The Impact of University Social Responsibility on the Environmental Education of the Inhabitants of Chosica, Peru

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Abstract: - Universities implement social responsibility policies in order to mitigate their impact on the community and the natural environment. In the district of Chosica, residents face the consequences of environmental degradation and climate change. In this context, through a research-action approach, a private university, as part of its social outreach activities, developed an environmental program to promote sustainable attitudes and behaviors in the educational community of the Leticia Kieffer Marchand school. As a result of the intervention, recycling was valued as an effective strategy for reducing solid waste, and the participation of families in conservation activities contributed to strengthening community commitment and environmental awareness.

Key-Words: - University social responsibility, environmental culture, sustainable behaviors, ecological attitudes, recycling, environmental impact.

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1 Introduction

In the 1970s, the term Social Responsibility began to have a connotation that involved stakeholders. In this context, the use of resources by the company to develop responsible activities capable of generating profits in an ethical manner and avoiding dishonest acts was recognized, [1]. In the 1990s, the sustainable development approach is incorporated into the scope of Social Responsibility. This approach is related to the responsible management of resources, avoiding their depletion and preserving them for future generations. Currently, companies conceive social responsibility as a set of strategies aimed at meeting the demands of stakeholders, giving added value to the product or service they

offer, [2]. It is important to emphasize that social responsibility is based on ethical and social principles, [3]. In this sense, the company assumes a responsible role towards its environment, seeking to adopt values such as respect, solidarity and honesty, which allow it to offer greater social value and affirm its commitment to the community. From an environmental social responsibility perspective, the various social actors assume the commitment to care for biodiversity and ecosystems [4], through actions aimed at the preservation and maintenance of the natural environment, [5]. For its part, university social responsibility (USR) is framed in the activities carried out by a university entity, whether public or private, in order to guarantee quality education, promote research as a vehicle to meet the demands of society and protect the natural environment. University social responsibility is a vision shared by the university, as an entity that trains professionals, which seeks to contribute to the improvement of society, through the implementation of organizational management policies, environmental, research, teaching, and public activities, [6]. As part of the social responsibility policies, and within the framework of the research axis, a proposal was developed aimed at contributing and responding to the needs of a sector of the population in relation to the care of the environment and the improvement of its natural space. The university undertook the commitment to deploy actions to address a problem in the social environment, involving the university community in the proposal of alternative solutions, [7]. Likewise, at the cognitive and epistemological level, university social responsibility aims to generate knowledge from research conducted in response to social and environmental problems, [8]. An example of this is the situation faced by the residents of the Nicolás de Piérola human settlement in Chosica, who during the months of January to March suffer the ravages of climate change and the "El Niño" phenomenon, due to the geographical location of the area, where landslides occur as a result of the overflowing of the river. However, both the authorities and the inhabitants themselves do not pay due attention to cleaning up the riverbed or planting trees in the area. In some sectors of the district, it is common to see the accumulation of solid waste, as well as contamination and gas emissions from waste incineration. Against this backdrop, a private university in Lima, as part of its social responsibility policies, undertook to implement an environmental program at the Leticia Kieffer Marchand School No. 0063, with the aim of promoting sustainable attitudes and behavior in its educational community. Within the framework of this program, talks, workshops and educational sessions were held to provide information, raise awareness of the environmental impact generated by the accumulation of waste, and disseminate the culture of the 3Rs (reduce, recycle and reuse). These activities sought to promote environmental conservation actions both at school and at home, encouraging collaborative work, active participation and, above all, commitment to improving the natural environment.

