



The green university and its importance beyond the times of pandemic Covid-19

La universidad verde y su importancia más allá de los tiempos de pandemia Covid-19

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Abstract

The environmental crisis facing the world today has been added to the current health crisis by COVID-19, constituting one of the main concerns of several international organizations. The "green university" initiative is inserted in this process, as it is the key entity in the development of the educational process, but with a vision of generating greater personal and collective responsibility regarding the proper use of resources, the implementation of good practices and the promotion of environmental awareness that can be replicated by students once they are trained as professionals and are inserted in the different areas of society, which is why it acquires a high prominence.

Keyword: Environment, pandemic, sustainability, green university.

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Resumen

La crisis ambiental que hoy en día enfrenta el mundo se ha sumado a la actual crisis sanitaria por COVID-19, constituyendo unas de las preocupaciones principales de varios organismos internacionales. La iniciativa de "universidad verde" se inserta en este proceso, por ser esta la entidad clave en el desarrollo del proceso educativo, pero con una visión de generar mayor responsabilidad personal y colectiva en cuanto al uso adecuado de los recursos, la implementación de buenas prácticas y el fomento de la conciencia medioambiental que puedan replicar los estudiantes una vez que se formen como profesionales y se inserten en los diferentes ámbitos de la sociedad, por lo cual esta adquiere un alto protagonismo.

Palabras clave: Medio ambiente, pandemia, sostenibilidad, universidad verde.

Introduction

The term "green university" refers to the environmental sustainability carried out by an educational entity of higher education, that is, where the sustainable approach that tries to satisfy current needs without affecting future generations and the satisfaction of their own needs is evident and prevails, orienting its activities and fundamental strategies to practices to conserve the environment, the development of educational programs and projects, and the study of sustainability (Lopera, Lopera, & Duque, 2019)..

The pandemic experienced, even today, has had a very negative impact on many aspects of life and society. It has implied a worldwide crisis in terms of health, but it has also had a much broader perspective, also implying a humanitarian crisis that today requires large-scale coordinated actions in all countries in order to respond to major social, economic and environmental challenges. (López, Chávez, & Vélez, 2020)..

It has been stated several times that the consequences of the rapid decrease in economic activities have been positive in the sense that the level of carbon emissions and pollution has been reduced in the short term. However, in the long term, the sustainability of commitments and agreements established by different governments, civil society and institutions is mandatory. Thus, the social responsibility that this current situation merits leads to reflect on the ways of acting and the options to sociological problems from the possibilities available today, making use of the tools provided by the virtual world given the circumstances of social distance. (López, Chávez, & Vélez, 2020).. In October 1990, a total of twenty-two universities around the world signed the Talloires Declaration, a document in which they made a commitment to be at the forefront of the processes of generation, promotion and maintenance of sustainability in the university context. As a result of this declaration, higher education institutions, in recent decades,

have increased their dedication and support in addressing the challenges related to sustainability, thus beginning to drive change, as a result of creating a social culture in this regard and determining themselves as a model for sustainable development. In this way, sustainability began to permeate the core functions of higher education organizations.

The situation indicated, has given the guideline for many universities in the challenge towards sustainability, beginning processes of organizational and structural modifications oriented to a greener university, all of which allow a preparation of leaders and professionals who, from their work and profile guarantee sustainability in future times and contribute to the development process of sustainable cities. (Lopera, Lopera, & Duque, 2019).. The optimization of social, economic and environmental resources will generate the basis for the achievement of this great challenge.

In recent decades, both the issue of sustainability and research in the field of environmental education have been pointing the way and the need to improve not only the link of human beings with the environment, but also the knowledge about it and the change in attitudes towards its conservation. Unfortunately, this is not always positive, nor have the best results been obtained. In fact, there seems to be a certain causal relationship between attitudes and knowledge in this regard. (Zarta, 2018).

This article attempts to provide an overview of the importance of the "green university", especially in current times when the effects of the COVID-19 pandemic have been relevant. Incorporating environmental and sustainable issues in the framework of higher education as a core competency in the training of future professionals, and making them aware of the environment, promoting commitment to cultural, social and economic change through attitudes, values and skills are essential tasks.

In this regard, the university community must achieve sufficient knowledge that favors the proposal of solutions to environmental problems and the improvement of the quality of life based on conceptual, methodological, bioethical, pedagogical, etc. principles. (Lopera, Lopera, & Duque, 2019)..

