Percepciones y acciones de las y los estudiantes de la Universidad Autónoma del Estado de México respecto a la educación en el desarrollo sostenible

Perceptions and actions of Autonomous University of the State of Mexico students in regard to a sustainable development education

Percepções e ações dos alunos da Universidade Autônoma do Estado do México em relação à educação em desenvolvimento sustentável

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Resumen

Hoy en día la relación entre la naturaleza y la sociedad se encuentra en un estado crítico. Las grandes industrias han transgredido los tiempos del mundo natural, rompiendo el equilibrio de los ecosistemas: un daño irreversible al planeta. Al mismo tiempo, las personas, en algunas ciudades, han cambiado el sentido de lo que se necesita para vivir. La perspectiva de la calidad de vida se enfoca en la acumulación de bienes, se piensa que *más es mejor*, lo que provoca un consumismo sin importar las repercusiones a nivel personal, social y ambiental. Ante este panorama, se consideró importante conocer la relación que mantienen los estudiantes de la Universidad Autónoma del Estado de México (UAEMéx) con el desarrollo sostenible. Por ello, se realizó una investigación cuyo objetivo fue identificar y analizar las percepciones y acciones relacionadas con el modo de vida sostenible o no sostenible en este grupo en particular. La

investigación fue de tipo cualitativo y de nivel descriptivo; se basó principalmente en dos categorías: *1)* la construcción del *ethos* sostenible y *2)* la educación sostenible en los estudiantes de la UAEMex, Campus Toluca. En la primera, se profundiza en las percepciones y acciones que realizan los universitarios respecto a la sostenibilidad; y en la segunda, se inquirió sobre su perspectiva con relación al tema. El estudio se realizó a partir de una muestra intencional de 47 alumnos de tres áreas del conocimiento: ciencias de la salud (Medicina y Enfermería), ingeniería y tecnología (Ingeniería y Arquitectura) y ciencias de la educación y humanidades (Psicología); a esta muestra se le realizó una entrevista semiestructurada.

De entre los resultados de la investigación, la cual se realizó en el año 2017, destaca que los estudiantes reconocen que la crisis ambiental es causada por los seres humanos, por lo tanto, su resolución y los cuidados ambientales deben ser responsabilidad de estos. Además, siguiendo con los resultados, el universitario sí lleva a cabo acciones relacionadas con el desarrollo sostenible, que provienen de hábitos y costumbres adquiridos principalmente en la familia. Sin embargo, la percepción que tienen es que en la universidad no se cuentan con las condiciones suficientes para llevar a cabo acciones en pro del ambiente. En esa línea, las propuestas que dan para mejorar el desarrollo sostenible en la universidad son hacer mayor difusión de la información relacionada al cuidado del ambiente, contar con contenedores para material de reciclaje y desechos y realizar actividades relacionadas con el cuidado del ambiente en las que se involucre a la comunidad estudiantil.

La información de esta investigación permitirá realizar propuestas en el campo educativo a nivel licenciatura en la UAEMéx. Es necesario poner énfasis en una educación formal e informal para el desarrollo sostenible, que permita a los habitantes del planeta solventar las necesidades actuales, sin comprometer las necesidades futuras, con responsabilidad y solidaridad.

Palabras clave: educación, ética, sostenibilidad.

Abstract

Nowadays, the relation between nature and society is in critical condition. The big industries have transgressed the times of this relation, breaking the equilibrium of the ecosystems. This is provoking an irreversible damage to our planet. Simultaneously, people in some cities have changed the sense of what is needed to live. The perspective of the quality of life focusses on the accumulation of goods and it is thought that *more is better,* causing a consumerism no matter the repercussions at a personal, social and environmental level. In light of this situation, it was considered important to know the relation in which the students of the UAEM are with the sustainable development. For this reason, it was made an investigation whose goal was to identify and analyze the perceptions and actions related to the sustainable or unsustainable lifestyle in the students of the UAEM. The investigation was qualitative and descriptive. It was based mainly on two categories: the building of sustainable ethos and the sustainable education in students of the UAEM in Toluca. The first category go far into the perceptions and actions that the university students execute regarding to the sustainability. In the second one, it was known the perspective of the students regarding to the topic. The study was made from a purposive sample of 47 students from three different areas of knowledge: Health Sciences (Medicine and Nursing), Engineering and Technology (Engineering and Architecture) and Learning Sciences and Arts (Psychology) in Toluca, and they answered to a semi-structured interview.

From the results of the investigation made at the UAEM in the year 2017, it is highlighted: The students acknowledge that the environmental crisis is caused by the human being, therefore, the recuperation of the environment and its citizens is responsibility of the human being; the university student in fact execute actions related to the sustainable development, and that actions come from habits and customs acquired mainly in the family; the perception that the students have is that the University does not have the conditions to accomplish actions in the interest of the environment ; the proposals that the students gave in order to improve the sustainable development at the University are: give wider diffusion of the information regarding to the care of environment, to have containers for recycling material and wastes, and conduct activities related to the care of environment in which the students can be involved.

The information of the investigation will allow the development of proposals in the education sector at a bachelor level at the UAEM. Then it becomes necessary to emphasize a formal and informal education for the sustainable development that allows the inhabitants of the world address the current necessities, without compromising the future necessities, with responsibility and solidarity.

Keywords: education, ethics, sustainability.

