Sustainability Indicators in a Bachelor’s Educational Program in the Health Area

Rosa María Brito 1, José Luis Aparicio 1,*, Columba Rodríguez 1 and Juana Beltrán 2

1 Sciences for Regional Development Center, Autonomous University of Guerrero, Acapulco 39640, Guerrero, Mexico; rosabrito@uagro.mx (R.M.B.); columbaalviso@uagro.mx (C.R.)
2 Superior School of Nursing No. 1, Autonomous University of Guerrero, Chilpancingo 39000, Guerrero, Mexico; juanabeltran@uagro.mx
* Correspondence: joselopez@uagro.mx; Tel.: +52-744-207-7443

Abstract: Superior education institutions are interested in training human resources with a holistic and critical vision, which contribute to the attention of environmental problems from the health area. The objective was to analyze, with indicators and indexes, the achievement reached regarding the level of sustainability in the functions of directors, teachers, and students at the Superior School of Nursing No. 1 of the Autonomous University of Guerrero, Mexico. The methodology was quantitative; interviews were applied to three directors, and surveys to 18 teachers and 226 students. On environmental issues, the findings show that teachers have scarce knowledge, with 14%; directors vary significantly, registering 58%; meanwhile, students are located at 60%. In the social indicator, students had 66%, directors 64%, and teachers 31%; the economic indicator was the least valued with 41% for students, 40% for directors, and 15% for teachers. The sustainability index for teachers was 0.19%, in “collapse”; for directors and students, it was “unstable”, with 0.56% and 0.58%, respectively. It was concluded that teachers prioritize disciplinary content; students express greater concern, knowledge, and interest for the environment.

Keywords: sustainability indicators; nursing education; superior education; index

1. Introduction

As a result of the continuous social and economic changes that society is facing, environmental and sustainability challenges are becoming more and more urgent to address. Governments, through their educational institutions such as superior education, play an important role in training professionals to act as agents of change to face the climate phenomena and their impact on people’s health and well-being.

Superior education has the task and interest in educating and training society to contribute responsibly to the resolution of serious problems that the world is experiencing [1]. In agreement with this proposal, Rodriguez [2] considers that education has become a useful tool to face the modern problems, derived from anthropocentric activities and inadequate development planning. Müller-Christ et al. [3] consider that one of the main tasks of universities is to contribute to the dissemination of knowledge as an impetus to social change and sustainability, as established by Camponogara et al. [4]; these educational institutions are required to help reveal environmental problems and propose actions to address environmental imbalance. In this context, it is important to answer: What are the indicators to consider in the strengthening of sustainability levels in the substantive functions of Superior Education Institutions?

1.1. Sustainability in Superior Education

In the eighties of the last century, the promulgation of environmental, social, and economic policies for Superior Education Institutions (SEIs) began at the international level, given the responsibility conferred on the training of human resources to address
the problems derived from the search for sustainability, understood as an integrating axis where human needs are satisfied, and a higher quality of life is guaranteed, and where society participates in the developmental process and environmental conditions, taking advantage of resources within the limits of natural growth [5].

According to Richardson et al. [6], higher education has a task in developing skills and acquiring knowledge that contributes to sustainable development. Rodríguez [7] establishes that, for this purpose, superior education must link with society and mitigate social, economic, and environmental problems, raised in the 2030 Agenda for Sustainable Development (ASD); Beynaghi et al. [8] report that the advances in stainability for SEIs have been limited. On the other hand, Too and Bajracharya [9] establish that universities, as part of SEIs, must be at the forefront in research and innovation, assuming a leadership that encourages students to develop more sustainable practices. Vasallo and Arciniegas [10] consider that it is universities’ responsibility to monitor the training of future leaders who ensure the sustainability of the following generations. Lozano [11] goes further, suggesting that these educational institutions should be a learning model on the behavior and impact of their activities in the substantive functions of teaching and research for sustainable development. However, as proposed by Leal Filho et al. [12], to achieve this, it is necessary to implement evaluations and create policies that promote the reduction in the footprint of its activities. Lozano et al. [13] consider that some SEIs have already managed to include sustainability in their mission and vision.

Moreover, Jones et al. [14] state that the insertion should be carried out into the study plans and the curriculum, and must be accompanied by a pedagogical approach that allows the holistic training of graduates to be influenced. Various consulted sources showed us that several educational centers have tried to meet these requirements through various strategies, from models or methodologies to simple checklists.

Regarding the previous paragraph, for authors such as Posner and Stuart [15], Gómez et al. [16] and Lozano [17], sustainability is still a vague concept, remaining in debate and questioned for its correct implementation. In México, Garza and Medina [18] argue that incorporating sustainability into SEIs requires more radical changes, as it is not only about integrating environmental care, protecting natural resources, or including sustainability subjects within the curriculum in a mainstreaming way, but it is also about strengthening a holistic vision that influences the training of more analytical, critical, and proactive students, with the capacity to address problems derived from development.