2 Literature Review

2.1 Environmental Education

From the environmentalist perspective, environmental education should be provided through experiential, critical and praxis-oriented learning, [9]. Where learning implies that students become involved in exploring, discovering and participating in their environment, building a relationship with nature based on ethical commitment and collaborative action in favor of the environment. In order to preserve and conserve the spaces and resources provided by nature, it is relevant to address the issue of environmental education, especially considering the crisis that we are currently going through, [10]. In this sense, [11] refers that environmental education is recognized as "a strategy of global scope", which emerged at the Stockholm Conference in 1972, convened by the United Nations organization in view of the eminent ecological danger and risk that, at that time, was already looming as a result of industrialization, overpopulation, climate change and economic development. Therefore, educating from an environmental approach represents today a vehicle that allows society to acquire knowledge and be informed about the factors, consequences and preventive measures that should be practiced to contribute to the protection of the environment. In this framework, environmental education is consolidated as an indispensable factor to generate a sustainable environmental culture in society, [12], [13]. And it is the teacher who assumes the commitment in his or her educational work to educate people who are environmentally responsible with their natural environment, [14]. Likewise, environmental education for sustainable development is an essential component of any educational process in the 21st century, as it allows environmental degradation to be studied and addressed in an objective and holistic manner, incorporating an ecosystem approach into teaching

practice [15]. A relevant aspect in the construction of an environmental culture is the progressive strengthening of habits related to the practice of recycling, reusing and reducing. Although solid waste management continues to be a problem in various societies globally, due to various factors, [16], it is necessary to implement strategies that promote awareness in people, encouraging interest in learning to identify the waste generated in daily life and its proper treatment through the practice of the three Rs. Therefore, for citizens to have a sustainable environmental culture, it is essential to promote three key components: (a) ecological attitudes, understood as the set of facts, perceptions and images about the environment that the human mind stores and that influence decision-making, [17].

These attitudes depend on the individual's prior knowledge, which allows expressing the intention to act in a certain way, recognizing the difficulties or sacrifices those certain decisions related to ecological and/or environmental aspects may imply. In this sense, attitudes towards the environment have a significant impact on ecological and pro-environmental behaviors, [18], [19]. (b) Sustainable behaviors are evidenced in the responsible interaction of the individual with his natural environment. For this, he/she must have adequate information on the processes of environmental degradation and also recognize that his/her actions can generate positive changes in the preservation of the environment, [20], [21], [22]. However, it is also questioned whether high environmental awareness guarantees that citizens will put sustainable behaviors into practice. In this regard, schools must continue to educate students in the environmental knowledge that is essential to motivate positive attitudes and foster true consistency, [22], [23]. (c)Sustainable knowledge represents the knowledge that a person must possess about ways of coexisting that enable them to deal with socio-environmental, epistemic and culture conflicts, [24]. From this perspective, learners actively develop themselves in a process of continuous improvement, putting their knowledge into practice with a reflective, critical and ethical awareness, [25]. Consequently, an education in sustainable development is based on integrating values to promote changes in the behaviors of learners, [26]. Therefore, it must be present in all stages of learning, the central purpose being to make society more sustainable and with equity for all. Thus, an education focused on sustainable development aims to strengthen students' competences to solve problems related to the subject, promoting active, reflective and critical participation in their environment, [27]. In this same line, an adequate environmental literacy of the teacher favors a sustainable pedagogical practice, contributing to the integral formation of the student, [5].

2.2 University Social Responsibility

The university, through university social responsibility assumes the commitment to carry out an ethical management, based on the application of principles and values promoted during training, research and extension. This perspective is supported by the ethical theory that guides the management of the impacts derived from the University Social Responsibility, [28]. The USR has been acquiring greater relevance in recent years, highlighting the involvement of organizations with their stakeholders, so that the university participates as an ally and co-responsible for the development of its community, [29]. This shared vision with the university and the implementation of organizational management policies, environmental, research, teaching, and public activities contribute to the improvement of society, [6]. Therefore, the RSU must be managed under a transversal approach involving all university stakeholders, authorities, teachers, students and administrative staff, considering the impacts at organizational, environmental, educational, cognitive and social levels, [30].