Resumo

Atualmente, a relação entre natureza e sociedade está em estado crítico. As grandes indústrias transgrediram os tempos do mundo natural, quebrando o equilíbrio dos ecossistemas: um dano irreversível ao planeta. Ao mesmo tempo, as pessoas, em algumas cidades, mudaram o significado do que é necessário para viver. A perspectiva de qualidade de vida centra-se na acumulação de bens, pensa-se que mais é melhor, o que provoca um consumismo independentemente das repercussões a nível pessoal, social e ambiental. Diante desse panorama, considerou-se importante conhecer a relação que os alunos da Universidade Autônoma do Estado do México (UAEMéx) mantêm com o desenvolvimento sustentável. Para tanto, foi realizada uma pesquisa cujo objetivo foi identificar e analisar as percepções e ações relacionadas ao modo de vida sustentável ou insustentável nesse grupo em particular. A pesquisa foi de nível qualitativo e descritivo; Baseava-se principalmente em duas categorias: 1) construção de ethos sustentável e 2) educação sustentável para estudantes da UAEMex, Campus de Toluca. Na primeira, aprofunda as percepções e ações que os universitários realizam em relação à sustentabilidade; e no segundo, indagou sobre sua perspectiva em relação ao assunto. O estudo foi realizado a partir de uma amostra intencional de 47 alunos de três áreas do conhecimento: ciências da saúde (Medicina e Enfermagem), engenharia e tecnologia (Engenharia e Arquitetura) e ciências da educação e humanas (Psicologia); Esta amostra foi submetida a uma entrevista semiestruturada.

Entre os resultados da pesquisa, que foi realizada no ano de 2017, destaca que os estudantes reconhecem que a crise ambiental é causada por seres humanos, portanto, sua resolução e cuidado ambiental devem ser de sua responsabilidade. Além disso, acompanhando os resultados,

a universidade realiza ações relacionadas ao desenvolvimento sustentável, provenientes de hábitos e costumes adquiridos principalmente na família. No entanto, a percepção que eles têm é que a universidade não tem condições suficientes para realizar ações em favor do meio ambiente. Nesta linha, as propostas que dão para melhorar o desenvolvimento sustentável na universidade são fazer maior difusão da informação relacionada ao cuidado do ambiente, contar com recipientes para material de reciclagem e desperdício e realizar atividades relacionadas ao cuidado do ambiente em qual a comunidade estudantil está envolvida.

As informações desta investigação permitirão fazer propostas no campo educacional em nível universitário na UAEMéx. É necessário enfatizar a educação formal e informal para o desenvolvimento sustentável, que permita aos habitantes do planeta satisfazer as necessidades atuais, sem comprometer as necessidades futuras, com responsabilidade e solidariedade.

Education for sustainable development

Starting point, the current problem

Since the beginning of time, human beings have been in contact with an environment that has provided them with sufficient means to live; He has taken advantage of the environment around him to satisfy his basic needs. However, over the years, the planet was populated with more humans who no longer only thought about their basic needs, but also to satisfy culturally created needs. As a result, he began to demand more from the environment than he could provide.

In the same way, people and societies were losing the awareness of taking care of what they had allowed them to live, put aside the teachings instilled by their ancestors regarding the care of the environment and left in carelessness the rest of living beings, including the mother land, reaching, in some cases, to the point of extinction.

Later, thinking about the welfare of society, industrial development was promoted without taking into account the ecological risks that such promotion would cause. They were focused on achieving a development that would allow the communities to have greater growth and, therefore, a better quality of life. But that development, from time to time, has become a developmentalism, "we have developed a culture in which 'more' seems to be always 'better'" (Novo, 2010, p 62).

Developmentalism has caused in human beings a false need to own goods that society itself has made believe that they are indispensable, promoting an excessive consumption that at the same time has caused an uncontrolled growth in modern societies; This, with the passage of time, has brought no less damage to the ecosystem. In addition to all this, there are people who have the belief that the resource of nature is inexhaustible:

> We have lived (and still live in part) in a kind of mirage in which we think that reason can account for life leaving aside imagination, feelings or values. It also continues to operate as if the goods of Nature were unlimited (Novo, 2003, pp. 6-7).

Also, the developmentalism has also contributed to the increase of the economy in a disproportionate way: it has only benefited a small group of people, which, consequently, has brought a division between the rich countries of the North and the poor countries of the South; Even though those are supplied by these, there is no equity in between.

One of the explanations for understanding the crisis between the human being and the environment refers to the confusion between the needs and desires that are generated in the people of modern societies. In this regard, Parellada (2008) comments that "not all the desires of individuals should be considered needs, no matter how strong the demand of desire or how intense the frustration experienced by the individual when it is not satisfied" (p. 78).

Another is the modification of priority values for society, which at the same time have been reflected in the actions of people, which has caused it to pass over the times of nature

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The environmental crisis we are currently facing as a civilization has nothing to do only with styles of development and forms of economic growth or with the excessive and accelerated increase of the population, technology and its polluting products, as well as the overexploitation of natural resources, but also by the loss of values and the lack of certainty in the future, a picture that represents the need to look for new ways and the rethinking of values and lifestyles (García, 2011, p. 88).

