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ESTUDIO DE CASO

Knowledge and Actions of Young People Living in Rural Territories and Facing Environmental Problems

Saberes y acciones de jóvenes del medio rural frente a problemas ambientales

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Resumen

Contexto: La humanidad enfrenta una crisis ambiental causada por el antropocentrismo del hombre contra la naturaleza. Los esfuerzos desde la educación ambiental representan una opción alentadora para el cuidado al medio ambiente por ello se considera que la formación hacia el derecho humano a un ambiente sano resulta una opción positiva.

Objetivo: El objetivo del trabajo fue identificar la representación social sobre los saberes de jóvenes de un entorno rural y su posición frente a la problemática ambiental que afecta su medio ambiente.

Metodología: Se aplicó un cuestionario a 260 estudiantes, 143 mujeres y 117 hombres, de las carreras Técnico en agricultura sustentable y Técnico en informática del Centro de Bachillerato Tecnológico Agropecuario (CBTA) No. 254 "Aquiles Serdán Alatriste" de Cuacnopalan, Palmar de Bravo (Puebla, México). La información se organizó por medio del Análisis de Redes (ARS) para conocer la representación social sobre la problemática ambiental, las afectaciones de ésta, las acciones para atender estas afectaciones, y sobre los derechos humanos.

Resultados: Los resultados mostraron que los estudiantes relacionan la problemática ambiental con la basura y no identifican de manera clara las afectaciones de esta problemática en sus vidas diarias; las actividades que realizan en consecuencia a la problemática ambiental se vinculan fuertemente a las 3 "R" (reciclar, reusar y reducir).

Conclusiones: Los estudiantes tienen una visión horizontal de los derechos humanos, en especial con relación al medio ambiente sano.

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Abstract

Context: Humanity is facing a big environmental crisis due to the effects anthropocentrism has against nature. Learning about environmental education has become one of the best alternatives in taking care of our planet; for that reason, living in a safe and clean environment has been considered a positive impact on human rights.

Objective: The purpose of this investigation was to identify the knowledge levels that young people living in rural landscapes have on the topic of environmental crisis, as well as and their opinions on how it affects their surroundings.

Methodology: 260 students (143 women and 117 men) were selected to answer a questionary to learn what knowledge they have about the environmental situation. These students belong to the careers Technician in Sustainable Agriculture and Technician in Computer Science of the Center for Bachelor in Agricultural Technology (CBTA, in Spanish) No. 254 "Aquiles Serdán Alatriste" of Cuacnopalan, Palmar de Bravo (Puebla, Mexico).

Results: The results or the responses were organized using Network Analysis (NA) to know the general opinion that this part of the population has on the environmental problem, its effects, the actions taken to address these effects, and about human rights. The results show that these students associate environmental problems mostly with trash and the only way they know to help is related to the three R's strategy (Recycle, Reuse, Reduce).

Conclusions: According to the results, students tend to associate environmental problem mostly with trash and seem to not know the effects this problem has on their everyday lives, thus having little knowledge on strategies taken to address the overall issue. Additionally, they seem to have a horizontal vision on the issue on human rights, specially related to a safe environment.

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Keywords: Environmental knowledge, environmental crisis, human rights, youth, environment.

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INTRODUCTION

For the last 50 years, the States belonging to the International Community have placed special emphasis on environmental care. In the 1970s, the environment was raised as a matter of global importance during the United Nations Conference on Human Environment, and different summits and actions have been held in favor of the environment since then, defining it as one of humanity's main challenges. (Fernández and García, 2017) state that the relationship between human beings and nature works out to the same extent that the link they maintain is understood.

Understanding environmental issues and caring for the environment lead to clarifying what the environment is, and in this regard, (Armesto and Angarita, 2017) point out that "it is a complex system composed of physical, biological and social parts where the use of these can have adverse or beneficial effects, it is important to consider that, when the biotic and abiotic components interact, any change in the abiotic environment will have repercussions on living beings" (p. 133-134). Despite recognizing the close relationship between beings, there is still an obsessive search for wellbeing based on the advantages of technology, scientific advancement, and consumerism (Cantú, 2012), which has led to the deterioration of the environment and caused an irreversible environmental crisis.