1.2. Nursing as a Profession

Nursing has its foundations in the principles of holism—the link with society, communities, and the environment—as well as in protecting people from diseases and reducing environmental degradation, global warming, and violence [19]. It is one of the disciplines with higher possibilities in the training of better citizens.

Anaker et al. [20] and Anaker and Marie [21] mention that these professionals are agents of change, promoting health and environmental care. Their research highlights the nurses’ perceptions of society problems and health services. Authors such as Furukawa et al. [22]; Kangasniemi, Kallio, and Pietilä [23]; and Leffers and Mitchell [24] suggest that their training is a matter of vital importance for society.

In this regard, Anderko, Chalupka, and Gray [25] consider it essential that nurses assume leadership and collaborate in the creation of environmentally sustainable health institutions, in addition to promoting practices that contribute to the care of the environment. Parallel with this proposal, Medeiros et al. [26] take up the environmental theory of Florence Nightingale, who conceived the human being as an integral being of nature, whose defenses are influenced by a healthy environment; she also considered that disease is a process of restoring health, where the nurse plays an important role in harmonizing the environment with the human being.

In contrast, there also exists research that points out that professional nurses have not made actions that contribute to the preservation of resources and environmental care.
Doi and Moura [27] carried out a research project with nurses and nursing technicians, finding that, even though they comply with the separation of waste, most of them are unaware of the appropriate standards and techniques regarding costs, damage, or environmental impacts that it causes. Richardson et al. [28] indicate that, to address these deficiencies in nurse training, teachers are responsible for incorporating environmental topics that address climate change issues and resource scarcity in their learning units, as well as on their clinical practices. They conclude that there is little evidence about the contribution of their daily professional activities to sustainability.

1.3. Sustainability Indicators in the Universities

In order to obtain information on how the institutions incorporated sustainability into their multiple operations, in 1969, the International Council of Scientific Unions, throughout the Scientific Committee on environmental issues, initiated the first work on the design of indicators to measure progress towards global sustainability; the same committee prepared informative frameworks for their use in the scientific and academic field [29].

In 1989, the Organization for Economic Cooperation and Development announced initiatives to evaluate achievements in environmental indicators [29]. In 1992, 172 governments signed the Agenda 21; they established that it is necessary to develop indicators that contribute to the sustainability [30].

After these initial experiences, different tools have been proposed to evaluate the level of sustainability [31]. This is the case with SEIs; for Dewha [32], better indicators are needed for diagnosis, process evaluation, and decision-making, as this would facilitate both the analysis and application in aspects of institutional identity or substantive functions (education, research, extension, and linkage).

For this study, indicators are defined as instruments that measure three dimensions of sustainability: (1) The environmental dimension focuses on facilitating knowledge and learning for the correct extraction of natural resources, making sure their continuity for the future to come; (2) the social dimension involves raising awareness and participation in reducing poverty and inequality, as well as promotion and inclusion, through student support and services; and (3) the economic dimension refers to the efficient use of resources to benefit directors, teachers, and students [33]. In the meantime, we assume an index as an aggregated or weighted set of parameters or indicators. One way to represent the sustainability index is a biogram, a graph that, using five colors, determines the state of sustainability in the institution. The level ranges from optimal to collapse. In addition, it is important to measure the approximation of knowledge about the conservation and preservation of resources to improve their use [34].

At the international level, several studies have been carried out, such as that from the International University of Ecuador, during 2016–2018. A total of 17 indicators were designed in three areas: (a) university linkage in sustainability issues; (b) sustainable institutional management, and (c) environmental management systems. The study concluded with the proposal for a sustainable management model incorporating planning, implementation, and evaluation phases [29].

Research on the indicator design has also been carried out in Mexico, highlighting the one made by the Mexican Consortium of Superior Education Institutions for Sustainability. Its proposal was the construction of 26 indicators, aimed at integrating sustainability in all functions of Mexico’s SEIs. The indicators were designed under Agenda 21 and the conceptual framework of SD [35].

The background presented suggests that it is important for educational institutions to have tools that measure their degree of progress towards sustainability. Autonomous University of Guerrero (AUGro) has few records of work on this subject; therefore, it is presented as an alternative to produce relevant, purposeful, and documented information.

This research aimed to analyze, through indicators and indexes, the achievement reached at the level of sustainability in the roles of directors, teachers, and students at the Superior School of Nursing No. 1 of the AUGro.
2. Methods

2.1. Research Design

To solve the research problem on the progress of the AUGro in sustainability, a quantitative design was determined, with a descriptive and empirical study that inquired about the perceptions of the actors involved (teachers, principals and, students); the level of sustainability between these three groups was also compared. The scope was exploratory, because at the local level, it is a little-studied phenomenon.