Within this framework, the organization Union of Latin American University Social Responsibility (URSULA) has assumed since its foundation the function of promoting the model at the regional level, deepening aspects such as management and self-diagnosis. It also questions the criteria used by the ministries in the processes of evaluation and accreditation of university quality, by not taking into account the USR approach or its indicators as relevant inputs for these processes, [31]. In this context, out of 159 university entities attached in URSULA, only 36% include the term “social responsibility” in their mission and vision, [32]. This finding suggests that the socially responsible behavior of universities is still far from their strategic philosophy.

Likewise, the 2022 report on Environmental Sustainability in Peruvian Universities (RSAUP), presented by the Ministry of the Environment [33] in collaboration with the Inter-University Environmental Network (RAI) showed that 64 universities, with the purpose of contributing to the sustainable development of the country, have implemented environmental standards within their institutional policies. In this line, it is essential that

the models with a Social Responsibility approach adopted by universities also integrate the Sustainable Development Goals [34], which will serve as a guide in their strategic plans. Promoting the training of professionals with a socially responsible sense, evidenced in their daily actions.

2.3 Environmental Practices

Teacher training practices have encouraged the development of actions aimed at promoting a respectful relationship with the environment, contributing to a change in attitudes and everyday behaviors, [35]. In this sense, environmental practices encompass all types of actions undertaken with the aim of reducing the negative impact of climate change on ecosystems, [36]. One of the environmental practices with a responsible approach implemented at the institutional level has been solid waste management. This action responds to the increase in the number of inhabitants, internal and external migration to large cities and urban expansion, factors that have contributed to the increase in the generation of solid waste. The responsibility for waste management and disposal falls on local governments. However, they currently face a lack of organization and economic resources that limit efficient management, [37]. In addition, waste generation is a function of family size, educational level and monthly income, [38], [39]. Many households still do not know how to properly separate waste, which evidences the need to provide guidance that contributes to the creation of a circular economy, where companies are also involved, promoting the design of products that can be reused and recycled, with the aim of minimizing environmental impact and fostering economic growth. The circular economy, which directs the efforts of the educational community towards the reduction and reuse of materials such as plastic and paper, is based on the eco-conception of products, prolonging their useful life and maximizing the use of the materials of which they are composed. This approach promotes a society that not only respects the environment, but also optimizes the use of natural resources, thus contributing to long-term sustainability and conservation, [40].

3 Methodology

The study was developed under an action research design, with the purpose of intervening in an educational context where a significant environmental problem was identified. Using an inductive method, the activities were observed in situ. This type of research contemplates four moments: exploration of the phenomenon, inspection of the causes, description of the actions implemented and explanation of the results achieved, [41]. The research began with the observation of the environment of the Nicolás de Piérola human settlement, located in the district of Chosica, and was complemented with diagnostic interviews with teachers of the educational institution. These interviews made it possible to collect relevant information on the environmental problems that affect the community and how they impact the quality of life of the inhabitants. Participant observation facilitated the collection of information necessary for the construction of the categories and subcategories of the research. Based on the diagnosis of the environmental needs of the community, an environmental culture program was implemented for the educational community of the institution Leticia Kieffer Marchand N° 0063.

The action plan was designed to benefit 200 families, 320 primary school students and 15 teachers, and was implemented over a nine-month period (March to December 2023). With regard to its implementation, the program responded to four principles: (a) participatory, by involving the educational community in the activities; (b) resolutive, by promoting reflection and the search for solutions to environmental problems; (c) experiential, by providing spaces where participants shared their experiences; (d) practical, through the execution of concrete actions aimed at improving the environment, [42]. Regarding its structure, the program was developed in stages. The first stage was to raise awareness about environmental damage through talks to teachers, parents and students who agreed to participate on a voluntary basis. In the second stage, projects and activities were developed from the learning sessions of the Science and Technology area, in which students and their parents participated in campaigns for the generation of green spaces within the institution. Among the achievements were the installation of hanging planters on both floors of the school, whose conservation was assumed as the responsibility of the students. In addition, a solid waste classification system was implemented by placing color-coded garbage cans in the courtyard: blue for paper, green for plastic and red for organic waste. Recycling workshops were also organized, where laces, fabrics and various handicrafts were made by reusing the material collected at the school. In the final stage of the program, semi-structured interviews were applied by means of a purposive sampling to 10 teachers and 10 parents. The inclusion criteria were:

belonging to the educational community, having participated in the program activities and showing willingness to answer the question guide. The purpose was to know the perception of the participants on the impact generated by the program in the community.

