luciana's view complements this view and adds difficulties of financial resources in public schools. Additionally, as for the teaching materials, Luciana says:

the books come a lot from the south, from the southeast, and then when they arrive, the school gives us the textbook and says: bring it more to our reality, because when we take too much to the book, the student often does not understand.

As the CC cannot be accessed directly, their teaching is done based on the construction of representations. The possible problem is that the representations brought by the books address realities that are not those of young people. CC can indeed be taught through these representations, but they must consider local signs that can also be directly experienced (HEFT; CHAWLA, 2005).

Contact with reality and nature

Besides the contact with practical activities, which could happen within the school itself, teachers were unanimous when mentioning that, in order to approach CC with adolescents, it is necessary to link the topic to the local reality of their lives, and this can be done in a theoretical way in the classroom, as mentioned above, or mainly through direct contact with different scenarios, including nature. These ideas are consistent with what the literature on the ecological view in environmental psychology suggests when considering that contact with nature is indicated as being ideal for the production of these *affordances* because natural environments may be more malleable for children and adolescents and can provide more diverse experiences (HEFT; CHAWLA, 2005; WINKEL; SAEGERT; EVANS, 2009).

It is important to reiterate that *affordances* are not purely mental representations taken as reality; they are perceptions built from what environmental properties outside the individual make possible (GIBSON, 1979; PINHEIRO, 2007). Contact with a river provides refreshing baths, play, water for human consumption and is home to several species. These ideas become evident in speeches such as that of teacher Éric, and, in this sense, the teacher criticizes the field classes that schools provide. For him:

We have the Bomfim-Guarairas APA; we have a whole diversity of species, plants, everything. However, the students left here to go to other cities, they learned to preserve a tree that was there in another city, and they stopped wanting to preserve the mangrove that is theirs, here in the city that feeds the families (Teacher Éric, when mentioning the APA of his city: Environmental Protection Area).

Seeking this more significant contact with the local reality, this teacher organized, during one year, what he called the Environmental Tour. A trail through the local forest and mangroves, a resource that, for him, can also be explored to teach the local signs of climate change. In this sense, his speech highlights:

and I was explaining, look, here is the forest, and this diversity, they were already getting to know, they were already asking questions, they were already telling the stories their grandparents used to tell at home. Look here is the pond where my grandmother used to wash clothes, and then I would say: — precisely (Teacher Eric).

The notion of *affordance* is implied when he mentions the uses given to the lagoons in his town. What relationships can the community establish with the pond in question? Instead of being an unknown or strange place for the teenagers, what Éric suggests is that they can get to know it, understand the uses that can be given to it, how it helps in the financial support of the town, how their grandparents used it, and how they can relate to this nature beyond leisure. In his speech, it is implied that the construction of new *affordances* enables interest, care, which is consistent with what the literature states (HEFT; CHAWLA, 2005).

Other speeches also illustrate the relevance given by teachers to the connection with the local reality when communicating about CC, as exemplified by the following excerpt:

Often, the teacher who has difficulty entering the discussion of climate change in a more defined way ends up focusing on the causes of the internet. Also, it is often what the young person cannot do at all, and that ends up more distressing than the awakening of responsibility, the motivation to participate in order to contribute as well (Teacher Helder).

This contact with local reality is something that has been mentioned as extremely relevant by the field of education for years, inspired, for example, by the work of Paulo Freire (1987). Furthermore, what teachers bring is that the same should happen when the central theme is global environmental problems, such as CC. Freire (1987) states that the programmatic content of education should be constituted from the learners' worldviews, impregnated with their longings, doubts, hopes, or hopelessness imbricated in significant themes, so the concrete, the existential situation cannot be left aside. According to Freire (1987), authentic education does not occur from "A" to "B" but from "A" with "B," mediated by the world in which people live.

Teacher Helder also mentions the concept of banking education (FREIRE, 1987) as being present in teaching about socio-environmental relations and states that this model should be replaced by integrating theory, research, and practice, emphasizing the teacher's role in this process.

Presence of guides: experienced people

The presence of guides or experienced people who provide adolescents contact with environmental issues is necessary to develop pro-ecological environmental competence and participation (HEFT; CHAWLA, 2005). In this direction, the teachers directly or indirectly emphasized the importance of these actors in the ecological experience of adolescents.

The role of the other and mediation is also relevant for learning and has been highlighted by several authors, mainly based on the works of Vygotski (1991). Contact with the other and the environment provides an opportunity for symbolic aspects to be built and discovered. Social ties and the broader socioeconomic context are highly relevant for transmitting complex symbolic skills and meanings between generations (HEFT, 2013). Thus, the common ground knowledge that sustainability requires can be facilitated by intergenerational transmission (HEFT; CHAWLA, 2005).

