“Environmental Education for Adults based on Participatory Action Research”

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Abstract

This educational intervention project proposes a training program of good environmental practices for DHC-AGUAKAN collaborators (as a pilot company), with participation of the Environmental Educators Network (REA by its Spanish acronym).

The intention is to contribute to the social responsibility that DHC-AGUAKAN executes in support given to its clients, aimed at developing the work proposal based on a Participatory Action Research approach.

The environmental practices topics are the backbone of educational intervention projects proposed to DHC-AGUAKAN in order to positively impact the work and personal life of its workers.
Problem Statement

Environmental Education should be focused not only on the educational processes of children and young people, but also on the educational processes of adults, who make the economic and political decisions regarding the direction taken by cultures and education itself.

Adults, through Environmental Education, can create the need to contribute to the improvement of the environment, by building a modern society viable for future generations, where everyone takes their corresponding responsibility, including companies with training programs taking into account environmental education training to improve their processes and the conditions of their staff.

The importance of Environmental Education for adults is that it is a transcendental medium through which a sustainable human development is formed, which, according to Marúm and Reynosos (2014), can be accessed with tools that may be implemented with better conditions in the socioeconomic dynamics of present and future generations.

Companies are responsible for implementing training programs promoting sustainable human development with environmental practices that not only benefit the organization, but also include the collaborators forming part of the company and assure that actions generate life experiences motivating the change.

Based on the importance given to training and taking into account the environmental education needs of employees, it is necessary to inquire the following:

What is the interest of the collaborators to know about natural resources and the ethical, political and economic aspects involved in their management? And does this interest allow the development of an environmental training program in the workplace?

It is important, therefore, that the collaborators be formed based on their educational, working, social, cultural and family needs in environmental matters, specifically on local physical and ecological aspects on their ecosystem, maintaining and promoting new quality levels at the company which generates environmental habits that improve their quality of life.

Methodology

Participatory methodologies, as complementary tools of professional work at the micro-local level, such as a company, neighborhood, district or municipality, can contribute to achieving the "ultimate goal" of community integration and social cohesion. Citizen participation is a means to improve the quality of life.

This public and social responsibility must be articulated from several axes:
• The understanding of each performed in society, given the increase in inter-related areas and instances and their increasing complexity.

• The response to the needs of each member of society.

• The willingness and responsibility of all members to access knowledge.

• The promotion of active participation to transmit knowledge and to have the possibility of being participants in active cooperation (Bru, Basagoiti).

In this project, the Participatory Action Research is the tool to generate dialog platforms that thought-provoking to forge experiences that provoke a social and environmental transformation, which contributes to strengthen the decisions that affect daily life.

Rigal y Sirvent (2014) mention it as a way to make social conscience that procure the real participation of the subjects involved in the processes, collectively generating a critical knowledge about their reality, to strengthen the participation capacity and the social organization of the popular sectors, promoting the modification of the conditions that daily affect.

A company opens the opportunity for a group development that creates the optimal conditions to promote work mechanisms and ways that allow all committed employees to be part of the body’s decisions, improving working and living conditions.

“I cannot investigate the other’s thinking about the world if I do not think. But I do not automatically think if the others do not think either. I simply cannot think by others or for others, or without others. The investigation of the people thinking cannot be done without people, but with people, as a subject of its thinking“(Pablo Freire 1970).

All thoughts and reflections are complemented to create masterpieces which makes us more complete human beings, but also unique by the individual construction that each performs for personal growth.

**Formative Proposal**

In order to implement the intervention project, a qualitative approach was used as a flexible process based on logics and an inductive approach was used with an interpretative perspective based on the understanding of the environmental knowledge, since the design of a multi-participatory strategy for the education of the environmental practices for preservation of local natural resources for DHC-AGUAKAN, is a very specific task.

A dialogue phase was began between the specialists of the REA, who participated as facilitators, observing the research design to develop a proposal that covers the personal needs that each individual requires to construct by itself in the educational work time.

In order to propose an environmental training program, it is possible to direct and set on functional processes according to the DHC-AGUAKAN ideology. In this sense, it is possible to formulate an ethical intervention that is assumed as a process facilitator to adequate to the local
culture, the knowledge and experiences about the best relationship with nature, turning ethics into an evaluation baseline, reflection and construction of guidelines.

Work was done through the following techniques:

- Collection of data as interviews with the DHC-AGUAKAN managers, in order to know the company needs to develop a training program in environmental practices.

- Analysis of the experiences of REA members and observation in the group discussion that were carried out with the employees to know their environmental knowledge.

- Evaluation of the practices that the participant shared so that each one integrated them according to their understanding.

- Feedback and reformulation

Through observational methods, analysis and dialectics of the evaluation instruments, a diagnosis reporting about knowledge, appreciation, working and environmental ethics of those involved, could be generated.

To support the abovementioned, we worked together with the REA members, who participated in the PRONATURA Trainer of Trainers in Environmental Education program, developing an instrument type that was created from the participatory action research to know the environmental actions, knowledge and feelings, both DHC-AGUAKAN and collaborators.