On the other hand, by making an approach to the sphere of universities, these educational institutions have also increased their activities that generate pollutants and damage the environment; The large number of inhabitants that they welcome, because of the population growth, is one of the reasons. In that sense, Juarez, Juan and Estrada (2016) mention that "the university generates impacts on the environment, mainly, those associated with the generation of waste, vehicular transport, discharge of wastewater and emission of polluting substances into the atmosphere. The university has an ecological footprint "(page 2).

At this point, as Novo mentions, "what is in danger is not only the quality of life, but life itself" (2012, p.12).

Sustainable development

This has given rise to a series of questions about which are the most viable ways for the recovery of our ecosystem, or, in other words, which is the most appropriate way to damage our environment as little as possible. One of the answers leads to promote sustainable development.

Sustainable development is "that which satisfies the needs of present generations without compromising the ability of future generations to satisfy their own" (Novo, 2009b, p 208). In other words, what is being sought today are viable alternatives to solve the needs, but in such a way that the planet is harmed as little as possible and without jeopardizing the satisfaction of the basic needs of future generations.

> The sustainable future is built through a political epistemology and an ethic of responsibility towards life; this implies opening up the field of the possible within the cosmic, geophysical and ecological conditions of the living planet we inhabit, and of the human conditions to think and lead through knowledge, knowledge, meaning, dialogue, ethical responsibility and of political action, the possible sustainable forms of appropriation and transformation of nature. (Leff, 2011, p. 96)

Acting responsibly is the key to sustainability: thinking that current generations, as inhabitants of the planet, have a commitment to the new generations, which will obviously need the resources provided by nature. So it is necessary to put aside selfishness and start acting in favor of the regeneration of our planet in a responsible manner. This is not impossible, there are community efforts that are carrying it out. As mentioned by Novo (2012), "it is possible to speak of true development in some communities that, without growing economically, have been able to reorient their priorities deeply: to make a balanced consumption of their natural assets; distribute resources equitably; education, etc. "(page 57)

Both authors, Leff and Novo, agree on the need for a change that goes from the personal to the social to achieve the desired goal; a change in the reconstruction of the valuations of each human being, since in order to reach sustainability, the participation of all is unavoidable. As he says Sastre (2011):

> If we identify, the cause-effect relationship between an economic and social system based on consumption and a large part of the great problems of sustainability on a global scale, we can start to carry out actions that lead to change (...) starting from the micro to the macro (p. 69).

For Novo (2009a) it is necessary to face some conditions that allow sustainability:

- Reduce the rate of consumption of natural resources.
- Encourage the use of renewable energies.
- Reduce, recycle and reuse the goods we consume.
- Emphasize sustainable agriculture models.
- Make sustainable management of forests.
- Pay special attention to marine biomes.

- Invest large resources in the restoration of degraded ecosystems.
- Modify the food and consumption patterns of the rich sectors of the planet.
- Change our mindset regarding long-distance freight transport.
- Avoid the environmental deterioration that accompanies poverty (p. 215).

As can be seen, sustainable development requires the realization of different activities that together favor the planet. To achieve a change it is necessary that there be a participation, first of all, individual; Subsequently the changes will come at the local level, since there is no collective development if there is no individual development. It is very important to set aside consumerism and developmentalism, because "the environmental issue is no longer only scientific, but political and social. It no longer belongs to a minority: it is the daily patrimony of all humanity "(Novo, 2012, p.6).

An important project that has worked in the field of sustainability in Mexico is the Sierra Gorda Ecological Group. About this group we can say the following:

> He has been working since 1987 for the protection of the environment and the sustainable development of rural communities in the state of Querétaro, in the heart of Mexico. His perseverance and innovation has earned him the recent award of the prestigious National Geographic World Legacy Award, in the Conservation of the Natural World category, which highlights leading companies and organizations in travel and eco-tourism (United Nations Educational Organization, Science and Culture [Unesco], 2016).

Developing a project like the one mentioned above is not easy, it requires a long path that must be accompanied by education.

Sustainable development and education

For Luengo (2004), the term education refers to the following:

> The term education has a double etymological origin (...). As the Latin verb educere means to lead outside, to extract from the inside out, from this position, education is understood as the development of the potentialities of the subject based on the capacity it has to develop. (...) The term educare is identified with the meanings of breeding, feeding and is linked to educational influences or

actions that are carried out from outside to form, raise, instruct or guide the individual (p 32).

Undoubtedly, these two conceptions of the term should be taken into account in the educational approach that aims to achieve training for sustainable development. Education involves both receiving from people what their abilities allow them to contribute as the process of guidance and, more often than not, imposing cultural content.

In another position, Caballero (2011) argues that:

Teaching participants to "learn to learn" also contributes to the integral development of the human being and his satisfactory development in the world that surrounds him and of which he is a part. This means that the Subject can understand, give meaning to new experiences and reach the resolution of problems to transform their environment (…):

- Learn to know, stimulating knowledge and relevant and relevant information for the re-signification of its cognitive structure.

- Learn to do, fostering the development of skills and abilities for their application in everyday life.

- Learn to be, recognizing values, environments, and directing the subject to assimilate and incorporate them in their daily actions to modify their behavior.

- Learn to live together, favoring the formation of groups in which the human being is recognized as a social actor that socializes and interacts with others to transform their environment (p. 50).