Fostering environmental commitment in university and institutional centers turns education into an environment oriented to learning about the sustainability of vital aspects for the development and growth of better academic programs. However, even the management of educational institutions in this sense brings great challenges, even more so in difficult times and under circumstances such as those related to the current pandemic. (Salas, 2021).

Materials and methods

This paper offers an overview and global reflection on the importance of the so-called green university in the context of the pandemic caused by COVID-19. For this purpose, a qualitative approach was adopted, providing this general perspective on the subject through the search and analysis of available and updated information on the subject in

quality sources and publications, which made it possible to obtain a characterization of the main aspects related to the subject.

The theoretical methods used are the historical-logical, by means of which trends on the subject can be determined; analysis and synthesis, which favors the development of the research process; abstraction-concretion, used to concretize conceptions and theoretical aspects; and documentary analysis, by means of bibliographic exploration of quality contents.

Results

The background of the green university concept is based on some important facts. From their foundation to the present day, universities have evolved from being teaching communities to complex institutions with dissimilar structures where diverse groups and individuals with different cultures, ways of thinking, knowledge and ideas coexist. Over the years, these institutions have evolved and responded to social needs. For example, they have begun to work in networks, as well as to understand the need to make essential changes in their management, planning and organization, oriented towards sustainability and environmental preservation. (Lopera, Lopera, & Duque, 2019).. These fundamental changes involve administrative and policy issues in which the design of educational strategies is indispensable.

It also involves aspects such as the mission of the institution, which should be reoriented to the commitment to a sustainable future, based on the commitment to research, environmental education, the conformation and implementation of projects and programs to enhance professional competencies related to sustainable development, considering that it will train responsible professionals in this area and who will then possibly be in charge of other projects and institutions where they should also promote this subject matter (Arredondo, Saldivar, & Limón, 2018). The educational institutions themselves should have an academic unit that is in charge of projects and programs on clean energy, environmental responsibility, reuse and recycling, preservation of resources, which will lead to the proposal of changes in the management, participation and management of green universities. (Lopera, Lopera, & Duque, 2019)..

It is of vital importance that these commitments are established in all higher education institutions in three fundamental aspects oriented to sustainability: green buildings, as they favor the reduction of energy consumption and the improvement of community welfare; the implementation of the ISO 14001 Standard, as well as an environmental management system, which are a group of useful tools for compliance with environmental regulations aimed at increasing efficiency in each process and reducing the impact on the environment. (Martínez, 2012).

It is necessary to emphasize that, despite the importance of higher education entities to commit themselves in this sense and outline guidelines and strategies, they cannot lose sight of the main process of this type of institutions: education. Therefore, this involves the reaffirmation of the importance of education for sustainability, as well as

the need to take into account economic, social and political factors of sustainable development. (Lopera, Lopera, & Duque, 2019)..

It is also key to understand that the training of all professionals must contain methodologies, contents and effective practices in the formation of competences related to sustainability, oriented to the profiles of future professionals. But to create these competencies, three important areas must be taken into account: the one related to knowledge; the methodological one, linked to doing and the attitudinal one, related to knowing how to be and to value, for which the development of values and attitudes on sustainability are essential. (Zabala & García).

It should also be reflected that in order to comply with these guidelines and to be able to define a university institution as "green", it is necessary to provide evidence of how this institution has development programs that do not harm the environment, where the entire university community is involved.

If universities are institutions that prepare and train generations to constitute the work force of a country, countries need "green" universities for their social and economic development, which at the same time are linked to the processes of innovation, research and problem solving, based on knowledge of reality, current circumstances and the city itself.

For this reason, the academies play a very important role in the preparation of responsible citizens and leaders with full social awareness, in charge of projecting and sustaining sustainable cities in some way, enriching the results and projects. (Salas, 2021). The pandemic caused by the coronavirus has been, above all, a misfortune for humanity. The number of deaths has now exceeded one million people infected and more than sixty thousand dead. The United Nations (UN) Secretary General has affirmed the need to consider the fight against COVID-19 as an immediate priority in the world. However, this should not detract attention from the climate crisis, the impacts of which are still considerable. (ECLAC-UNESCO, 2020).

In the current situation where billions of people are adapting to life under the prevailing restrictions to cope with COVID-19, it is worth asking whether these circumstances and experiences can help to visualize what a more sustainable world should look like, and how to cope with climate change as well.