According to the classification of research styles by Cohen, Manion, and Morrison [36], the survey was chosen to collect a large amount of data and reach generalizations, with a focus on the opinions of the participants, representatives of a wide population. It was developed during 2018 at the No. 1 Nursing School in Chilpancingo City, Guerrero. AUGro has 47 academic units of the high-school level, 72 degrees, and 31 postgraduate courses (27 master’s degrees and 4 doctorates). It has 89,024 enrolled students and a workforce of 3109 teachers [37].

2.2. Sample

The school has 1159 students enrolled in the morning and afternoon shifts. A random probabilistic sample was taken where the entire population had the same possibility to participate voluntarily; the sample was of 226 students (19.5% of the school’s total enrollment), distributed with 189 women and 37 men, with representation of the current semesters (second, fourth, sixth, and eighth). From a total of 37 teachers, 18 (48.6%) participated, as well as three directors (75%)—one principal and two vice-directors.

2.3. Instrument Design

As a base for the construction of instruments, the methodology for superior educational programs designed by Brito et al. [33] was used. Due to its characteristics, it was considered relevant to replicate it in a health program (nursing); 21 variables were recognized that integrated the sustainability indicators (environmental, social, and economic), oriented to the functions of three actors: directors, teachers, and students, as shown in Table 1.

The Brito [38] questionnaire—consisting of 18 guiding questions for directors, 25 questions for teachers, and 19 for students—was used; the questions were adapted in consideration that a school in the health area needs laboratories for practices, as well as the linkage with other basic educational institutions and communities (Table 1).

The items were also adapted, according to recent literature in the health area that was no older than ten years. Meleis et al. [19], Furukawa, et al. [22], and Anderko et al. [25] consider that nurses, as health promoters, should have a holistic training, incorporating the care of the human being and the protection of the environment. With regard to universities, some have addressed this issue in their study plans and subject programs [28,39], as it is important for the full training of nurses.

The instruments consisted of two sections: (1) general data and (2) perception of the actors about sustainability. Three types of questions were included, dichotomous, numerical, and level of satisfaction; the latter, using a Likert response scale (4—excellent, 3—very satisfied, 2—satisfied, 1—not very satisfied, and 0—not at all satisfied).

The application of the surveys was carried out through an online form, between 5 and 12 May 2021, with the authorization of the school management.
Table 1. Items for sustainability indicators.

| Indicator | Items                                                                 | Directors, Teachers, and Students |
|-----------|-----------------------------------------------------------------------|----------------------------------|
|           |                                                                       | D | T | S |
| Environmental | Level of classroom greening.                                              | ✓ | ✓ | ✓ |
|             | Courses, scientific publications, and projects on environmental education and/or sustainability. | ✓ | ✓ |  |
|             | Waste management plan.                                                 |       | ✓ | ✓ |
| Social     | Satisfaction level on furniture.                                         | ✓ |       | ✓ |
|             | Satisfaction level on audiovisual equipment and didactic resources.     | ✓ | ✓ | ✓ |
|             | Teacher and students’ stays.                                            | ✓ | ✓ | ✓ |
|             | Teacher satisfaction level on cubicle equipment.                        |       | ✓ | ✓ |
|             | Student satisfaction level on cubicles for research.                    |       | ✓ | ✓ |
|             | Satisfaction level on laboratory, library, and computer center.         |       | ✓ | ✓ |
|             | Projects with social impact.                                            | ✓ | ✓ | ✓ |
|             | Level of response on auditorium and multi-purpose room maintenance.    | ✓ | ✓ | ✓ |
| Economic   | Financial support for teaching materials.                               | ✓ | ✓ | ✓ |
|             | Economic stimulus that benefits teachers and students.                  | ✓ | ✓ | ✓ |
|             | Cost for mobility and stays.                                            | ✓ | ✓ | ✓ |
|             | Financial support to organize workshops in communities and institutions. | ✓ | ✓ | ✓ |

Source: Own elaboration, adapted from Brito et al. [40].

After obtaining the information, the instruments were reviewed; the database was encoded and built in Excel 2021. With the information obtained, the mean, variance, and standard deviation were determined, and to demonstrate that there is no significant difference between the means of the environmental and social indicators, the Fisher test was applied for two samples [41].

Sustainability indicators were built for each actor on the environmental, social, and economic dimensions.

Finally, a sustainability index was built for each actor, in which environmental, social, and economic indicators were weighted [40], as shown below:

- Environmental Indicator (Weight 50%).
- Social Indicator (Weight 30%).
- Economic Indicator (Weight 20%).