The loss of the quality of the environment at a global level is increasingly evident. (Rodríguez, Bustamante and Mirabal, 2011) affirm that the deterioration is due to "indiscriminate use of natural resources and insufficient attention directed to the negative effects that this produces on living beings" (p. 511). For example, there are the catastrophic natural phenomena that arise and become more intense due to the action of hurricanes, tsunamis, torrential rains, and floods, as well as droughts, excessive temperatures, melting of polar glaciers, among others. This scenario is alarming and is the reason why a transformation of environmental knowledge is necessary, which in addition to contemplating the rational use of natural resources, raises a new structured ethic that guides the human attitude towards environmental responsibility and sustainability.

In relation to caring for the environment, (Millán and Verástegui, 2017) indicate that "managing to take care of the environment and the land (geo) can be a source of inspiration to develop models that allow addressing complex problems" (p.68). (Navarro and Garrido, 2006) affirm that people must change and feel responsible for the natural environment in which they live. To achieve a healthy environment, it is necessary that most people develop values of caring for the environment that lead to a different way of living. In this sense, an adequate tool to influence environmental values and actions in a positive way is education. Actions in favor of environmental care developed from environmental education are valued as a positive alternative to the dimension of the problem, as pointed out by authors such as (Zabala and García, 2008, Castillo, 2010, Murga-Menoyo and Novo, 2017, Pérez and Vilches, 2017). All of them agree that one of the purposes of environmental education is to develop participatory processes that consider the different actions that teaching and learning entail, and thereby positively influence social and environmental aspects.

Also, (Muñoz-Cadena, Estrada-Izquierdo and Morales-Pérez, 2016) state that the objective of environmental education is to develop citizens with sustainability criteria. This kind of citizens will only be developed if it is possible to build in students the competencies on environmental care. For (Severiche-Sierra, Gómez-Bustamanre and Jaimes-Morales, 2016), environmental education is a management strategy that allows sharing issues on environmental care within educational training cycles. (Torres and Arias, 2019) define it as a "systematic process of translating learning principles into study plans for the creation of materials and activities that seek the instruction of an individual in specific topics" (p. 51); in this case, the "specific topics" are environmental matters.

The consensus is that young people in training can be encouraged through environmental education to care for the environment from an ethical point of view with attitudes of harmony and respect.

Influencing environmental education in every educational system is important, but the upper secondary level is essential, given that students at this level can choose to study at more advanced levels, or enter the labor market, partaking in important decisions, such as those related to the environment. (Isaac-Márquez *et al.*, 2011) argue that high school

> "… constitutes the responsible training space in which young people of the age to begin to exercise their rights and obligations as citizens, acquire the knowledge and skills that allow them to make informed and responsible decisions; in addition, young people from high school are in the process of building their vision particular of the world and to make transcendental decisions for their life and their environment" (p. 86).

High school youth who grow up in rural settings have the knowledge and skills on local practices for the management of sustainable processes (Ruíz, Barraza and Ceja, 2009). This means they tend to be more sensitive to environmental problems when they are born and raised in a rural context; therefore, it represents a significant option in transforming the way they relate to the environment in their context. For this reason, the relationship between the school and the community is fundamental in rural communities (Paré and Lazos, 2003), hence the relevance of knowing the social perception this population has on environmental problems. It is also necessary to look at the set of actions for caring for the environment from different approaches. One of these approaches on human rights considered it to be "the set of faculties, institutions and prerogatives that, in each historical moment, specify the demands of the dignity, freedom and human equality, which must be positively recognized by legal systems" (Villabella, 2011)(p. 3). This means that "people have the opportunity to live harmoniously and free from misery" (Mejía, 2017) (p. 39). Human dignity is the essential quality of the human being, which distinguishes the human from the non-human (Castán, 2007)(p. 1). The concept of human dignity "besides being the source from which all human rights are born, is the vertex that sustains the indivisibility of the different generations of human rights" (Habermas, 2010)(p. 12). Human dignity, thus, upholds human rights and is the basis for judicial decisions.