One of the actions that have been part of the global response to the coronavirus is the intensive reduction of emissions and air pollution, which contributes to the reduction of deaths and complications linked to air pollution. Pollution, for example, has for several years accounted for millions of deaths per year worldwide and is a serious environmental problem today. This situation is just one example of the seriousness of the issue, which, added to the current pandemic crisis, makes it even more necessary to take measures, design strategies, formulate programs and raise awareness of these issues.

According to Garcia et. al. (2020) the current pandemic has generated much debate about how air pollution, for example, has affected the ability of some countries to control the spread of COVID-19 and reduce the number of critical cases. Above all, greater efforts are now being called for, not only to optimize the public health system that has come under enormous pressure, but also to clean up the air that negatively harms human health.

Recently, studies from Harvard University have shown that those patients who have suffered COVID-19 and whose domicile is located in areas of the United States with higher levels of air pollution prior to the pandemic, have a higher probability of death from the infection compared to patients living in areas with much cleaner air. Likewise, other studies of the SARS epidemic in China have found that patients who also live in regions where the air is highly polluted are twice as likely to die from SARS as those who live in regions with better air quality. (Lopez M. , 2020).

This shows that reducing air pollution levels, for example, is very likely to help people cope much better with COVID-19 or future pandemics, which may become increasingly frequent due to the disintegration of natural habitats, climate change and intensive land use.

If in the last 50 years the preservation of the environment has become one of the most important issues in regional and global agendas, environmental education is key to achieve this goal, being one of the pillars that has the ability to redirect and modify the behavior of citizens in order to achieve a balance between man and nature. However, with the appearance of the COVID-19 pandemic and in view of the requirement and obligatory nature of social isolation in all regions, the goals set in this sense have had to be rethought and the strategies drawn up by governments and institutions, mainly educational ones, must include new guidelines to address this new affectation. (López M. , 2020).

The pandemic has shown the importance of global citizenship and the concept of shared humanity, as well as the role of academia in promoting both concepts. The pandemic has forced the international academic community to explore new ways of teaching and learning, including distance and online education.

While the Covid-19 pandemic has so far brought about radical changes in the economic, social and political areas, education is no exception, the principle of safeguarding public health made the shift from face-to-face to virtual higher education a reality (Román, 2020). It was not a change of modality, it was an "emergent adjustment" due to the health context, where it made use of Information and Communication Technologies (ICT) to face the situation; these measures were taken, but without losing the forms typical of face-to-face classes: synchronization of space-time, activities and feedback, rigid schedules and the same number of contents (Román, 2020).

The actions described above are articulated with an online system to meet all academic and administrative requirements through teleworking and digital platforms for the academic part (UNESCO IESALC, 2020). University management that also involves the adequacy of human, material and financial resources.

Congruent with all that, according to the analysis carried out within the institution, the Quevedo State Technical University (UTEQ) tuned to this new reality in terms of teaching and learning activities, has a wide range of academic elements that in times of pandemic changed its physical state to virtual and came to stay, among others, we can mention:

- Student portfolio: homework, evaluations, academic reports, and support inputs.
- Teaching portfolio: - resume and supporting documents, analytical plan, syllabus, lesson plan, teaching guide, teaching resources, evaluations, reports.
- Academic Management: Academic follow-up reports, self-evaluation reports, inputs for external evaluation, internal and external communications, agreements, minutes.

The actions taken by UTEQ lead to the optimization of large material, human, economic and environmental resources that can be quantified in statistical terms, without considering the administrative management with virtual electronic activity within the institution. Thus, a new era of learning is assumed. UTEQ has already learned the lesson about the importance of implementing sustainability initiatives; and at the moment, within its return to face-to-face teaching, the only thing that has changed in 75% are the virtual face-to-face classes, for physical face-to-face classes of teachers and students in the university classrooms.

What has been described is the reality in which all universities in Ecuador and the world are immersed in general terms, as well as a great part of the universal educational system. It is in this way that the University is inserted in this process, as it is the place where the educational process is developed, emphasizing the importance of knowing and complying with environmental regulations. It should be noted that the "Green University" initiative arises with the vision of generating greater collective and personal responsibility regarding the correct and efficient use of resources, as well as promoting the implementation of good environmental practices by the teaching and administrative staff and students of universities and other educational centers in each country. (Ordorika, 2020).