The indexes were represented in a biogram. Colors show the sustainability level of each index; when it is less than 0.20, it is shown in red and indicates collapse. Values from 0.21 to 0.40 are presented in orange, and expose a critical situation; values of 0.41 to 0.60, presented in yellow, indicate an unstable state; values from 0.61 to 0.80 are displayed in blue, and symbolize a stable state; finally, values from 0.81 to 1.00, presented in green, represent an optimal sustainability state [34].

2.4. Ethical Considerations

The first meeting was with the director of the Higher School of Nursing No. 1, who, in her capacity as an institutional representative, gave her written authorization to apply the surveys to the participants. The questionnaire informed the participants about the purpose of the project and that the results would be published; they were asked for their consent, evidenced in a form of the relationship between the researchers and the participants, and characterized by respect, right to collaborate or not, confidentiality in responses, and avoidance any personal or occupational risk. All participants are of legal age. The commitment was made to share the published results with teachers and directors.
3. Results

The results for test F are presented for the variance of two samples (teachers and students), the weighting of indicators, and the analysis of sustainability indicators.

3.1. Test F for Variations

Through the F test, the social and environmental indicators applied to the teachers were analyzed; an average of $X_S 0.31$ with $\delta^2 0.03$ and $X_E 0.14$ with $\delta^2 0.02$ were calculated. For the students, on the social and economic indicators, an average of $X_S 0.66$ with $\delta^2 0.02$ and $X_E 0.41$ with $\delta^2 0.07$, respectively, were obtained between the ranges from 4 to 0. There is no significant difference between indicators, so there is reliability in the method.

3.2. Sustainability Indicators

In this first section of results, indicators for each actor are described.

Directors

The social indicator has a value of 64%, evidencing the adequate infrastructure and equipment of the school for the development of its administrative activities, as well as the prevailing working climate in the community. The environmental indicator (58%) reflects that directors are informed about sustainability issues, considering that their training is disciplinary in the health area. The economic indicator resulted in 40%, which is relatively low and related to administrative inactivity that impacts the scarce obtaining of federal and state resources for the development of institutional projects (Figure 1).

Teachers

On the social indicator, the result was 31%, derived from a regular working climate between colleagues and directors, as well as physical infrastructure conditions to carry out school activities. The economic indicator was evaluated by teachers with 15%, showing the current institutional situation of the few supports that can be managed for the development of their projects such as academic bodies or research groups, as well as attendance at congresses or stays, and the publication of their research.

Figure 1. Sustainability indicators for directors, teachers, and students.
The teacher environmental indicator has a result of 14%; it shows “scarce knowledge” of environmental issues. It is attributed to the priority of disciplinary issues in the classroom and research in its educational program (Figure 1).

Students
On the indicators of sustainability of students (Figure 1), the social one stands out, with a higher percentage than the average (66%); they perceive good conditions in infrastructure—laboratories and recreation areas—to develop their academic and extracurricular activities, as well as a good climate in the university community.

Among the actors, with a percentage of 60%, the environmental indicator shows that students have higher knowledge, perception, and appropriation of environmental and SD issues, which contributes to their integral training. The economic indicator presents 41%; students express the lack of support in scholarships for academic exchanges and summer research programs, as well as for the socialization of environmental prevention and awareness issues in communities and other educational institutions.

3.3. Sustainability Indexes by Actor (Directors, Teachers, and Students)

Figure 2 presents the sustainability indexes by the actors. The student sustainability index is 0.58, locating them in an unstable state; this group was the best positioned. The directors’ sustainability index is 0.56; their condition is unstable too. The teachers’ index shows 0.19; according to the biogram, its level is collapse, reflecting the lack of appropriation of sustainability issues.

![Figure 2. The biogram is a graphical representation that shows the result of the sustainability indexes of directors, teachers, and students of the AUGro Superior School of Nursing No. 1. Adapted from: Sepúlveda et al. [34].](image)

These results show important areas of opportunity for the implementation of actions that lead to the strengthening of their performances so they can be reflected in future assessments on sustainability indicators in students, directors, and, mainly, teachers in nursing.

4. Discussion
The research analyzed, through indicators (environmental, social, and economic), the level of sustainability achieved in the substantive functions of directors, teachers, and students at the Superior School of Nursing No. 1.

Regarding directors, the results achieved showed the need to strengthen sustainability issues, especially environmental ones. These results show similarities to the ideas of...
Lozano [42] and Cortese [43], who believed that directors should be trained to propose actions that ensure sustainability. Batllori [44] adds that raising awareness among directors about environmental, social, and economic problems will make the environmental education process more effective in achieving sustainability.