The recognition and evolution of human rights throughout the 20th century have mostly taken place in world settings that undermine human dignity in their communities. From the recognition

of the achievement of certain human rights, they have been divided by generations. Thus, according to each guaranteed right, the first three generations are the result of the civil and political evolution of societies; the fourth generation is the product of the newconditions of society, technology, and globalization. According to (Bailón, 2018) this generation is directed to three areas: biomedicine (right to life), the rights of new communication and information technologies; and the rights of humanity related to the protection of the ecosystem (environmental law). According to (González, 2008) "the right to the environment is the present right of guarantee of future generations" (p.4).

Inquiring about the general social perception high school students have on environmental problems, their effects, consequent actions, as well as their knowledge about the human right to a healthy environment represents a valuable task to propose environmental education programs with a significant impact on students attending high school.

Social perceptions were considered by (Bello, Meira and González-Gaudiano, 2017) as "sociocultural patterns with different functions, one of them is to pragmatically guide people's actions" (p. 507). For (Calixto, 2018), social representations are networks where concepts and images interact, whose content constantly evolves in time and space, and shows an empirically acquired knowledge that shows the vision that one has about a reality.

Based on the above, the objective was to identify the social perception of young people from rural environments and their intervention in the face of environmental problems that affect their environment, as well as their perception in relation to human rights (particularly the human right to a healthy environment).

METHODOLOGY

To collect data, a questionnaire was applied to 260 students: 143 women and 117 men with an average age of 16 years old. Nine groups were selected: two from first semester, four from third semester, and three from fifth semester of their careers (Technician in Sustainable Agriculture and Technician in Computer Science). The instrument consisted of 10 questions: seven of these ten captured three ideas that relate to the environmental problem, effects of the environmental problem, actions in response to said effects, tasks to take care of the environment, knowledge about human rights, and ideas about the human right to a healthy environment. Three concepts were requested in order to obtain the strongest idea that emerged when responding.

The questionnaire was applied in November 2019 under the following procedure: each of the students was given a printed questionnaire along with answering instructions, and the objective was explained to them.

To organize the information, the Social Network Analysis (SNA) was used. This analysis focuses on ideas and the connections between them, which allows a global vision of the resulting data. The analysis was carried out through the measurements of the SNA through the UNICET 6.5 soft-