In addition, taking into account that education is a key component to generate a change of habits in citizens, the work between the Ministries of Environment should be permanent with the institutions that lead this process at the national level, in order to promote ideas and develop initiatives that strengthen the link and the work between the State and the academy for the proper use of resources. (Ordorika, 2020).

If one of the most important entities within society, such as universities, is not committed to the environment and to the design and implementation of initiatives to share information to raise awareness among students, teachers and the community in general on issues of environmental interest, it will not be possible to take advantage of the experience left by the pandemic, in terms of sustainability, thanks to the use of virtual resources, with the result that society itself, fundamentally, will be the most disadvantaged.

Conclusions

The year 2020 presented a new challenge for humanity. The global crisis caused by COVID-19 has reached all countries, but especially those of Latin America and the Caribbean have suffered in a context of low economic development, high vulnerability and inequality. This is a social fact that has convulsed social relations, values and institutions, so managing this crisis fundamentally involves understanding the interrelationship between various components and dimensions to generate proactive solutions.

For the achievement of this goal to be sustainable, the participation of all sectors is needed, among which the education sector is imperative. This pandemic has allowed reflection on the importance of science, of filling information gaps, of the fact that this virus lives hours outside the host and remains on various surfaces and environments, which can be routes of transmission.

Therefore, environmental education and awareness is essential, not only because of the relevance of climate change and the damage that man has caused to the environment for years, but also because the current crisis caused by the pandemic requires more and better investment in all environmental components to mitigate the effects that society may suffer. The term "green university" should encourage all institutions of higher education to make a commitment to include this issue in their strategic plans, to create and foster values in teachers and students, to formulate new environmental policies and to redesign environmental sustainability plans that will have an impact on reducing the risks and effects of the environmental crisis and the pandemic.

The Quevedo State Technical University is attuned to the importance of applying actions in favor of sustainability and has implemented actions that will be maintained post-pandemic in the use of virtual resources for the implementation of academic practices of university work.

References

- Arredondo, M., Saldivar, A., & Limón, F. (2018). Educational strategies to address the environmental. Experiences in basic education schools in Chiapas. *Revista Innovación educativa*, 18(76).
- ECLAC-UNESCO (2020). *Education in times of the COVID-19 pandemic*. Retrieved from https://repositorio.cepal.org/bitstream/handle/11362/45904/1/S2000510_es.pdf
- García, M., Cárdenas, J., & Barbeito, R. (2020). Debate presentation: Social impacts of COVID-19: a new challenge for sociology. *Spanish Journal of Sociology (RES)*. Retrieved from <https://dialnet.unirioja.es/download/articulo/7540823.pdf>
- Lopera, C., Lopera, M., & Duque, D. (2019). The green university: perceptions of the university community in the process of transformation towards sustainability. *Revista Virtual Universidad Católica del Norte*(57).
- López, A., Chávez, C., & Vélez, M. (2020). COVID-19: impacts on the environment and SDG compliance in Latin America. *Journal of the University of the Andes*(86).
- López, M. (2020). Pandemic essay. *Journal of Bioethics and the Law*(50). Retrieved from https://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1886-58872020000300008
- Martínez, R. (2012). Critical essay on environmental education. *Diálogos Educativos Electronic Journal*, 12(24).
- Ordorika, I. (2020). Pandemic and Higher Education. *Journal of Higher Education*, 49(194).

- Plaza, I. D., Banegas, C. M., & Castillo, Y. (2021). Green ventures a sustainability alternative for SMEs. *Revista Visionario Digital*, 5(2).
- Román, J. (2020). Higher education in times of pandemic: a view from within the formative process. *Revista rlee*. <https://www.redalyc.org/jatsRepo/270/27063237017/html/index.html>.
- Salas, H. (2021). Environmental education and its contribution to the care and protection of the ecosystem. *Fides et Ratio - Revista de Difusión cultural y científica de la Universidad La Salle en Bolivia*, 21(21).
- Zabala, I., & García, M. (n.d.). History of Environmental Education from its discussion and analysis in international congresses. *Revista de Investigación*, 32(63).
- Zarta, P. (2018). Sustainability or sustainability: a powerful concept for humanity. *Tabula Rasa Magazine*(28).
- UNESCO (2020). Actions of universities before covid-19. <https://www.iesalc.unesco.org/2020/05/05/acciones-de-las-universidades-ante-el-covid-19/>.