The interviewed teachers emphasized these aspects, highlighting the importance of the teacher and the family in awakening the interest of young people. This can be observed in statements such as:

I was thrilled when the teacher said: look at such and such content and talked about this related to the environment. And when he only gave clues? and our group would find out, that was very nice (Teacher Eric).

Some teachers also highlighted that the political-economic scenarios should be considered when teaching about the local signs of CC and mentioned that youth participation is necessary to demand public policies that support these actions. In this direction, teacher Neto mentions:

besides that, the economic issue of society influences a lot, because if I teach in the classroom so that he does not set fire to the forest, and when he gets home he sees his father setting fire to it... and many times the father does not have the money to do it any other way.

The teachers also suggested that schools create spaces for participation, thinking about socio-environmental education also in terms of continuity and interdependence.

Continuity and interdependence

Continuity refers to maintaining the actions and projects that address ecological protection over time, not being punctual and sporadic. And interdependence refers to the importance of teaching students the connections between the phenomena of nature and how this involves their own lives. Such reflections can be exemplified in statements such as the following:

Environment? When is it to talk about the environment? Just June 5th? No, the environment is not just June 5th. At home, the clothes I wear, I do not just want them on June 5th, because my clothes come from the land, right? (...) The potatoes that I plant on my farm and the bananas that I plant on my farm will not only grow on June 5th. It grows all year round, and it is land, care for the soil, care for the water, care for all that (Teacher Eric).

Although teacher Éric did not use the word interdependence in his speech, his ideas express this principle, which is one of the dimensions of a sustainable lifestyle (CORRAL-VERDUGO, 2010), and that can be thought of by schools. This can be exemplified when Éric states:

Because we are on the web, right? (...) we are here today; if they take the lagoon from Guarairas away from me, I am still educated, but if they take it away from the fisherman? What will he do? What is he going to fish? Are you going to fish in agriculture? No, there are no fish in the fields. So, it is a connection, which we have to understand and be concerned about. Schools have to be aware of this.

Teacher Helder states that the key to seeing CC connections also involves changing how environmental education is done. In this sense, environmental education is also responsible for teaching such interconnections; therefore, it is understood as a socio-environmental and transformative education (JACOBI, 2003).

Final considerations

Such results inspire schools to think about socio-environmental education projects, which consider psychological dimensions that favor sustainable lifestyles, considering global environmental problems. In this sense, it is possible to reflect on the benefits of investing in teacher training, both to deal with the issue of climate change and to deal with the concepts and practices of interdisciplinarity, helping to minimize the anguish of dealing with uncertainties and contradictions in the information concerning the CC.

Tozoni-Reis (2012) points out that there is a possible resistance of environmental educators to think about the curricular insertion of environmental education in school, which has hindered a consistency in this insertion. This would not necessarily be done via discipline but through more dynamic curricula and as a core activity, directly involving the role of the teacher. This reality can be identified in the speech of the interviewed teachers. They mentioned institutional difficulties, difficulties with the systematization of interdisciplinarity and continuity of actions, and difficulties in exercising their role more actively regarding creating and implementing socio-environmental education strategies.

The teachers' speeches illustrated, thus, not only current ties existing in school settings but also illustrated the need for young people to reflect and appropriate knowledge of their local realities. Environmental education, sometimes, is constituted in schools from a problem of the neighborhood itself (TOZONI-REIS, 2012), and the same can be thought of concerning CC.

It is possible to synthesize that teachers mentioned the need for contact with practice and contact with nature as ways to enable more significant consideration of the CC by students. In this sense, the continuity of the projects, classes on interdependence, experiences with the local reality, and the discussion about future orientation are for the teachers means to stimulate behaviors and the construction of beliefs, attitudes, and visions linked to the principles of sustainability. These statements are consistent with the literature, indicating that teachers who have led the implementation of environmental education in

primary school (primarily teachers of science, biology, and geography – a reality also identified by this study) strive for such implementation to occur through active teaching practices (TOZONI-REIS, 2012).

That said, it is necessary to recognize that the study dealt with a restricted population of teachers, specific to the context of the native of Rio Grande do Norte (Potiguar), in northeastern Brazil, with limitations to the generalization of the findings to other population contexts. On the other hand, it is expected that the teachers' view understood here will allow reflections for the most diverse scenarios so that diverse environmental experiences can be thought to foster diverse mitigation actions, facing the challenge of working with global themes of social and environmental relevance, through new studies or implementation, monitoring, and evaluation of interventional measures.

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