ware, where networks were obtained in differentiated groups and subgroups of nodes (Jiménez and Fernández, 2019); these nodes are identified according to their importance within the network and coinciding to the applied metrics: measures of centrality and degrees. The nodes represent the ideas and expressions of the students regarding the environmental problem: effects of the environmental problem, actions in response to the effects of the environmental problem, knowledge about human rights, and ideas about the human right to a healthy environment. Once the graphs were prepared, they were analyzed based on centrality and power metrics, this allowed classifying and identifying factions that represent points of convergence and where the larger or smaller size of the figure accounts for more or less signaling of the response.
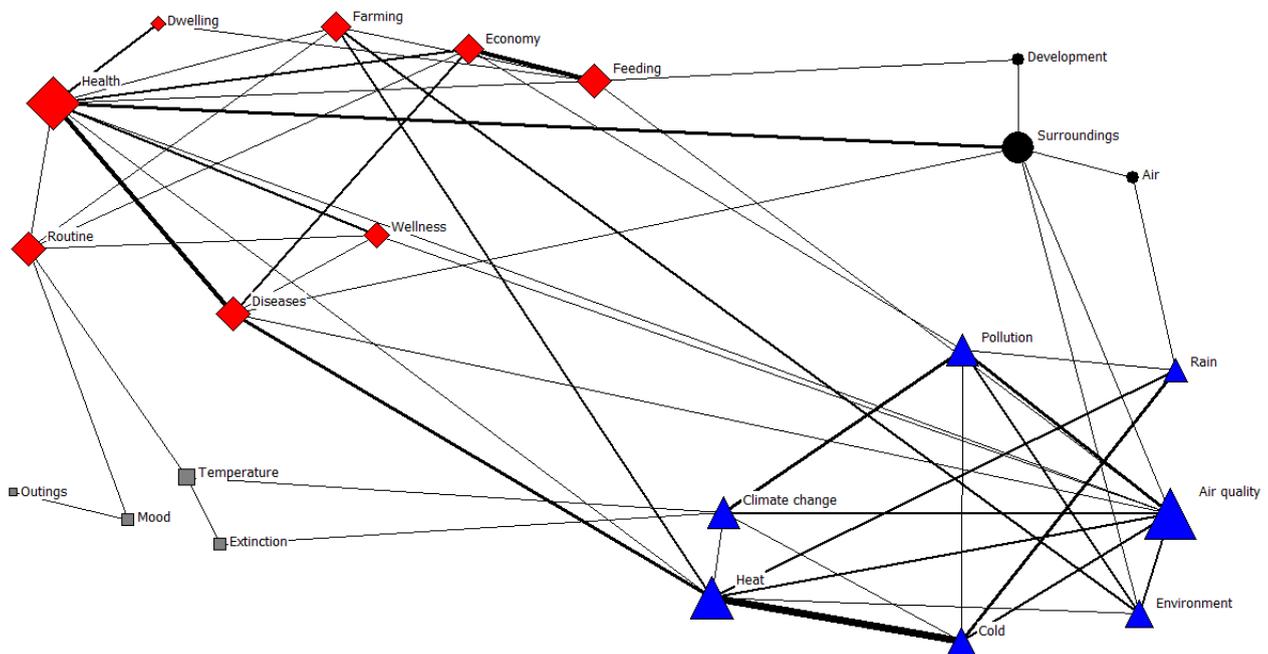
RESULTS

Out of the 260 students participating, 98.8 % have heard about environmental problems, but there is high divergence in answers regarding which environmental problems they knew. Figure 1 shows 48 different responses (nodes) that indicate little precision on the environmental problem. The five different geometric figures that are observed in the graph represent points of convergence (factions), and size indicates how many times these responses were mentioned. There are two main factions identified: the first is the social perception of the environmental problem associated with climate change, pollution, alterations, destruction, heat, and extinction (identified with a blue square); and the second refers to climate, environment, and nature (identified with a red triangle). There are three peripheral factions: environmental problems to ecosystems, the greenhouse effect, and the thawing of ice from volcanoes (black circle, pink diamond, and gray triangle, respectively). These results show that, although there is an idea about environmental problems, it is not clearly identified.

The fact that the participants show scattered recognition of the environmental problems affecting them reveals that their interests through daily lives relate to different areas, such as technology or consumption, as (Cantú, 2012) points out; or it may be the result of their education not developing the competencies required to acquire an attitude of care for the environment. In this regard, (Vargas, Medellín, Vázquez and Gutiérrez, 2011) comment that education needs to be different and train students with a broad perspective that leads to true care for the environment.

In relation to, "how the lives of the participants are affected by environmental problems," Figure 2 shows 22 nodes with two central factions: the first refers to health, well-being, housing, and food (red diamond); and the second indicates a change in climate, air quality, and pollution (blue triangle). These central factions seem to be linked more to general environmental problems instead of a direct impact on them. On the other hand, the peripheral factions indicate temperature (gray squares) and the environment (black circles). This graph students are able to identify some direct effects on their lives, such as health-related, as well as other indirect effects related to their environment. In this regard, (Armesto and Angarita, 2017) comment that the relationship between human beings and na-

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Figure 1. Known environmental problems

Source: own.

ture is such that they cannot be understood in isolation; this is why knowing the effects derived from climate change will shed some light when caring for the person and for the environment. Although-some confusion is observed when understanding the effects of environmental problems, they are not ignored completely. In a study carried out by (Vargas, Medellín, Vázquez and Gutiérrez, 2011) with university students, it is highlighted that young people are promoters of environmental awareness, which encouraged them to continue researching the consequences and environmental knowledge of this population.