Leff (2011), On the other hand, from a perspective of pedagogy for sustainable development through education, he mentions the following:

It is not only about reporting on the environmental crisis and global warming, but about unraveling its root causes. It is a pedagogical practice, that more than to impart to the student the current knowledge and the social (and environmental) norms (...), is to prepare the thought and the life for the incognito, to think the unthought, to deconstruct theoretically and practically the world, to try other ways of thinking-feeling-acting, to listen to the ineffable, to look at the other untranslatable to me and to oneself; to link in a dialogue of knowledge, where

fertility does not spring from the judgment of proven truth, but from the probable coming (p. 102).

In the same vein, for Novo (2009b) "it is necessary that education, as an instrument of socialization and critical attitude, adopt valid responses to the challenges that humanity has posed" (p 197). In short, carrying out the guidelines that govern sustainable development is easier if it starts from the classrooms with students at a general level.

> In this sense, and in particular with regard to higher education, there is a need for universities to be involved in a manner that is committed to the problems that affect the viability of the planet as a life support system for human beings and all living species (Conde, González y Mendieta, 2006, p. 15).

University education will have to take into account that "global thinking must be prolonged in a local action, an action that commits the individual to his environment. So it is convenient to work helping to understand the problems from their everyday reality, where the real questions them "(Novo, 2012, p.74). Thus, it is not possible to intervene in situations that are far from our reach, rather it is necessary to take measures in situations that directly affect and with the closest people, in changing habits and ways of thinking.

The above alludes to living an ethic as the construction of an ethos. For Mendoza (2016), "the original meaning of ethics consists of 'directing', accompanying the formation of each human being, from himself and for the world, with the aim of assuming the meaning of coexistence (coexistence) with the other, co-munity (common unit) "(p.12). From the beginning it is part of a whole, it is not lived in isolation; we live in a group in which the actions of some affect the others and vice versa. This is why it is mentioned that the construction of the ethos goes from the individual to the social, it is built based on the actions that are decided to do or not to do, everything is connected in some way with the others. Again in words of Mendoza (2016):

> Each group or community and / or group culture have a way of thinking about the original ethos and of orienting it. That depends on your world view. This interpretative vision of ethos is called ethics, as a reflection on the original possibility of the human being. Such interpretative vision leads later to the conception of certain codes of norms and laws, to guide the community ethos, that is, the way of being of the actions of the community (p. 14).

This is how the ethos is formed according to the customs and traditions of society in which each individual is immersed and it is each one's job to build their own destiny and help future generations to learn and carry out responsible actions for care medium. García Rendón and Panchi (2015) put it in the following terms:

> It is necessary to live the construction of the ethos beyond the human habitation. Move from an anthropocentric vision to one that involves all the actors that intervene in life. As well as assuming the co-responsibility of the consequences that are had by the actions that we exercise to the detriment of the Other living beings (p. 176)

From this point of view, it is understood that "the ethos is the process of formation and construction of the socio-moral identity" (Yurén Camarena, 2001, p.99). It comes from the human condition itself, it is from the interior of each person that good or evil is born, and it is the decision of it to give it the value it considers the environment in which it is located.

On this basis, it can be said that human beings are being built day by day, they are acquiring new knowledge and it is the decision of each human being to build up for themselves and for others. Because, as is well known, not all actions or knowledge help to form responsible people with the environment; everything will depend on the assessments that are assigned to the environment.

For Benhabib (García Rendón, 2016), "what is valued concerns what is individually and collectively considered valuable, worthy of our effort and essential to human happiness" (p 272). Likewise, Martínez (García Rendón, 2016) maintains the following:

> The value is the socially positive significance of the objects and phenomena of reality, while the valuation is not more than the subjective reflection in the person's consciousness of the significance that objects and phenomena of reality possess for her (p. 272).

Each human being assigns different valuations to the environment in which he / she is, since each person grows and is guided in different ways, all according to the society in which he / she is immersed. It is at this moment that the participation of families (as the first social circle) is unavoidable so that these evaluations are in favor of healthy affective relationships and caring for the environment.

The human being, taking into account the values that guide him and the valuations that he possesses, begins to build his ethos, which will later characterize him as an ethical human being. In this regard, García Rendón and Panchi (2015) mention:

> The human being is ethical when he renounces being over others in order to be and be in solidarity with others, when he is able to understand the demands of ecological balance and limits himself to the anthropocentric desires that he has. (p. 160).

The satisfaction of our needs and the satisfaction of our wishes are linked to the valuations that each human being possesses: if our valuations are based on sustainable principles of life, there will be great possibilities to leave a healthy world for future generations and guarantee a good quality of life. lifetime.

Towards the construction of a sustainable ethos

According to Leff (2011), "thinking about the future is deconstructing the economy, which ignores nature and discounted the future" (p.95). And to achieve this it is necessary to raise awareness of each of the societies, so that they know that excessive growth leads nowhere, that it is up to each human being to take the necessary measures to protect nature and leave a productive future to the new generations. Since human beings "from the moment we get up until we go to bed, our life is based on the choice between small daily actions that can make the difference between a sustainable behavior and a totally unsupportive one" (Sastre, 2011, p.68).

Also, Novo proposes to develop an awareness about the ways of life with which the planet is shared. This development model must cover all possible angles: "the ethical aspects, the forms of communication, the aptitudes and attitudes linked to the affections, the feelings, which give meaning to individual and collective behaviors" (Novo, 1996, p. 96).