Through the analysis of the evaluation instrument, it was possible to generate a diagnosis reporting the knowledge, appreciation and working and environmental ethics to develop the proposal for the environmental education program, as an instrumental case study where it was intended the training of a group that generates changes in their working and social environment.

**Methods and techniques for data collection**

**METHODOLOGICAL INSTRUMENTS:**

Interviews with five managers and area heads of DHC-AGUAKAN: they externalize the educational actions that have been carried out, the current conditions of the operating body and the environmental education needs that it considers appropriate, in order to promote an improvement in its environmental practices.

Interviews with 100 clients: a survey showed what they believe that workers should learn to provide a better service to the community.

Pilot workshop:

The participatory action research was carried out with the REA members to create the pilot workshop based on the Diploma of Trainer of Trainers, under the following activities:

- Three working meetings between the REA members to analyze the topics and activities for the pilot test.
• A practice meeting of the activities to identify the opportunity areas, reinforce them prior the implementation of the pilot workshop and validate the final outcome.

• Interview with the collaborators attending to the pilot workshop.
  
  o Participation of the DHC-AGUAKAN Human Resources Area to select the employees participating in the pilot workshop according to the variables of age and length of service in the company.

Results

In order to achieve the objectives raised at the beginning of this research, the information obtained by the five interviews with the managers and area heads of DHC-AGUAKAN was analyzed to provide a display for the REA members, inviting them to elaborate the “Proposal for the environmental training workshop for DHC-AGUAKAN employees”.

Likewise, the results obtained from the survey of 100 clients, which shows that they do not impact the creation of the educational proposal, since it is inferred that the clients show more interest about other topics related to the water system service, such as discounts and nonconformities, than the employees’ participation in an environmental training program.

When we see the results, we assume that they do not know the activities, technology and environmental programs that the concessionaire applies to grant the services to the citizens and that the users’ interest are directed to solve issues regarding to the abovementioned topics.

Previous information was analyzed in two dialogue tables with the REA members, which resulted in a training proposal and a practice of the activities proposed to identify the opportunity areas in which each trainer (REA member) expressed its opinion to enrich the program.

At the beginning of the workshop, 21 employees from 23 who attended, answered the same survey applied to clients, so that the group of trainers could identify what knowledge and interests they had before participating in the pilot workshop, analyzing the behavior, comments and conclusions of the participants, providing a final reflection to the REA members about the pilot workshop performed.

As a result, it is clear that the employees clearly aware the topic of water regarding their area, but there are confusions when it is talking about topics regarding other areas, they are mostly ignorant of environmental activities, technology used by working areas where they do not participate, among others.

The above is related to water management, activity that they performed day by day.

When talking about:

• Alternate energies
• Consumption
It is perceived that they have experiences that provide them with knowledge and this gave them a guideline to make opinions with certainty, the employees have knowledge and prefer for some topics identified in the educational activity of the workshop proposal as follows:

In the first stage: “The activity that they practice the most at home with their families”, the participation was more directed to: ‘Water resource’, ‘Alternate energies’, ‘Knowing biodiversity’ and the topics that they did not take into account were ‘Consumption’, ‘Consumerism’, ‘Visual and auditory contamination’, ‘Soil assessment’ and ‘Air quality’.

In the second stage: “What activity would you like or do you think should be applied in your work area?” It was noted that the participation was further divided in the different topics, the visual and auditory contamination was not considered.

In the third stage: “The activity that they had never included, but now they are interested for develop it at their neighborhood”. Likewise, the visual and auditory contamination was not considered by them.

It was noted that it is necessary that the topics are named in each area, giving an example of actions, experiences or a definition for a better understanding and the course participants create a reflection in selecting the topic that they consider more appropriate.

In the workshop implementation, the trainers (REA members) analyzed and inferred the verbal and kinesthetic responses of the workers to make a report and with this, at the dialog table of the perceptions collection, the opinions of the attendees were presented to make changes to the environmental education workshop proposal for DHC-AGUAKAN employees.

At the same dialog table, it was discussed about the failures in which the facilitators incurred to generate the right environment that allows that the workshop attendees can and want to learn. It was agreed that workshop participants would be who present their experiences and develop the topics to acquire knowledge. The role of the trainer will be create the environment to acquire learning.

I infer that the each of the REA trainers was given the opportunity to reflect on their activities and reaching styles, based on the comments of the trainers, “it was a team work that strengthened us and attached us to the idea to conduct this project to other instances. At the same time, it was commented that each activity that is organized must start from the participatory action research”.

The staff considered that the proposal results met the expectations of the program implemented to the pilot group, ensuring that the proposal is dynamic and adaptable to the needs of the other groups that the Human Resources area program for the environmental training workshop.
Implications

The DHC-AGUAKAN conditions to develop an environmental training program for its employees are relevant since the company is in a process aimed to seek the compliance of the official regulations of the various governmental instances, certifying the company in environmental quality where each employee is involved from his/her working area, developing the environmental knowledge as a working and personal tool.

