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Participatory Learning Applied to Education and Rural Development

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Abstract: This study develops a model of participatory education for comprehensive training of students studying Sustainable Agricultural Innovation, to increase its contribution to rural development through the establishment of home gardens. Application the first half of 2018 was held in Ciudad German, Cosamaloapan, Veracruz, involved 30 volunteers and 5 students of the Technological Institute Superior of Cosamaloapan. analysis of reality, identifying common goals, contribution and exchange of knowledge, experience and technical execution: a participatory methodology that includes used. Highlights the interest of citizens to participate in programs for the empowerment also the generation of own knowledge in students and addressing real needs. Currently they are benefiting 162 people who produce their food as well as the experience gained by the students through dealing with housewives in the transmission of technical knowledge and solve real problems. It is concluded on the need to adapt the curriculum to the next level, to allow the approach of the students with the community through the use of areas of opportunity where permitted to supplement the training experience with integration into productive society.

Key words: rural development, orchards, education, empowerment, poverty

1. Introduction

One of the premises that are established in Higher Education in Mexico, is pointing that academic activity it should not be made without considering the social needs and problems of the country, implemented idea Justo Sierra in 1930 [1, 2]. And that to this day has been a pending issue since most of the universities have developed plans where the expertise of the scientific community, can not adapt to the pair of current social development [3-6]. Although curricula are based on the needs expressed by the productive sector. Agronomy areas are an example; since, it is based on many aspects, such as science, technology and arts area, which should be brought to the training process of agronomist [7], Which stipulates that the graduate must be an agent for answers to problems of the environment, mainly into two major categories: Agricultural production and sustainable development of agroecosystems, this leads to the integration of content from the social sciences, natural and techniques. These integration processes should be based on linking the university to social life, to be applied to reality, as well as theories acquired in the university environment, fortifying research that will contribute to social development and of itself college.

Agronomists should have characteristics that will allow them to be promoters of the culture of their profession with a humanist sense, that will provide the tools to convey their knowledge and skills, contributing to society in increasing technical development productivity, these features among others should be: Promoter of sustainable agriculture, versatile, eclectic, witty and easy adaptation to change [5, 8], In addition to the ease of listening to the problems and solutions that the peasant sees, and in turn must provide solutions to what is not.

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The extensionism also involves knowing the environment in which it operates and recognize social problems, technical and ideological to which they may face. The extension has been defined by several authors, as a complex concept that involves various approaches and interpretations. Among the approaches that have been studied are the social, educational, and integrated the transferencista [9], Each contributing knowledge that the agent must promote. Therefore educationally institutions of higher education must take into account in forming an agronomist at the extensionism as a means through which people must remain interconnected, i.e., must accompany the producer knowledge of agricultural technologies, taking into account their own findings and abilities in their work.

Today poverty, malnutrition and lack of development opportunities are factors common to rural areas, therefore, it is due to program makers in the areas of agriculture should consider rural development as a priority in the formation of the graduate . That is why you should look for alternatives, which provide to the agronomist with the necessary tools to promote the improvement of food production and generate economic surpluses in families [10], Considering not only benefit large producers or persons who can acquire technology packages, but anyone who needs to improve their quality of life.

One of the most important aspects to mitigate this problem is based on the generation of multifunctional strategies to help reduce demand and food prices, improve and diversify the diet with natural and healthy products, promoting urban development sustainable and that products obtained follow a process free of pesticides, fertilizers or other chemicals. This strategy is based on urban gardens [11-13] seeking basically meet the main requirements of the urban population hence each of them are feasible to implement in small spaces like eyes patio, walkways, gardens, walls, or in homes that do not have patios or land, but have balconies, or sidewalks and processing is mainly accessible materials (recycled or acquired at very low prices) viable for growing fruit and vegetable species of major social and cultural demand, coupled with this, these cultures are performed under readily transferable principles to people without or with little knowledge in agronomy issues.

The aim of this study was to develop a model of participatory education for comprehensive training of students studying Innovation Agricultural Sustainable of the Instituto Tecnologico Superior de Cosamaloapan, to increase its contribution to rural development through the establishment of home gardens. All these guiding students to sustainable development, while allowing the generation of knowledge and sensitivity required to face the real world.

2. Materials and Methods

This study was conducted during the first half of 2018, and which was used to develop a methodology of participatory research in the community of Ciudad General Miguel Aleman, municipality of Cosamaloapan, Veracruz, a town that does not even appear in the catalog SEDESOL localities [14]. Derived from this, a non-probability sampling was implemented for convenience [15], Because the failure to have a real record, not documented how many people have the community, individuals were taken with homogeneous characteristics (housewives), whereas the selection criteria of the volunteers was that the houses had a space in which to establish cookers for cultivating home gardens. Finally 30 individuals formed the study group, and 5 students in the career of Sustainable Agricultural Innovation of the Higher Technological Institute of Cosamaloapan, who served as extension.

The information sources used were: observation, interview (housewives, students and ejidal commissariat), questionnaires on eating habits and food diversity and brainstorming.

The methodological framework that was applied is based on Participatory Research [16], Following an

approach of participatory action research (PAR), because as quoted Married “favors the acquisition of skills and organization of the groups involved so that they can continue the process themselves and affect areas above (society Local or greater)” [16, 17]. Stages of development were: analysis of reality, identifying common goals, provision and exchange of knowledge, experience and technical execution.