In this regard, Leff (2011) comments the following:

> It is about constructing the meanings that open the ways for the foundation of new ways of thinking, feeling and being; that beyond serving the establishment of new environmental standards -of an ethics and a moral that establishes what is allowed and what is prohibited before nature-, forge the referents and objectives of new human rights towards the environment and towards a sustainable and meaningful

life . It is about reviving the word to reinvent identities and revive social movements by the reappropriation of nature and its cultures (p. 96).

An education that allows personal growth is needed and consider creating changes in the ways of doing things.

It is necessary a global consensus directed to the search of that new model of development that provokes deep changes in the current styles of life, of ways of thinking, of ethical and moral values ... and all this is only possible if it arises from processes educational activities that promote awareness, awareness, participation and the development of more responsible attitudes and capacities in all areas of society (Dueñas, 2011, p. 16).

Consequently, the actions of each human being will be guided by respect and tolerance, because it is useless to prepare future generations and instill great knowledge if in the future they will not have a healthy planet in which to live.

A characteristic of sustainable development "is the fact that it starts from the educational base" (Novo, 1996, p.77), since society can not be expected to take care of the environment if it has not been educated for that purpose, if the individuals do not possess the necessary knowledge to take care of it; At the same time, it is important to instill values and work on the valuations that give priority to the means that serve as sustenance.

In Mexico, according to Conde, González y Mendieta (2006):

From the beginning, the National Education and Environment programs established the urgent need to incorporate the environmental perspective in higher education in order to generate the internal changes required to encourage higher education institutions (HEIs) to offer pertinent answers to the environmental problems, so that they are active participants in the construction of desirable development scenarios (p. 18).

And following Dueñas (2011), education for sustainable development "should be considered as a pedagogical tool for transmitting new ethical and attitudinal models towards citizens so that they feel part of the change, so that they themselves become the change "(p.15).

Therefore, emphasis is placed on the construction of values oriented towards sustainable development, to create movements in order that this society becomes a responsible society.

It is a priority to develop values for coexistence that allow developing the capacities to pose, identify and design the possible solution of problems; that aspire to achieve a development where generating knowledge translates into rational and sustainable forms of production and consumption: in creative work, in wide channels of access to public goods, in better conditions of social expression, respect for cultural diversity and care for people (Peza, 2011, p. 64).

Human beings have assigned and assigned values to their environment and the people around them, because, as mentioned above, the human being is part of a whole, is part of a space all affects everyone.

The fact of taking into account the foresight schemes or frames of reference (Eisner 1897) of the subjects that they learn contributes notably not only to the acquisition of new knowledge or skills, but also, in many cases, to achieving a true reorganization of their plot cognitive and affective value of the environment that is their own and their active role in it (Novo, 2005, p. 157).

When a person acts and lives in a responsible manner, it makes the task of working together with others easier, while at the same time instilling and spreading the values for which said person is governed.

It is about each group that teaches and each group that learns have the opportunity to review their values, submit them to criticism, and elucidate new values that allow progress in the direction of social equity and ecological balance (Novo, 1996, p. 96).

In this way, new knowledge is created that fosters the care of the environment, a chain of aid is formed, allowing each person to "verify the relevance of their knowledge and skills in real contexts and adhere to values expressed through an effective commitment with the environment "(Novo, 2005, p 153).

Coupled with the above, almost at the center of the equation, is the importance of working first on a personal level so that, later, it can be collaborated at a group level. Thus, groups are created in which "it is possible to work in processes that involve the collective construction of knowledge, the joint debate of values, the group assumption of responsibility"

(Novo, 2005, p.153). All of which becomes a toolbox for a better world, a world that is constantly changing.

In summary, the importance of sustainability is stressed and in the sequence that dictates that from the micro it will be possible to achieve change in the macro, that is, having a sustainable way of life causes other people to have the possibility of meet your needs. For all this, it is important to know the university students; and start doing it for the values learned and the values that govern their actions in relation to sustainable development.

Method

The present investigation was qualitative. It is based on an interpretative perspective. To simplify the organization, analysis and interpretation of data, the processing of information was done through the scientific software ATLAS.ti. 8

Two categories were considered: 1) ethos construction and 2) sustainable education. Within this analysis phase, annotations were made for the citations and codes in order to link the theory with the responses of the participants.

The information obtained from the interviews was codified and classified according to the categories exposed in the theoretical framework and to the two categories mentioned above. Subsequently, the information was compared in the qualitative analysis software and, finally, the information of the interviews was analyzed in conjunction with the theoretical information: constant comparisons were made between the theoretical information and the information obtained from the interviews to detect points of view in common among the participants and the theory.

Sample

A total of 47 semi-structured interviews were carried out with students from the Faculties of Medicine, Nursing, Engineering, Architecture and Behavioral Sciences.

Results

Below are the questions and categories that emerged based on the responses of the interviewees and then the corresponding interview number.

