

Extreme Agricultural Mechanics Makeover

Introduction

Phipps (1980) indicated that one of the goals in agricultural mechanics instruction is the development of psychomotor skills. Without adequate teaching materials, students are limited in their mastery of these skills. The seriousness of inadequate resources is well documented throughout the educational system. Niemann (1970, as cited in Veenman, 1984) indicated that inadequate facilities and equipment were two of the major areas of dissatisfaction among secondary teachers. In order to reduce teacher frustration, the Extreme Agricultural Mechanics Makeover was developed to assist a new teacher jumpstart the rebuilding process.

How it Works

The extreme agricultural mechanics makeover is a community service project that focused on assisting a beginning agricultural education teacher whom inherited an agricultural mechanics laboratory that has been decimated by years of neglect. The [State] University Agricultural Education Club provided the funding for advertising, selected the winning school, and provided the manpower the day of the makeover. The students enrolled in the methods of teaching agricultural mechanics course dedicated one hour each week in class planning the makeover. The class started by narrowing the applications down to three finalists for the club to choose from. Once the winning school was identified the class reviewed the application and broke into content teams based on the curriculum areas that the teacher had hoped to teach. The students then visited the winning school where each team conducted a local needs assessment by interviewing the secondary students, the teacher, the industrial technology teacher, the administrators and a school board member.

The teams developed a list of tools, equipment and other supporting materials needed to teach the content areas that emerged from the needs assessment. Each team was responsible for identifying the companies that manufactured the items that emerged from the needs assessment. The teams then contacted those companies to inform them of the makeover and determined the company's interest in developing a partnership. The students then secured donated items that were stored in a semi-trailer that was loaned to the institution from the local community college for use until the day of the makeover. The local community college even provided the transportation of the trailer to the winning school. On the day of the makeover the students enrolled in the class and members of the club along with several graduate students and faculty members assisted in setting up and installing all of the items donated.

Table 1. Step by Step Guide on Implementing an Agricultural Mechanics Makeover

Steps	Actions	Responsibility
Step 1	Develop program description, guidelines, and application	Instructor and Students
Step 2	Develop advertisement fliers and promotional video to be distributed at [STATE] FFA Convention	Club
Step 3	Distribute the Call for Applications and Applications to [STATE] Agricultural Education Teachers Via E-mail	Course Instructor
Step 4	Review applications and determine the makeover recipient	Students/Club
Step 5	Students divide into curriculum teams based on the content areas intended to teach as identified in the application	Students
Step 6	Tour the winning school to determine the laboratory layout and interview the teacher, students, & administrators to determine local needs	Students
Step 7	Students determine the tools, equipment, and other items needed to successfully teach the content area they are responsible for.	Students
Step 8	Students contact industry representatives to develop partnerships to assist with the makeover. Instructor followed up with any representative that had additional questions.	Students
Step 9	Students collect donated tool, equipment, safety apparatuses and curriculum from industry partners	Students
Step 10	Laboratory, