

RESEARCH -BASED LEARNING (ABI) FOR THE TRAINING OF AGRONOMIST ENGINEERS IN PRODUCTION THROUGH THE ESTABLISHMENT OF A DEMONSTRATIVE PLOT

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Abstract: Currently, the need in the practical training of the agronomist in production is one of the priorities of higher education institutions in the area of agricultural sciences, although the practice is proposed as fundamental and it is directly articulated with the theory, the theory, the Development of this type of activities allows us to reflect on what it is about doing, and therefore theorize about it, therefore, when using the demonstrative plot as a strategy and their learning based on research in the training of human resources in this discipline, allow students to master the knowledge that corresponds to comprehensive training, and to dynamically associate theory and practice, for the development of professional skills. We must not forget that education is praxis. It implies theory-practical and reflection-action.

Keywords: Learning, demonstrative plot, training, agronomist.

INTRODUCTION

Currently the need in the practical training of the agronomist in production is one of the priorities of higher education institutions in the area of agricultural sciences, weak to the fact that the practice linked to the training of professionals is an discussion that dates from Several decades, although the practice is raised as fundamental and it is articulated directly with the theory, the development of this type of activities allows to reflect on what it is about doing, and therefore theorize about it, for the above when using The demonstrative plot or production unit as a strategy in the training of human resources in this discipline, will allow students.

We must not forget that education is praxis. It implies theory-practical and reflection-action. Practice without theory is transformed into activism. Activism has no critical reflection. The theory without practice becomes verbalism.

This work, consists in the integration of five learning units, which are agricultural experimentation, plant physiothe, soil and water management, use and management of pesticides, plant pathology, administration and agricultural accounting, with the purpose that the contents Themes of these learning units are applied in the development of a production unit that will be established by the students, grouped into work teams and which will establish them under the methodology of experimental designs and thus ensure the integration of knowledge into Real case resolution.

Research -based learning (ABI) consists in the application of teaching and learning strategies that are intended to connect research with teaching, which allow the partial or total incorporation of the student in research based on scientific methods, under supervision from teacher.

Research -based teaching refers to the design of the academic program where students need to make intellectual and practical connections between the content and skills declared in the program, and the research and borders of the disciplines that compose it.

GENERAL GOAL

Promote the generation of knowledge in an integral way to the students of the Bachelor of Agricultural Engineer in Production, at the UAEM Zumpango University Center.

SPECIFIC OBJECTIVES

TEACHING

- Establish production modules, under a statistical model (experimental design) that allows students to have an integration and feedback of the knowledge acquired to respond to a given problem.
- Highlight the integration and generation of knowledge from a real

situation (production unit), it will be established based on the participation of teachers responsible for the AU agricultural experimentation, plant physiotechnics, integral soil and water management, use and management of pesticides, plant pathology, as well as administration and agricultural accounting for the construction, feedback and knowledge generation.

- The production obtained from each module is academic and not of commercial production.
- Design necessary safety and hygiene policies in a production module

GOALS

- Make the establishment of a demonstrative plot or production unit with the students of the fifth period of the Bachelor of Agricultural Engineer in Production to design, establish, manage the teaching-learning module from an investigation.
- Train for the establishment of a demonstrative plot or production unit under the methodology of experimental designs.
- Integration of the thematic contents of the Agricultural Experimentation Units, Vegetable Physiotechnics, Comprehensive Soil and Water Management, Use and Management of Pesticides, Plant Pathology, for the development of the demonstrative plot or production unit, applying the methodology of the strategy of the strategy of the strategy Research -based learning.

BACKGROUND

The University as a social institution responsible for preserving, developing and disseminating culture in correspondence with the demands of contemporaneity, has

in its center the training of professionals, as depositories and promoters of the culture and development of the country.

Achieving quality education, with coverage and equity between the sectors of society, as well as between rural and urban areas, remains a yearning and a promise from every country. Obviously agricultural education institutions are not responsible for the crisis nor is it their responsibility to resolve it in all its components, since both education and the fate of the field are strongly subject to a social economic model and a country project. If it corresponds to educational institutions to make a criticism of that model and project, criticism that is exercised through proposals and defense of these.

Currently, higher education institutions have a great challenge that is to strengthen the link with the labor field, which marks the guideline towards the exit profile, where their graduates must have a multidisciplinary vision and their training whose profile is oriented not only to obtain elements and tools that affect the productive part of agriculture, which is basic and important, but in the integral formation that includes knowledge and skills in the field of agribusiness, and skills for the processes of planning, implementation and agro -business administration, Attitudes to give and maintain competitiveness and market relationship in a favorable way, giving a proactive, proactive, creative and committed agronomist with what he does and with whom he does (Niembro and Navarro, 2013).

Therefore, the training of the agronomist regardless of its specialty, must be focused on learning strategies, such as a resource that will allow a resolution of a real case, where it will have the possibility of making an integration of your knowledge acquired Previously, to the new one and build a new knowledge, which will give you the necessary tools to be able to respond to the problem that is presented.

When considering the demonstrative plot as a learning strategy, it has allowed our students to develop skills and skills, which at the time They could not develop.

Because it is necessary to remember research -based learning (ABI) consists in the application of teaching and learning strategies that are intended to connect research with teaching, which allow the partial or total incorporation of the student in an investigation based on scientific methods, under teacher's supervision.