Tabla 1. Resultados de la categoría de construcción del *ethos* sostenible

Pregunta	Categorías emergentes de acuerdo a las respuestas de los entrevistados	Núm. de entrevista
¿Qué acciones realizaba su familia respecto al cuidado del ambiente?	✓ Separar/Reciclar/Recolectar la basura	E. 3, 4, 5, 6, 7, 8, 11, 12, 14, 39, 17, 20, 27, 28, 29, 40, 22, 23, 24, 25, 26, 30, 32, 34, 35, 36, 38, 41, 42, 43
	✓ Ahorrar/Reciclar/Cuidar el agua	E. 2, 5, 7, 9, 14, 32, 35, 38, 41, 42, 47
	✓ Ahorrar luz	E. 5, 30, 31, 43
	✓ Hacer compostas	E. 10, 13
	✓ Otras/ ninguna	E. 1, 16, 19, 44, 45, 46, 18, 21, 33, 37
De esas acciones, ¿cuáles realiza usted?	✓ Separar/Reciclar/Recolectar basura	E. 1, 4, 8, 9, 23, 27, 29, 36, 40, 3, 5, 6, 10, 11, 12, 13, 14, 15, 39, 16, 18, 19, 20, 21, 22, 24, 25, 26, 28, 30, 31, 32, 33, 34, 37, 38, 42, 44, 45, 46
	✓ Recolección de PET	E. 13, 14, 15, 33, 35, 41
	✓ Ahorrar/Reciclar/Cuidar el agua	E. 2, 7, 14, 17, 30, 35, 37, 38, 42, 43, 47
	✓ Ahorrar luz	E. 17, 30, 31, 43
	✓ Hacer compostas	E. 10, 11
¿Qué acciones realiza respecto al cuidado	✓ Actúo de forma solidaria/Respetuosa	E. 1, 8, 10, 12, 39, 18, 21, 22, 23, 24, 25, 27, 32, 33, 34, 35,

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de otras personas?		37, 38, 42, 43
	✓ Mantener la limpieza de entorno	E. 4, 11, 13, 15, 16, 29, 47
	✓ Hablar con la gente sobre no tirar basura/Fomentar la cultura del cuidado del ambiente	E. 2, 3, 14, 15
	✓ Ninguna	E. 5, 6, 7, 9, 19, 20, 26, 28, 30, 31, 36, 40, 41, 44, 45, 46
¿A quiénes considera como responsables para el cuidado del ambiente?	✓ A todos	E. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47
	✓ Al gobierno	E. 17

Fuente: Elaboración propia

Tabla 2. Resultados de la categoría de educación sostenible

Pregunta	Categorías emergentes de acuerdo a las respuestas de los entrevistados	Núm. de entrevista
¿Qué es para usted la sostenibilidad?	✓ No sabe	E. 2, 3, 4, 6, 7, 12, 18, 20, 21, 22, 27, 30, 32, 35, 36, 38, 42, 44, 45, 46, 24
	✓ Cuidar	E. 8, 10, 13
	✓ Administrar recursos	E. 9, 17, 23, 28, 31, 33, 34, 37
	✓ Reciclar	E. 11, 14
	✓ Equilibrio/estabilidad	E. 16, 41
	✓ Otras	E. 1, 5, 15, 39, 19, 25, 26,

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			29, 40, 43, 47
¿Cómo piensa usted que sería un modo de vida sostenible?	✓ No sabe		E. 2, 5, 7, 44, 45, 46, 4, 12, 18
	✓ Usar energías renovables		E. 3, 9, 10, 15, 22, 28, 30, 31, 23
	✓ Reciclar/Reutilizar		E. 11, 13, 14, 19, 34
	✓ Disminuir el consumismo		E. 16, 21, 26, 37, 40
	✓ Administrando recursos		E. 28, 31, 33, 37
	✓ Cuidar		E. 36, 41, 42
	✓ Otras		E. 1, 6, 39, 17, 20, 24, 25, 27, 29, 32, 35, 38, 43, 47
¿Qué tan importante es para usted cuidar del ambiente para el futuro de las próximas generaciones?	Muy importante/ demasiado importante/ de vital importancia	✓ Aumenta la contaminación	E. 1, 41
		✓ Preservar la naturaleza para las próximas generaciones	E. 2, 3, 6, 8, 9, 10, 13, 16, 17, 19, 21, 23, 26, 29, 31, 33, 35, 36, 37, 38, 47, 43, 45, 32, 39, 28, 15, 22, 20, 42, 12, 11
		✓ Para tener una mejor calidad de vida	E. 14, 34, 47
		✓ Aumentan los problemas de salud	E. 30, 39, 46
		✓ Otras respuestas	E. 7, 18, 25, 27, 40, 4, 5, 24
	Poco importante	✓ Poco importante	E. 44
¿Qué acciones	✓ Brigadas/Campañas		E. 1, 3, 4, 5, 6, 7, 8, 10, 11,

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considera que debería de realizar la universidad respecto al cuidado del ambiente?		17, 20, 31, 40, 45
	✓ Ahorrar energía eléctrica	E. 9, 8, 25, 47
	✓ Aumentar la cantidad de botes de basura/Ceniceros	E. 12, 13, 14, 18, 26, 30, 33, 34, 35, 37, 42, 46
	✓ Ahorrar agua	E. 15, 24, 47
	✓ Difusión de la información	E. 2, 19, 23, 24, 28, 29, 32, 43
	✓ Inclusión de materias en la curricula para el cuidado del ambiente	E. 39, 33
	✓ Penalizar/Incentivar	E. 16, 37
	✓ Darle mantenimiento a la universidad	E. 21, 22, 27, 36, 38, 41, 44
¿Qué hace usted con la basura (cartón, papel, desperdicios de comida, envases, etc.)?	✓ Reciclar/Reutilizar/Separar/Clasificar	E. 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 39, 18, 18, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 40, 41, 42, 43, 44, 45, 46, 47
	✓ Desperdicios para abono/Compostas	E. 1, 2, 3, 16, 17, 20, 21, 26, 29
¿Realiza algún tipo de actividad para el cuidado del agua y la energía?	✓ Ahorrar/Reciclar el agua	E. 1, 3, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 39, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 28, 29, 30, 31, 32, 34, 42, 45, 47
	✓ Apagar la luz que no se usa	E. 2, 3, 11, 39, 17, 18, 19, 20, 21, 23, 24, 26, 28, 32, 37, 38, 42, 43, 45, 46, 47
	✓ Utilización de focos ahorradores	E. 30, 31, 33