As for the results from teachers in the nursing area, they recorded limited knowledge of environmental issues and a scarce perception on the social side, because in theoretical-practical learning, more priority is given to disciplinary issues; these findings are similar to those of Peres, Camponogara, Costa, Gomes, and Nietsche [45], who in their 2013 study with 17 postgraduate professors in nursing from the Superior Education Institutions in Rio Grande do Sul found bias in relation to sociocultural factors and values, and environmental education; they believe that it is necessary to encourage teachers to think from a critical perspective on the environmental and social problems that current society faces, and relate them to the subjects taught or in the research they conduct. Furthermore, Richardson et al. [28] add that nursing teachers have a responsibility to incorporate practical examples into their learning activities that address sustainable development in their context.

Schenk et al. [39], of Washington State University, developed the evaluation tool Nurses Environmental Awareness Tool (NEAT); they found that environmental degradation creates risks to human health, and nurse practices contribute to the same degradation. They argue that in the literature, it is an under-addressed topic and that the proposed tool is ready for testing that will contribute to the environmental sciences. In this way health professionals will be better prepared to develop plans and strategies to mitigate the damage.

In this sense, to contribute to the strengthening of the training of nurses, Torres-Alzate [46] describes a process for the development of a framework of competencies in global nursing health, integrated into seven categories, including sustainability. She argues that they are relevant in the study plans to guide the training of nurses. Meanwhile, Chen and Price [47] agree on the importance of climate change and sustainability in nursing training, which is why they consider that they should be included in the curricula.

The findings showed that, unlike teachers, students have greater knowledge, awareness, and concern for environmental issues. In the social dimension, internships were found in basic-level institutions and communities, developing disciplinary issues specific to the nursing area. This study bears similarities to that of Richardson, Clarke, Grose, and Warwick [48], who found that students in their first, second, and third year of undergraduate nursing are more aware of sustainability; additionally, students of third year could apply sustainability in their clinical practices and address environmental issues in a responsible manner. In a similar study made by the School of Nursing and Midwifery at the University of Plymouth, United Kingdom, Richardson et al. [28] identified that students have limited knowledge about natural resources but are more aware of waste management.

A similar educational intervention with nursing students was developed by Richardson et al. [49] in the United Kingdom; they identified changes in attitudes about sustainability and climate change.

Nigatu, Asamoah, and Kloos [50] of Haramaya University found that most students know that climate change damages health, as well as that electronic means of communication are (although insufficient) the main source of information.

Yang, Liao, Liu, Zhang, Zhong, and Huang [51] conducted a research project on knowledge and perception with students from Chinese universities; they found that 83% of students think climate change is “bad”, and 88% think it is affecting human health; 67% believe it is manageable; most participants recognized that diseases are derived from different problems related to climate change and air quality; they also showed students’ limited knowledge of the causes of the same phenomenon.

Chen and Price [47] found that Chinese nursing students place greater importance on sustainability than their English peers; they also highlight that their conceptual understanding focused on environmental aspects and clinical waste management.
Meanwhile, Von Haartman et al. [52] applied a survey at the beginning and end of two nursing and engineering courses (2010 and 2013) with students from a Swedish university; they found that there were changes in their awareness of sustainability at “extremely high” levels; on a scale of 1 to 5, they were located at 4.5.

In our study, according to the biogram, students demonstrated an unstable state; this is attributed to their access to information networks, under which they are immersed in the digital age and technologies; these influence the perception and awareness of the problems of the environment; they show more alignment with target 4.7 on the 2030 ASD. Similarly, directors are at an unstable level. The teachers were placed in a state of collapse, which means they are further away from sustainability. It is urgent to design strategies so that the whole school community achieves an optimal state, especially the teachers.

This study is similar to the research projects that were consulted, since it inquired about the knowledge and awareness of the environment and sustainability in actors in the health area (managers, teachers, and students) of the Higher School of Nursing No. 1, understanding the importance of the role that nursing as a profession plays in raising the awareness of the people it educates, as well as the reflection itself on the impact of its actions in the establishment of more responsible procedures, with more solid and pertinent institutions.

The results of this study mean a breakthrough in the importance of including emerging topics—such as sustainability—in superior education curricula and class programs, to strengthen students in the environmental care and the use of natural resources.

5. Conclusions

There is no doubt that, globally, serious environmental, social, and political problems demand faster and more effective responses from governments and society as a whole. Higher education institutions are responsible for the generation of knowledge, as well as in the comprehensive and holistic training of future professionals, able to cope with such a complicated environmental landscape, including the consequences derived from the coronavirus disease (COVID-19).

The performance recorded by principals, teachers, and students in addressing environmental issues and sustainability allows us to conclude on the need to develop training and update processes on sustainability and environmental subjects. Similarly, it is necessary to strive for the institutionalization of evaluations using indicators for their correct application and operation.

The generation of administrative policies, oriented to the attention of emerging social issues—within them the environment and COVID-19—is convenient, as well as guarantees their incorporation transversally in the study plans of the different university careers offered.