4 Results and Discussion

After the implementation of the Environmental Culture Program in the educational community Leticia Kieffer Marchand No. 0063 during the 2023 school year, which began in April and ended in November of the same year. Teachers and parents agreed that the activities of the environmental culture program, as part of the social responsibility implemented by the university, were timely to address the environmental problems of the locality: 1:87 "The population has a bad habit of throwing garbage, not recycling, they are not aware of the damage they cause to the environment," 1:100 "There are not many green areas because the municipality does not pay due attention and the neighbors are not interested in having gardens and caring for green areas". 1:110 "In the markets, the accumulation of garbage brings flies and bad odors that those of us who live nearby have to put up with".

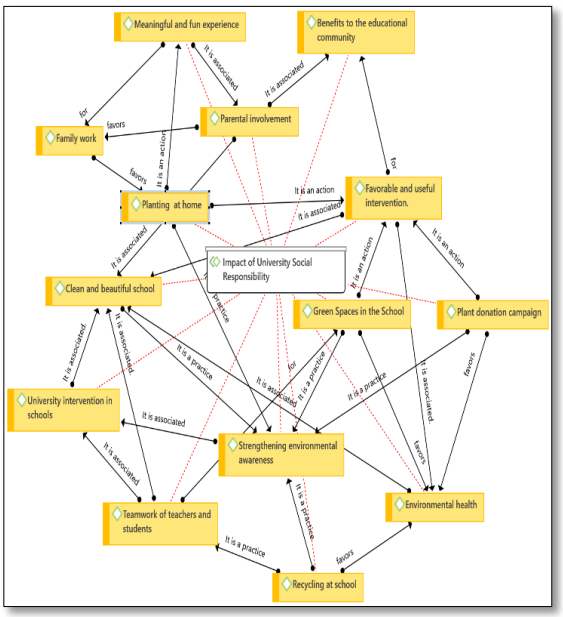

Fig. 1: Impact of URS on the educational community.

Figure 1 shows the categories identified from the statements of the teachers interviewed, who highlighted that, after eight months of intervention, the practice of environmental behaviors is evident in the students, who assumed the responsibility of caring for and watering the plants in the pots installed and other green areas in the institution, in addition to the practice of the 3Rs in their school environment and at home. The impact generated by the program from the USR is synthesized in a significant experience where teamwork, the participation of parents and the rest of the educational community were factors that contributed to the success of the program. In the interview with the parents, they stated that 1:105 "The school also looks neater and cleaner with the flower pots and recycling garbage cans that were placed in the playground and classrooms." 1:121 "The support provided by the university was very beneficial for the school for the students, teachers and also the parents who learned how to perform actions that will help take care of our locality and district." 2:4 "From our educational institution, we have focused on the resolution in teamwork with teachers to improve the environment, and the environmental approach." 2:31 "This has been rewarding, to see how the children improved their environmental awareness. It has been an important experience in our educational community." 2:44 "It is a great contribution that the University has provided to our community by teaching students to be responsible and by improving environmental health." We must consider that the involvement of the parents has been transcendental so that the actions that the students practiced at school are replicated at home. 2:51 "The project has made the students aware of environmental care, and it has been applied both in our educational center and at home". 2:73 "Parents reinforced these actions at home and other