In relation to, "what do you do in your daily life as a result of the effects of environmental problems?" 80 % agreed on actions that lead to environmental problems, such as burning grass or garbage, cutting down trees, wasting water, and littering, which shows that most of the participants did not understand the question. Those who understood the question pointed out that they practice the "3 Rs" (reducing, reusing, recycling) or protect themselves from the sun. This shows that the environmental training they have received is reduced to actions implemented as a trend that do not necessarily solved the heart of the problem (such as the need to provide better environmental education to high school students). As (Isaac-Márquez *et al.*, 2011) indicate, this population is shaping their vision on relevant issues such as caring for the environment, and they face the possibility of exercising their citizenship, so environmental education processes should offer quality coaching that trains them to make better decisions that respect and protect the environment.

Figure 2. Effects on daily life

Fuente: own.

Regarding "what do you do to take care of the environment?" 90 % of the responses led to the aforementioned reducing, reusing, recycling, not burning garbage, avoiding fires linked to greenhouse gas emissions, and taking care of plants and trees since they feed on carbon dioxide and generate oxygen. The answers obtained do not show that measures are carried out to have an impact on reducing environmental problems in their surroundings.

The exercise of human rights is essential to achieve well-being, and it is necessary to research more to see if the human right to a healthy environment is acknowledged. In this regard, 85.8 % of the respondents indicated that they have heard about human rights, but only 34.6 % stated that they had heard about the right to a healthy environment; 49.6 % indicated that they had not heard about it, and 15.8 % did not answer that question.