As a tool for processing information obtained from questionnaires SPSS 22.0 software was used, using various statistical tests.

3. Results

The study area was established in the community of Ciudad Miguel Aleman General, municipality of Cosamaloapan, Veracruz, located in the basin of the Papaloapan. The activities carried out were:

3.1 Research, Diagnosis and Strategies to Develop

Through referee body formed by teachers and experts in the field of public policy for rural development (Fig. 1), She was given the task of identifying gaps that exist in the curriculum, in relation to the student approach - producer, responsible for the project developed a series of strategies through which promote the link between the two sectors. Plan which was used to establish through brainstorming, mechanisms to integrate activities with the environment.

This plan established include: sensitization with volunteers, use of peri-urban agriculture established in furnaces, developing seedlings, direct advice to volunteers, overseeing the growth of the crop in each household, besides strengthening through practice of topics seen in the classroom.

Fig. 1 Initial meetings teachers and students.

3.2 Awareness and Seek Common Goals

At first it was called the entire population domiciled through visits and by loudspeakers in the streets of the community, generating voluntary 30 housewives had the initiative to participate in the project. Resorting — separately, as available schedules — sessions awareness installations the Technological Institute Superior of Cosamaloapan, Campus Cd German, where the team consisting of two teachers and five students of the career of Innovation Agricultural Sustainable, showed activities and work plan for carrying out the project. Each volunteer was applied a questionnaire on eating habits and food, the same diversity showed that vegetables and aromatic herbs that are used at home were: serrano chile, cucumber, cilantro, radishes, oregano, lettuce broccoli, cauliflower, potatoes and carrots. The carrot was removed from the list because the crops on which the project focuses are short cycle and carrot has established a cycle of 2 to 3 months, in addition to the pope, the temperature requirements you have.

Along, they settled by the students participating the germination trays containing crop seeds showed increased consumption, same that were grown in pet most, for anchoring the plant and generate plantlets were donated to the participants of the draft. Once they reached a height of 5 to 6 cm were transplanted into vessels gelatin for increased root growth (Fig. 2).

3.3 Construction of Furnaces

The medium was established for the development of the activity was to plant in furnaces, because of the ease that comes with getting building materials [11]. For this I were trained in the same building, also providing them with compost generated by local wits to grow plants without using chemicals. The specifications for the construction of the stove shown in Fig. 3.

Fig. 2 Sowing in germination trays.

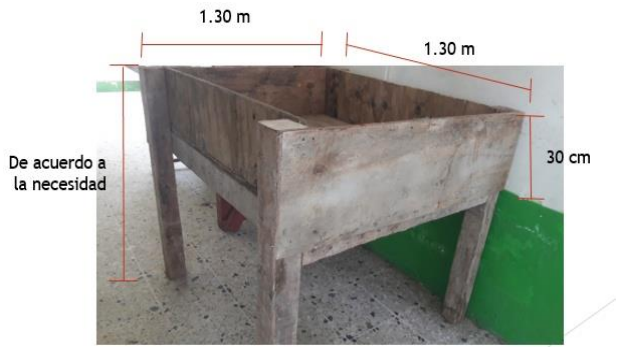

Fig. 3 Requirements of the fire.

3.4 Provision and Exchange of Knowledge, Experiences

In building the stoves in each household, both students and housewives had the opportunity to exchange experiences, which conducive to students to have the role of extensionists explaining and showing, what was learned in the classroom, but in a real environment; meanwhile, housewives are empowered to creating, themselves, an area to provide for their families, receiving good attitude, each of the recommendations issued students based on the activity being carried out (Fig. 4).

Fig. 4 Construction of furnaces.

3.5 Technical Design

Once the plant growth complied with appropriate indicators, these were transplanted into each of the stoves made (Fig. 5). An activity that made housewives under the supervision of students, since the purpose is to generate knowledge on the user, so that they then be able to replicate it at home or with relatives and neighbors interested in the project. Alongside this activity, a schedule of monitoring was conducted by students, to go to the homes to verify the healthy growth of plants, give advice if pest and check cutting and quantity of product obtained by them (Fig. 6).

Fig. 5 Transplanting and planting in stoves.

Fig. 6 Products obtained.

Currently they are benefiting 162 people, divided into families who continue the work already independently and spreading the experience to others in the community.

4. Discussion

Comprehensive and systematic training in the training process skills in students area of agriculture are focused on the same development of the student, from the humanist and extension context, allowing you to train them with reflective thinking, critical and creative; with procedural and attitudinal domain of the social problems facing their environment. The train professionals away from reality, only provides the engineering sector that does not have the ability to solve real problems, or train them according to a program of foreign study rural development, will not solve the problems presented today Mexican countryside in day.

There are ways and methods by which, agronomists can approach the producer — or as in the case of this study housewives — to empower them to generate family support much needed given the national reality. The link between academia and the productive sector is and will be, a key part in solving economic, social and cultural problems arising in the regions with the greatest needs. Continuity of systemic processes between both parties augurs, good formation of a professional agronomist and appropriate proposals for the agricultural sector continues to function as the main productive activity in Mexico.

5. Conclusion

Experience generated from this study shows great interest from students is part of your community, and the need for adaptation is recognized study programs at a higher level, to allow the approach of the students with the community through the use of areas of opportunity where permitted to supplement the training experience with integration into productive society.

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