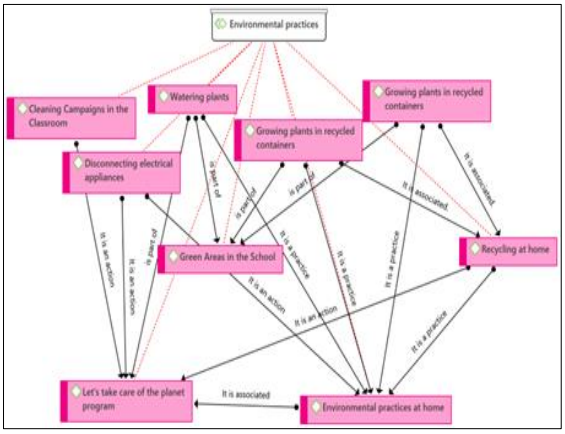

Fig. 2: Main environmental practices of social responsibility.

Figure 2 shows how the implementation of the "Let's Take Care of the Planet" program made it possible to carry out recycling campaigns,

implementation and care of green areas, and savings in the use of water and energy, which became environmental practices that students carried out as part of their school work and which were replicated at home. 2:48 "We have strengthened the concern for the care of the plants in the environment around them, as well as waste management, including the 3 R's." 2:37 "We have different containers and containers with different types of waste. 2:37 "There are different containers for the types of waste that allow the children and the rest of the educational community to learn to classify for later recycling." 2:20 "The children have the opportunity to observe this beautiful practice that we have applied in the educational institution that they will be able to imitate and do it at home." 2:17 "It has helped us to recycle, reuse and maintain a pleasant environment; to have green spaces where they did not exist." In this implementation process, the university teachers were concerned with providing awareness talks to the entire community, especially parents, so that these actions can be carried out at home 2:13 "One strategy implemented to sustain these practices is to focus on their application at home; as behaviors that families must adapt to." Parents note that environmental practices have been developing with their children 1:119 "I use the empty paint buckets to plant my plants and as a reservoir for water." 1:113 "My children with their teacher placed several pots with plants in the classroom and yard, and they took care of taking care of it." 1:103 "We try to turn off the lights in the rooms when we go out, we unplug the appliances before going to sleep so we don't waste light during the night. 1:102 "I collect the plastic bottles that we use at home, cans, cardboard boxes and we put them in bags separately with the help of the kids and then we give them away."

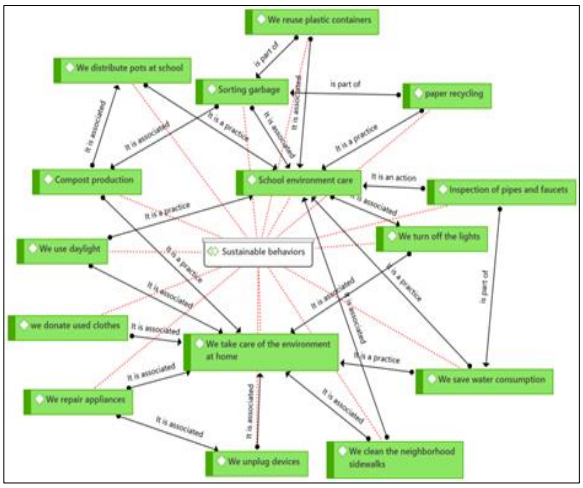

Fig. 3: Sustainable behaviors of the educational community

In this sense, Figure 3 shows the results of the interview with teachers and parents were consulted about the attitudes and behaviors that were strengthened in the educational community with the "Let's Take Care of the Planet" program, they pointed out 2:43 "The responsibility of the students has been strengthened; they are aware of the care that plants need, and they even get involved in this action." 2:10 "The behavior we have tried to instill in our entire educational community is to maintain cleanliness, order; as well as learning to reuse and recycle." 1:99 "It has influenced quite a bit, they are now involved in our plant cultivation and like to actively participate." 1:106 "The talks given to us parents were very useful because we learned to recycle and reuse the things we have accumulated at home that we no longer use to give them a second use." 1:86 "In my home we have the habit of recycling, also one of my children has as a project the production of compost for use in gardening both for our home and for the school where he studies." 1:123 "Now they take care of the water and show it when they brush their teeth and take a bath." 2:22 "We have tried to promote environmental awareness not only in our children but also in the parents." The university teachers who were part of this program expressed satisfaction with the improvements that took place in the educational institution, especially when witnessing the sustainable practices such as reuse of materials, reduction in water and energy consumption, routine watering and care of green spaces (gardens, bio-gardens and planters) that the students and their families carried out for the benefit of the school, in addition to replicating the actions at home.