Figure 3 shows 40 different responses (nodes) with an outstanding faction related to the legal aspects of human rights (the red square), which accentuates the nodes referring to freedom, respect, and equality and is the core of social perceptions on human rights. The two factions that follow in level of importance are: the protection granted by human rights regarding help, support, and care (blue triangle); and freedom of expression, to express opinions, to express oneself, to participate, and to vote (black circle). Therefore, the results show that students associate human rights with protection and participation. On the other hand, the two peripheral factions indicate the right to be different and to identity (pink triangle), and the institutional perspective with which human rights are understood
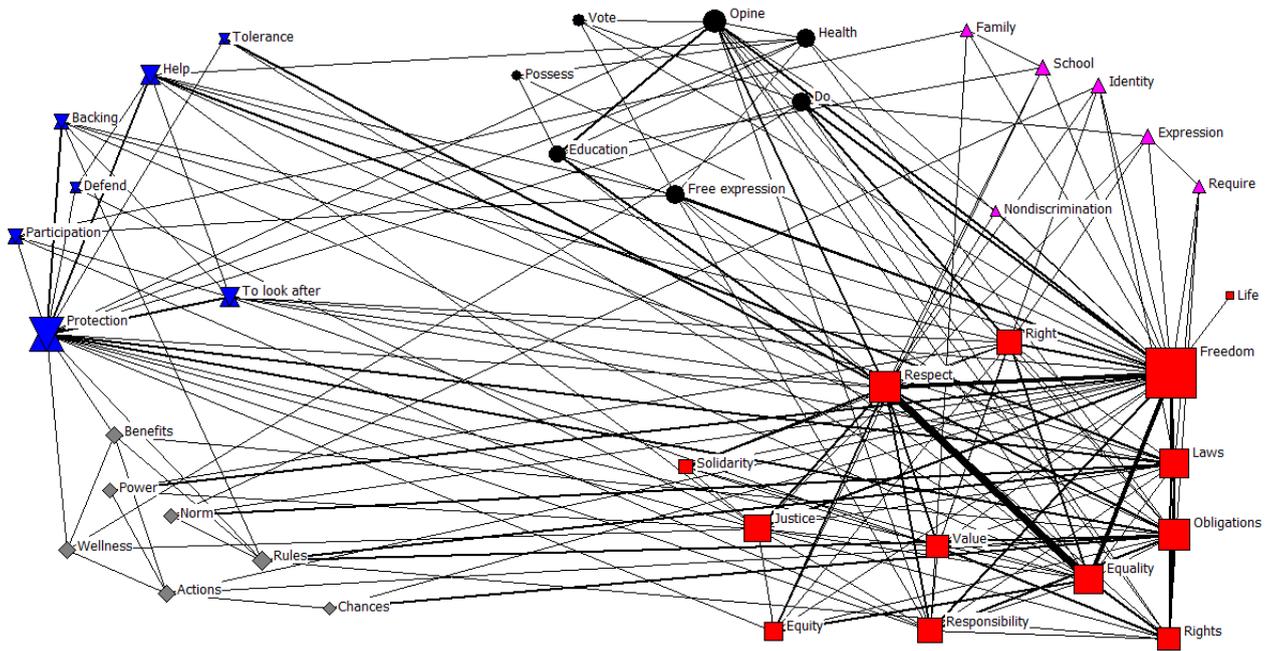
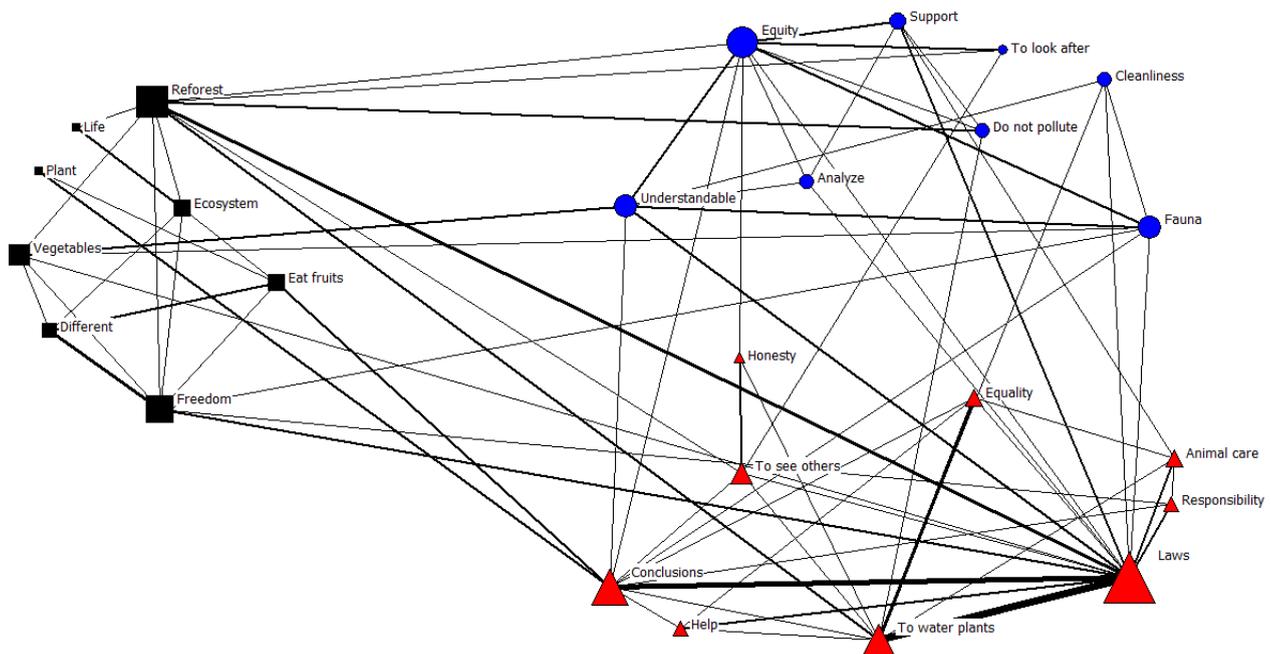**Figure 3.** Knowledge about human rights