Students in the different areas of knowledge should have access to integral training, considering disciplinary training, but also critical thinking that allows them to question current socio-environmental conditions and the need to incorporate environmental and sustainability issues, thus contributing to the fulfillment of a quality education, set out in Objective 4 of the 2030 ASD.

This methodological proposal is feasible to be developed in other superior-level educational institutions that share conditions similar to those of this research, especially in the area of health.

Author Contributions: Conceptualization: R.M.B.; methodology: R.M.B. and C.R.; software: R.M.B.; research: R.M.B.; preparation of the original draft: R.M.B. and J.L.A.; writing—reviewing and editing: J.L.A., C.R., and J.B.; financing: R.M.B., J.L.A., C.R., and J.B. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was approved by the Director of the Higher School of Nursing No. 1.
Informed Consent Statement: Participants were informed of their anonymity, their right to withdraw from the survey at any time, and that the data would be published. Those who accepted completed the questionnaire.

Data Availability Statement: The data are available upon request from the interested parties to the authors.

Acknowledgments: We would like to thank the nursing school’s directors, teachers, and students for their collaboration. We would also like to thank Alejandra Moreno for her technical support in the elaboration of figures and procedures.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Álvarez, C.; López-Medina, I.M.; Linares-Abad, M.; Grande-Gascón, M.L.; Álvarez-García, C. Currículum enfermero y estrategias pedagógicas en materia de sostenibilidad medioambiental en los procesos de salud y cuidado. Enfermería Global 2017, 16, 651. [CrossRef]

2. Rodríguez, C. Educación ambiental para el desarrollo sostenible: Sistematización de experiencias en la Universidad Autónoma de Guerrero. Dilemas Contemp. Educ. Política Valores 2020, 3, 1–25. [CrossRef]

3. Müller-Christ, G.; Sterling, S.; Dam-Mieras, R.; Adomßent, M.; Fischer, D.; Rieckmann, M. The role of campus, curriculum, and community in higher education for sustainable development a conference report. J. Clean. Prod. 2014, 62, 134–137. [CrossRef]

4. Camponogara, S.; Viero, C.M.; Sari, V.; Erthal, G. A abordagem da interface saúde e meio ambiente na formação profissional de enfermeiros. Rev. Gaúcha Enferm. 2011, 32, 647–653. [CrossRef]

5. Zarta, P. La sustentabilidad o sostenibilidad: Un concepto poderoso para la humanidad. Tabula Rasa 2018, 28, 409–423. [CrossRef]

6. Richardson, J.; Grose, J.; O’Connor, A.; Bradbury, M.; Kelsey, J.; Doman, M. Nursing students’ attitudes towards sustainability and health care. Nurs. Stand. 2015, 29, 36–41. [CrossRef]

7. Rodríguez, F. México y la agenda para el Desarrollo Sostenible 2030 de la ONU. Chron. Amériques 2016, 16, 1–10. Available online: https://ieim.uqam.ca/spip.php?page=article-ameriques&id_article=10109&lang=fr (accessed on 12 October 2020).

8. Beynahgi, A.; Trencher, G.; Mozotzarzadeh, F.; Mozafari, M.; Maknoon, R.; Leal, W. Future sustainability scenarios for universities: Moving beyond the United Nations Decade of Education for Sustainable Development. J. Clean. Prod. 2016, 112, 3464–3478. [CrossRef]

9. Too, L.; Bajracharya, B. Sustainable campus: Engaging the community in sustainability. Int. J. Sustain. High. Educ. 2015, 16, 57–71. [CrossRef]

10. Vasallo, Y.; Arciniega, E.F. Desarrollo sustentable y responsabilidad social en la educación superior. Revista San Gregorio 2015, 2, 93–105. Available online: https://dialnet.unirioja.es/descarga/articulo/5326960.pdf (accessed on 12 October 2020).

11. Lozano, R. A tool for a Graphical Assessment of Sustainability in Universities (GASU). J. Clean. Prod. 2006, 14, 963–972. [CrossRef]

12. Leal, W.; Brandli, L.; Becker, D.; Skanavis, C.; Kounani, A.; Sardi, C.; Papaioannidou, D.; Paço, A.; Azeiteiro, U.; de Sousa, L.; et al. Sustainable development policies as indicators and pre-conditions for sustainability efforts at universities: Fact or fiction? Int. J. Sustain. High. Educ. 2018, 19, 85–113. [CrossRef]

13. Lozano, R.; Lukman, R.; Lozano, F.J.; Huisjingh, D.; Lambrechts, W. Declarations for sustainability in higher education: Becoming better leaders, through addressing the university system. J. Clean. Prod. 2013, 48, 10–19. [CrossRef]