5 Discussion

The implementation of the environmental culture program within the framework of the University Social Responsibility (RSU) policy has generated significant results, highlighting teamwork, the active participation of parents and the commitment of educational actors, in addition to maintaining a clean and healthy school environment. These achievements promoted the adoption of sustainable practices by the educational community, which evidences a change in attitudes towards the protection of the local environment. Similarly, a project integrating the community was implemented, inferring that these initiatives allow linking the university's commitment to society and environmental protection, [43]. While the contributions of other authors affirm that a sustainable education is key in the development of

competencies related to sustainability in basic education students, [27].

On the other hand, social outreach activities lack impact and do not contribute to sustainable improvement without the direct involvement of stakeholders, [44]. This statement reinforces the importance of active work and collaboration among stakeholders to ensure initiatives and decision-making in the field of environmental conservation. The routine practice of the three R's, water and energy conservation, as well as the maintenance of green areas, both at school and at home, reflected an active commitment of the educational community to sustainability. These activities encouraged the adoption of responsible habits of conservation of the natural environment in students and family, evidencing the impact of university social responsibility implemented in the educational institution. The contributions of a study indicates that the intervention of the university in schools through talks and workshops on environmental responsibility favors the ecological awareness of students and families, by providing them with knowledge on circular economy, collection and differentiated separation of waste, [45]. Research from the viewpoint of meaningful and situated learning highlights that the connection between curricular content and the socio-environmental context contributes to the formation of children as environmental promoters, [46].

6 Conclusions

The environmental problem is a global concern that requires concrete actions, especially in contexts where the population does not actively participate in the preservation of their natural resources, either due to lack of knowledge or disinterest. The study underscored the importance of developing a cognitive and affective environmental awareness in students and parents, promoting reflection, awareness and decision-making for the conservation of the natural environment. The interviewees emphasized that the practice of recycling is crucial to reduce the accumulation of solid waste, especially in the riverbed and in the green areas of the Nicolás de Piérola Human Settlement in Chosica-Peru. Family participation in conservation activities reinforced community commitment and environmental awareness, evidencing a positive impact on the home-school relationship. In addition, the circular economy approach emerges as a key strategy to address the environmental crisis. Encouraging the reuse, recycling and recovery of materials not only reduces waste, but also promotes the creation of a continuous cycle of value, where waste is transformed into resources. The approach is not only applicable at the industrial level, but also in the educational community, where students and their families can be instilled with a mindset that prioritizes the maximum use of resources, minimizing environmental impact and generating long-term economic and social benefits.

The school plays a fundamental role in providing solid training in environmental education from its initial formation. Classroom sessions in the area of science and technology focused on reinforcing content on ecosystems and human impact, while arts and crafts workshops allowed students to put materials to a second use, fostering creativity and sustainability. These activities, aligned with the school's civic and environmental calendar, not only promoted learning, but also active participation in science projects and the production of useful items, thus consolidating environmental attitudes and behaviors in the educational community

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- Melba Vásquez; Conceptualization, conceived the study and were responsible for the design and development of the data analysis. Writing - review & editing.
- Judith Yangali; Project administration and reviewed the first draft of the article and provided supervision.
- Maruja Baldeón; Investigation, conducting a research and investigation process, specifically performing the experiments, or data/evidence collection.
- Delsi Huaita; Writing-original draft, Preparation, creation and/or presentation of the published work, specifically writing the initial draft.
- Angela Herrera; Development or design of methodology; creation of models.
- Milagritos Lavado; Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.

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