Source: own.

from their school vision (gray diamond). Now, in order to guarantee the protection of human dignity (Castán, 2007) and that human rights provide the opportunity to live harmoniously and free from misery, (Mejía, 2017) points out that the subjects who hold a set of rights need to actually know these rights in order to exercise or even demand them; and this assertion applies to human rights. The students report knowing human rights, but their answers are centered on a look at actions aimed at public participation and not on the nature of human rights, which is the protection of human dignity.

Regarding the human rights they know, there was a low response rate, and the most used word in this question was "education," strongly linked to health and to another group of words that represent the gaze of participatory and representative democracy, i.e., voting. Also, some words with fewer connections alluded to non-discrimination, freedom of expression, and fairness. These results show that young people are not clear about what human rights are or what they consist of.

Social representation about the question "What is the human right to a healthy environment for you?" is shown in figure 4. There are 25 nodes with three factions: the first one (red triangle) indicates right, responsibility, equality, and honesty; the second one (black square) indicates reforestation and freedom; and the third faction (blue circle) includes concepts such as equity, commitment, and cleanliness. These results show that the social representation on what the human right to a healthy environment is imprecise.

The different generations of human rights (Bailón, 2018) have gone through scenarios that violate

Figure 4. Knowledge about the human right to a healthy environment

Source: own.

human dignity; however, the recognition of prerogatives (the recognition to receiving better treatment) has given way to new rights. Some examples of this are biomedicine, the new technologies, or the rights to protect ecosystems (called environmental law). Environmental law in recent decades has gained relevance due to the recognition of climate change and is intended to guarantee the conservation of life as we know it and even more, as (González, 2008) points out, to guarantee the survival of future generations. This is significant because, if it is possible to guarantee the sustenance of life for future generations, well-being and life are being guaranteed in the present time.

CONCLUSIONS

The social perceptions of rural youth from Cuanopalan, Puebla, Mexico, in relation to environmental problems, their effects and actions, as well as its relation to human rights (particularly the human right to a healthy environment) are imprecise, superficial, confusing, and even contradictory. Although this is an exploratory study, it is necessary to continue investigating to know how these perceptions affect the environmental problems that affect them.

Young people lack precision on what the environmental problems and their effects are. They relate this phenomenon to stereotypes that lose meaning and only memorize by repetition. It is evident that, contrary to common belief, young people in rural areas are not more sensitiveto the environmental

problems of climate change just because they belong to said territorial demarcation.

The young people who participated in this study do not know human rights, much less the human right to a healthy environment. Although they are capable of expressing some information such as the human right to access food or freedom of expression, they can only mention them without further explanations; therefore, they fail to understand what the human rights consist of, much less demand them.

As it is an exploratory study, it is necessary to recognize the need to continue investigating and confront results in similar settings, thereby ratifying whether the social construction that young people from rural areas have on environmental problems, their consequences, and the human rights is imprecise, superficial, and confusing. Thus going further to propose training actions aimed at influencing the reduction of any environmental problem.

It is recommended to think about training strategies applicable to the official plans and programs of the upper secondary level that, from the sociocultural reality of the rural environment, seek to reformulate the processes of construction of knowledge about the environment and climate change. This change will promote the development of environmental competencies linked not only to the identification of environmental problems, their causes and consequences, but also to principles and values that support the formation of knowledge around the right to a healthy environment. Only in this way will it be possible to influence the provision of environmental skills to young people that generate a real dynamic of environmental care.

With the help of educational processes, young people must re-dimension that their individual perception of themselves and the environment that surrounds them has repercussions on others. Only with this awareness will they become the eco-citizens the planet requires.

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