Research -based teaching refers to the design of the academic program where students need to make intellectual and practical connections between the content and skills declared in the program, and the research and borders of the disciplines that compose it.

The demonstrative plot is defined as an area of the farm, managed by the producer, but under the control and orientation of the extensionist. The decision to establish the plot lies more in the interest of the extensionist. In this specific case, the producer is a collaborator of the coach (Priag, 1995).

The tasks of the cultivation and application of techniques are directed by the technician, but are carried out by the producer. Likewise, there is a continuous advice of the researcher to the extensionist, the result of supervisions and support in the field.

The demonstrative plot aims to present to new producers, agricultural and livestock techniques, with better possibilities of results than their own practices. These new techniques have already been proven and validated locally.

The purpose of a demonstrative plot is to show the characteristics, advantages and disadvantages of a new technology regarding producer technology. Through the demonstrative plot, it is about the collaborating producer and other producers, they know how to evaluate and adopt the new

practices. The development of this activity has the orientation and teaching of the researcher and extensionist, as well as the participation of the producer-collaborator and extensionist, which facilitates the comparison of it, with the traditional practices used by the producers of the town. It is expected that, based on the development and results of the plot, the proposed technology will be applied later in a larger area of the producer's farm (Priag, 1995).

The demonstrative plot is useful to inform, motivate and train farmers about technology.

The establishment of the demonstrative plot as a teaching -learning strategy in the formation of agronomists is the transfer of agricultural technology, the implementation of various appropriate techniques that generate the conditions for the growth of crop productivity, such as drip irrigation, Ferti-Irrigation, planting under coverage, solarization, agronomic management and application of phytosanitary products, among others.

For teachers who adopt these technological tools as learning strategies to develop the thematic contents of their learning units, it will allow you to have better academic use of your students and will facilitate their discounts to build their knowledge in an integral and proactive way.

MATERIALS AND METHODS

At the Autonomous University of the State of Mexico, based at the UAEM Zumpango University Center, located in the municipality of Zumpango de Ocampo, State of Mexico, since 1987, the Bachelor of Agronomist in Production was offered, and it was up to 2004 Plans and programs under the competency approach, with the intention of reducing the rates of reprobation, of dropout, as well as the terminal efficiency rate, the students were integrated into work teams, which chose a crop

of interest in common interest in And they established it in the field under a statistical model, in order to recognize the interaction of the factors involved in the growth and development of said crop, and at the same time allowed the knowledge and mastery of the methodologies used in agricultural experimentation, To validate treatments and varieties from the construction of variance analysis and find the most outstanding materials, with the intention of responding to the current problem of each chosen crop.

OBTAINED RESULTS

The results obtained in the establishment of the demonstrative plots of the students in the fifth period of the Bachelor's Degree of Agricultural Engineer in Production, the following crops were established: Open Heaven Corn, where the following hybrids are being evaluated, H70, H74, H40, H40, H161, to find differences in performance, is in its development phase. Pumpkin production under greenhouse conditions, with the purpose of evaluating response to 3 leaf fertilizers and is in its seedling phase of the seedling; Lettuce production under microtour conditions, where your response to use 3 growth stimulators to determine yield and finally malfaid production under three open -air sowing systems based on their performance is proven, the crop is in phase Of development, all works are at 45% advance as shown in the following figures:



Figure Number 1: Demonstrative corn plot

Source: José Luis Gutiérrez Liñán, Centro Universitario UAEM Zumpango, 2016



Number 2 Figure: lettuce production

Source: José Luis Gutiérrez Liñán, Centro Universitario UAEM Zumpango, 2016



Figure Number 3: Pumpkin production under greenhouse conditions

Source: José Luis Gutiérrez Liñán, Centro Universitario UAEM Zumpango, 2016



Figure Number 4: Maltera barley production

Source: José Luis Gutiérrez Liñán, Centro Universitario UAEM Zumpango, 2016

This type of strategies focuses on learning, so the student is the center of the action, and the teacher is just a strategic coordinator of the activities. The strategy is not an end, but a means for the discates to develop collective capabilities for solving problems, being innovative in the search for alternatives based on observation, experimentation, discovery, analysis and group discussion, synthesis and decision -making, always based on their needs and conditions of the environment where they develop (Pezo et.al.2007).

This methodology involves breaking teaching/learning paradigms in students' behavior. It is an opportunity to share technical-scientific knowledge and those that constitute knowledge (Pezo et.al.2007), generated from their stay in anterior semesters. In addition, this strategy encourages students' interest in experimentation, as input for the decision -making process.

CONCLUSIONS

- The importance of generating productive integration spaces where students can carry out professional practices with the accompaniment of teachers in the framework of a comprehensive project is highlighted.
- The particularity of considering the demonstrative plot as a didactic strategy

in the formation of agronomist engineers in production generates a productive space for teaching and linking purposes.

- It allows teamwork and appreciates the assessment of participation in a productive environment and the performance of skills where it is necessary to integrate the theoretical and practical concepts for the resolution of cases.
- With the use of the demonstrative plot as a didactic strategy, it allows to be a motivating tool for the formation of future agronomist engineers.

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