14. Jones, P.; Trier, C.J.; Richards, J.P. Embedding Education for Sustainable Development in higher education: A case study examining common challenges and opportunities for undergraduate programmes. Int. J. Educ. Res. 2008, 47, 341–350. [CrossRef]

15. Posner, S.M.; Stuart, R. Understanding and advancing campus sustainability using a systems framework. Int. J. Sustain. High. Educ. 2013, 14, 264–277. [CrossRef]

16. Gómez, F.U.; Sáez-Navarrete, C.; Lioi, S.R.; Marzuca, V.I. Adaptable model for assessing sustainability in higher education. J. Clean. Prod. 2015, 107, 475–485. [CrossRef]

17. Lozano, R. Envisioning sustainability three-dimensionally. J. Clean. Prod. 2008, 16, 1838–1846. [CrossRef]

18. Garza, R.; Medina, J.G. La sustentabilidad en las Instituciones de Educación Superior: Una Visión Holística. Available online: https://es.scribd.com/document/143072087/La-Sustentabilidad-en-Las-Instituciones-de-Educacion-Superior-Una-Vision-Holistica-Docx (accessed on 12 October 2020).

19. Meleis, A.I. Enfermeras y conocimiento de enfermería: Como fuerzas para lograr las Metas de Desarrollo Sostenible. Enfermería Universitaria 2017, 14, 143–145. [CrossRef]

20. Anäker, A.; Nilsson, M.; Holmner, Å.; Elf, M. Nurses’ perceptions of climate and environmental issues: A qualitative study. J. Adv. Nurs. 2015, 71, 1883–1891. [CrossRef]

21. Anäker, A.; Elf, M. Sustainability in nursing: A concept analysis. Scand. J. Caring Sci. 2014, 28, 381–389. [CrossRef]

22. De Oliveira, P.; Kowal, I.C.; Gonçalves, M.D.L.; Beryl, P. Characteristics of nursing professionals and the practice of ecologically sustainable actions in the medication processes 1. Rev. Latino Am. Enferm. 2017, 25, 2909. [CrossRef]

23. Kangasniemi, M.; Kallio, H.; Pietilä, A.-M. Towards environmentally responsible nursing: A critical interpretive synthesis. J. Adv. Nurs. 2013, 70, 1465–1478. [CrossRef]
24. Leffers, J.; Mitchell, E. Conceptual Model for Partnership and Sustainability in Global Health. Public Health Nurs. 2010, 28, 91–102. [CrossRef]

25. Anderko, L.; Chalupka, S.; Gray, W.A.; Kesten, K. Greening the ‘Proclamation for Change’ Healing Through Sustainable Health Care Environments. Am. J. Nurs. 2013, 113, 52–59. [CrossRef]

26. De Almeida, A.B.; Cruz, B.; Brandão, A.L. The Florence Nightingale’s Environmental Theory: A Critical Analysis. Esc. Anna Nery 2015, 19, 518–524. [CrossRef]

27. Meotti, K.; Schebella, G.M. Resíduos sólidos de serviços de saúde: Uma fotografia do comprometimento da equipe de enfermagem. Revista Gaúcha Enferm. 2011, 32, 338–344. [CrossRef]

28. Richardson, J.; Grose, J.; Doman, M.; Kelsey, J. The use of evidence-informed sustainability scenarios in the nursing curriculum: Development and evaluation of teaching methods. Nurse Educ. Today 2014, 34, 490–493. [CrossRef]

29. Ruiz, L. Indicadores institucionales de sostenibilidad. Caso de estudio de una universidad privada del Ecuador. Revista Espacios 2019, 40, 1–9.

30. United Nations Conference on Environment and Development. Agenda 21, Rio de Janeiro, Brazil, 3–14 June 1992. Available online: https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf (accessed on 25 March 2021).

31. Findler, F.; Schönherr, N.; Lozano, R.; Stacherl, B. Assessing the Impacts of Higher Education Institutions on Sustainable Development—An Analysis of Tools and Indicators. Sustainability 2019, 11, 59. [CrossRef]

32. The Australian Research Institute in Education for Sustainability. Indicators Para Medir la Contribución de las IES a la Sustentabilidad: Un reto para las Universidades; Centro Regional de Investigaciones Multidisciplinarias/UNAM; Cuernavaca Morelos, Mexico. 2008.

33. Brito, R.M.; Aparicio, J.L.; Rodriguez, C. Indicadores de sostenibilidad en la práctica educativa de docentes y estudiantes de la Escuela Superior de Enfermería No. 1. Presented at the XV Congresso Nacional de Investigação Educativa (COMIE-2019); Acapulco de Juárez, Guerrero. 2019. Available online: http://www.comie.org.mx/congreso/memoriaelectronica/v15/doc/3056.pdf (accessed on 12 October 2020).