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	✓ Desconectar aparatos eléctricos	E. 39, 26, 28, 29, 38, 41, 46
	✓ Ninguna	E. 4. 6, 22, 35, 36, 40, 44
¿Qué aspectos toma en cuenta cuando se trata de su alimentación?	✓ La economía	E. 5, 7, 6, 14, 15
	✓ Evitar alimentos con envolturas	E. 12
	✓ Comer a la hora indicada	E. 39, 33
	✓ Los nutrientes	E. 15, 18, 27, 35, 36, 40, 42, 47
	✓ Las proporciones y el balance	E. 30, 31, 32, 33, 43, 46
	✓ Otras/Ninguna	E. 1, 2, 3, 4, 9, 10, 22, 28, 34, 41, 8, 11, 13, 16, 17, 19, 20, 21, 23, 24, 25, 26, 29, 37, 38, 44, 45

Fuente: Elaboración propia

Discussion

The objective of this project was to identify and analyze the perceptions and actions related to the sustainable or unsustainable way of life of students of the UAEMéx, Toluca Campus, taking into consideration two categories: 1) construction of sustainable ethos and 2) sustainable education .

Returning to the definition of González (1996), the ethos refers to the following:

> *Ethos as a human "place" of existential "security". Although the significant thing is that it is a familiar, habitual, familiar place. Hence, ethos also means custom. It refers to a habitual way of behavior. It is a habitual, continuous way of behaving, of being in time; form of stability and temporary persistence* (p. 10).

The data obtained (Table 1) agree with this definition in the sense that the actions mentioned by the interviewees are those traditionally performed by their families beforehand. From the interviews, they highlight the actions of separating, recycling and collecting garbage as a traditional practice and carried out by the families of the interviewees. And these actions are

the same as those currently carried out, together with the collection of polyethylene terephthalate (PET), the saving and reuse of water and the saving of electricity.

In order to reach the goal of sustainability, it is essential to bear in mind that each human being is part of a whole, which maintains relations of interdependence. Therefore, the interviewees were asked about whether they perform any type of action regarding the care of other people. No one mentioned any action as such; they mentioned that they have a respectful and solidary behavior towards others. And in that same area, something that is particularly striking is that there were few interviewees who responded that by maintaining the cleanliness of their surroundings or by talking with acquaintances to promote care for the environment they are contributing to the care of others.

In addition to the above, we can prove with the information obtained that the interviewees are aware that the care of the environment is not the responsibility of a single person or entity or organization; rather they know that each one of those who live on the planet are responsible in some way for the wear and tear of it, that everyone has that responsibility to take care of it, that in the end they are all a team to preserve what keeps them alive.

On the other hand, the category of sustainability for the United Nations Environment Program (UNEP) (Organization of the United Nations [UN], 2015) points to the following:

> Sustainable development, from an anthropocentric approach, refers to the need to use resources in the present so that the planet can meet the needs of future generations. From a biocentric point of view it means that the balance of the systems that support life is respected; the carrying capacity of ecosystems; the absorption thresholds of the sinks, etc. (p. 8).

In that sense, it is quite striking that the answers obtained (Table 2) by the interviewees when asking them about the definition of sustainability do not match the answers they received when asked how they think it would be a sustainable way of life. So it can be concluded that students do not have knowledge of the concept as such, but they do know what kind of actions they can take to achieve sustainability.

In the definition of the concept of sustainability, we talk about the satisfaction of the needs of the human being, but also about the satisfaction of the needs of future generations, that is why one of the questions is directed towards this direction. And based on the responses of the

interviewees, it is legitimate to say that university students are aware that the planet can satisfy their needs, as well as that it is necessary to preserve it for the satisfaction of the needs of future generations. In sum, the interviewees agree that it is very important to take care of the environment, since they consider that taking care of it will improve their quality of life, reduce pollution and environmental problems.

Regarding the questions about the actions carried out by interviewees regarding garbage, it can be seen that a large part of them use actions in favor of environmental care: they recycle, separate, reuse and classify garbage on a daily basis. They also mentioned that these actions are difficult to perform when they are inside the university campus, since there are no garbage cans or insufficient to carry out these actions.

Regarding the activities for the care of water and energy, the most common actions are those of saving and reusing water, as well as turning off unattended lights and disconnecting electrical appliances that are not in operation. These actions are the same as those that are being carried out within the university campus, turning off the lights of the rooms that are not in use, or reporting if there is any type of waste of water.

Finally, with regard to the aspects taken into account by university students when it comes to their diet, it stands out that almost half of the interviewees do not take into account any, since the economic situation in which they find it difficult to acquire balanced and nutritious foods; they usually eat what costs less or what keeps them satisfied for longer, leaving aside the importance of the hours allocated for each food of the day or whether the food they eat provides nutrients or not.