There is a constant training for all personnel, but it would be very valuable to guide it to preserve the environment, preserving the worker nature which is the human essence, since it is part of an environment and must learn to care it; be aware to the need for create a congruent working society that transcends the company borders, as trained workers, specialists with the possibility of creating more approaching channels with society are trained.

Specifically, it was possible to integrate a diagnosis of the training needs through the surveys to the clients and employees; while the analysis to the interviews with the managers and area heads allowed to know the appreciation and perception of the natural resources of the DHC-AGUAKAN employees to develop an environmental good practices training program.

For this diagnosis, we worked with the Operating Body and trainers and employees.

With the Operating Body, the needs, the actions taken and educational view were identified for the concessionaire.

With the REA, the working topics were identified:

- The environmental actions already carried out by the member at home.
- The actions that could be implemented in the working area.
- The actions that had never considered and now are considered for implementation in the community.
- Waste reduction, water resources optimization, alternate energies, consumption, consumerism, knowing biodiversity, soil assessment, air quality, visual and auditory contamination.

The above considering the expertise of each one of the REA facilitators who participated in the creation of the pilot workshop performed in a participatory way in two working meetings.

On the other hand, the survey was performed with the employees on their expertise areas and the traditional knowledge to share as a group. Finally, the pilot workshop was applied to the workers where the knowledge exchange and the disclosure of the most pressing needs were given.

Politics

The environment is a people common heritage with unique characteristics of manifestation, establishing some times and places, conditioning the particular life but at the extent that each contributes in their experience to organize habits, patterns, skills in the individuals. In this regard, the United Nations Educational, Scientific and Cultural Organization (UNESCO) considers that sustainable development begins with the education:
Ban Ki-Moon, General Secretary of the United Nations states that: “To be prosperous, countries need trained and educated workers. The challenges of poverty eradication, the fight against climate change and the achievement of truly sustainable development in the coming decades are pressing us to act together. With collaboration, leadership and successful investments in education we can transform the people lives, the economy of the countries and our world in general” (UNESCO 2014).

The need to provide quality education to as many people as possible is present in all new proposed objectives:

- Reduced poverty
- Improved nutrition
- Health and Wellness
- Gender equality and women empowerment
- Sustainability of water and energy resources
- Economic growth and decent work
- Reduced inequalities
- Environmental protection
- Peaceful, just and inclusive societies

"The evidence is indisputable: education saves lives and transforms life; it is the foundation of sustainability... Therefore, there must be a collaboration among all sectors of development to make education a universal right", says the General Director of UNESCO, Irina Bokova (UNESCO, 2014).

Benavot, 2014 Director of the Education for All Global Monitoring Report, "provides compelling evidence on the dynamic interaction between education and other development priorities, and reminds us that acting together we can achieve a development that is exhaustive, equitable and durable". (Idem).

Amina Mohammed, United Nations Secretary-General’s Special Adviser on Development Planning after 2015: "Only genuine collaboration will enable us to make real progress towards meeting the new global goals of sustainable development. Teachers, politicians, economists and activists must find a common ground in their quest for substantial and sustainable change". (Idem)

Ted Turner, founder and President of the United Nations Foundation: "Education is a foundation for sustainable development. Quality education not only helps to improve future health and life conditions, but also to create a global, active and informed citizenship. Training the next generation of leaders to be aware of the importance to protect our environment and fighting against climate change is a decisive investment to enjoy a sustainable planet and future for all". (Idem)

If education is a fundamental right and the basis of progress in any country, adults should not be excluded from the educational process, where companies are the best place to provide educational programs that are inclusive, comprehensive and equitable so that their employees improve not only their working activities, but also transform and save their personal and family life.
In this places, the Environmental Education should be a pillar for training topics provided by organizations to achieve sustainable development, which begins by training their workers, encouraging them to appropriate the projects and actions that arise in the functions they perform day by day. In this project, the environmental training is the key to meet established goals and to exceed the expectations.

With the abovementioned, it is possible to ensure prosperity, with trained and educated workers to eradicate poverty, combat the climate change and achieve a truly sustainable development in the coming decades, which encourages the joint participation of all members to carry out substantial and sustainable changes.

In order to meet these objectives, DHC-AGUAKAN carries out the collaborative task of promoting and implementing various education programs based on comprehensive training that seeks development so that each individual is capable of transforming his or her environment, in a non-formal education way, in different levels of education, including adult education in their workplaces under the National Water Law, which includes a chapter on water culture and mandates the National Water Commission (CONAGUA) to promote among the population, authorities and communication media, the water culture in line with the reality of the country and its hydrological regions (CONAGUA, 2014).

The National Development Plan 2013-2018, is added through its Axis 4 “Environmental Sustainability”, which proposes the strategy of encouraging a water culture that favors the saving and rational use of water at home, industry or agriculture.

Likewise, it is considered the National Water Program that establishes as Objective 5 “to consolidate the participation of users and the organized society for the water management and promote the good use culture”.
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