34. Sepúlveda, S. Biograma: Metodología para estimar el nivel de Desarrollo sostenible de Territorios; IICA: San José, Costa Rica, 2008.

35. Consorcio Mexicano de Programas Ambientales Universitarios para el Desarrollo Sostenible (COMPLEXUS). Indicadores Para Medir la Contribución de las IES a la Sustentabilidad: Universidad de Guanajuato, Complexus: Guerrero, Mexico, 2013.

36. Cohen, L.; Manion, L.; Morrison, K. Research Methods in Education; Routledge/Taylor & Francis Group: New York, NY, USA, 2007.

37. Universidad Autónoma de Guerrero. Anuario Estadístico ciclo escolar 2019–2020. Available online: http://informacionestadistica.uagro.mx/anuarios/Anuario_Estadistico_CE_2019_2020.pdf (accessed on 4 December 2020).

38. Brito, R.M. Medición de la sostenibilidad de las funciones sustantivas en escuelas y centros de investigación de la UAGro, Mexico. 2018. Available online: https://drive.google.com/drive/folders/1pwa5GP9riKUSmYEIZvsYxI4HfCUEIg7 (accessed on 12 October 2020).

39. Schenk, E.; Butterfield, P.; Postma, J.; Barbosa-Leiker, C.; Corbett, C. Creating the Nurses’ Environmental Awareness Tool (NEAT). Work. Health Saf. 2015, 63, 381–391. [CrossRef]

40. Brito, R.M.; Rodríguez, C.; Aparicio, J.L.; Paolacci, J.; Sampedro, M.L.; Beltrán, J. Indicators of Sustainability in Educational Practice: Perception of Teachers and Students of UAGro-Mexico. Sustainability 2018, 10, 3733. [CrossRef]

41. Murray, S.; Larry, S. Estadística, 4th ed.; McGraw-Hill: Mexico City, Mexico, 2009.

42. Lozano, R. Incorporation and institutionalization of SD into universities: Breaking through barriers to change. J. Clean. Prod. 2006, 14, 787–796. [CrossRef]

43. Cortese, A. The Critical Role of Higher Education in Creating a Sustainable Future. Planning for Higher Education Journal. 2003. Available online: https://www.scup.org/resource/the-critical-role-of-higher-education-in-creating-a-sustainable-future/ (accessed on 18 August 2020).

44. Batllori, A. La Educación Ambiental para la Sustentabilidad: Un reto para las Universidades; Centro Regional de Investigaciones Multidisciplinarias/UNAM; Cuernavaca Morelos, Mexico. 2008. Available online: http://bibliotecavirtual.clacso.org.ar/Mexico/CRM-UNAM/20100428115235/Educambiental.pdf (accessed on 4 September 2020).

45. Rodríguez, R.; Canponogara, S.; Zavarese, V.; Gomes, M.; Nietsche, E. Educación ambiental para docentes enfermeros: Percepción e relación con la formación del enfermero. Rev. Gaúcha Enferm. 2015, 36, 85–93. [CrossRef]

46. Torres-Alzate, H. Nursing Global Health Competencies Framework. Nurs. Educ. Perspect. 2019, 40, 295–299. [CrossRef]

47. Chen, M.J.; Price, A.M. Comparing undergraduate student nurses’ understanding of sustainability in two countries: A mixed method study. Nurse Educ. Today 2020, 88, 104363. [CrossRef]

48. Richardson, J.; Clarke, D.; Grose, J.; Warwick, P. A cohort study of sustainability education in nursing. Int. J. Sustain. High. Educ. 2019, 20, 747–760. [CrossRef]

49. Richardson, J.; Grose, J.; Bradbury, M.; Kelsey, J. Developing awareness of sustainability in nursing and midwifery using a scenario-based approach: Evidence from a pre and post educational intervention study. Nurse Educ. Today 2017, 54, 51–55. [CrossRef]

50. Nigatu, A.S.; Asamoah, B.O.; Kloos, H. Knowledge and perceptions about the health impact of climate change among health sciences students in Ethiopia: A cross-sectional study. BMC Public Health 2014, 14, 587. [CrossRef]
51. Yang, L.; Liao, W.; Liu, C.; Zhang, N.; Zhong, S.; Huang, C. Associations between Knowledge of the Causes and Perceived Impacts of Climate Change: A Cross-Sectional Survey of Medical, Public Health and Nursing Students in Universities in China. *Int. J. Environ. Res. Public Health* 2018, 15, 2650. [CrossRef]

52. Von Haartman, R.; Sammalisto, K.; Lozano, R.; Blomqvist, P. A Longitudinal Comparison of Sustainability Learning between Men and Women in Engineering and Nursing Programmes. *Sustainability* 2017, 9, 1464. [CrossRef]