Conclusions

It can be identified that the human being has contributed to the environmental crisis that is currently experienced through the indiscriminate use of natural resources and the lack of care for the environment. Development models based on the exploitation of resources for human well-being have led to endless consequences that put life itself at risk on the planet.

It is necessary to review the needs of the human being and their priority to satisfy them, since these, in many cases, encourage the abuse of resources and other living beings. It must be taken into account that each action carried out generates a consequence; consider that, as human

beings immersed in situations of interdependence, what happens in a certain place on the planet affects another, and that the best for all is that these consequences affect the environment as little as possible, which has given everything to be able to live. In short, to promote sustainable development.

The above emphasizes the importance of the participation of each human being; in the actions that can mark the change of a company, starting with the analysis of the values and valuations that guide our actions. This sustainable development will allow to solve current needs without compromising those of future generations, as well as preserve natural resources. We can say that it is necessary to have two important values, at least: 1) responsibility, which allows us to raise awareness of current problems and respond to our actions and 2) solidarity, which reflects the commitment to the present and the future of communities in sustainable development.

Universities, on the other hand, have a very important role in society. There, individuals are trained who, both during their training and after finishing their studies, will be able to influence their family, university and social environment.

For all the above, it was considered important to carry out the research at the UAEMéx, Campus Toluca; know what perceptions and actions students have in relation to sustainable development. Based on the answers, four aspects can be highlighted. The first, the students recognize that the environmental crisis is the cause of human beings, therefore, the recovery of it and its care are the responsibility of those who have caused it. Second, effectively, the university students perform sustainable actions, which come from habits and customs acquired in their environment, mainly from their family. Third, taking into account that most of the time the students spend it in the university, some of the sustainable actions are difficult to carry out, since this does not propitiate the adequate environment to carry out said actions.

In the last aspect, based on the literature consulted and the answers of the interviewees, regarding the actions that they consider that the university should carry out for a greater care of the environment, some emergent actions were determined: a greater diffusion of the information regarding the plans and actions on environmental care carried out by the university, since most of the interviewees do not know if there is any kind of activity related to the care of the environment; could contribute to the improvement to increase the amount of garbage cans, since

there are students with recycling habits, but, they argue, it is difficult to perform such actions when there is an insufficient amount of garbage containers, as well as the placement of ashtrays, that cigarette butts can be observed daily at the university entrances; It is important to carry out some type of activity related to the care of the environment that includes the participation of the university community, of all the students of all semesters of the degrees, in order to be aware of the impact of their daily actions and know that these acts are the path towards sustainability and, therefore, know what sustainable development consists of.

Finally, it is hoped that the study can contribute to future research placing emphasis not only on the perceptions of social actors regarding the issue of sustainability, but also on the actions they carry out. Thus, values and valuations will be reflected in the results of these and in the proposals.

Acknowledgment

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Rol de Contribución	Definición (solo poner nombre del autor)	Grado de contribución
Conceptualización	Ideas; Formulación o evolución de objetivos y metas generales de investigación.	Jenny y Cristina: Igual
Metodología	Desarrollo o diseño de metodología; Creación de modelos.	Cristina: Principal Jenny: apoya
Software	Programación, desarrollo de software; Diseño de programas informáticos; Implementación del código informático y algoritmos de soporte; Pruebas de componentes de código existentes.	No aplica
Validación	Verificación, ya sea como parte de la actividad o por separado, de la replicación / reproducibilidad total de los resultados / experimentos y otros productos de la investigación.	Jenny y Cristina: Igual
Análisis Formal	Aplicación de técnicas estadísticas, matemáticas, computacionales y otras técnicas formales para analizar y sintetizar los datos del estudio.	Jenny: Principal
Investigación	Llevar a cabo un proceso de estudio e investigación, específicamente realizando los experimentos, o la recolección de datos / evidencia.	Jenny: Principal
Recursos	Suministro de materiales de estudio, reactivos, materiales, pacientes, muestras de laboratorio, animales, instrumentación, recursos informáticos u otras herramientas de análisis.	Jenny y Cristina: Igual
Curación de datos	Actividades de gestión (producir metadatos), depurar información y mantener datos de investigación (incluyendo código de software, donde sea necesario para interpretar los datos en sí) para uso inicial y posterior reutilización.	Jenny y Cristina: Igual
Escritura - Preparación del borrador original	Creación y / o presentación de la obra publicada, escribiendo específicamente el borrador inicial.	Cristina: principal
Escritura - Revisión y edición	Preparación, creación y / o presentación del trabajo publicado por parte del grupo de investigación original, específicamente revisión crítica, comentario o revisión, incluidas etapas previas o posteriores a la publicación.	Cristina: Principal
Visualización	Preparación, creación y / o presentación del trabajo publicado, específicamente visualización / presentación de datos.	Cristina: Principal

		Jenny: Apoya
Supervisión	Responsabilidad de supervisión y liderazgo en la planificación y ejecución de actividades de investigación.	Cristina: Principal
Administración de Proyectos	Responsable de la gestión y coordinación de la planificación y ejecución de las actividades de investigación.	Cristina: Principal
Adquisición de fondos	Adquisición del apoyo financiero para el proyecto que conduce a esta publicación.	Proyecto sin financiamiento institucional. Cristina: Principal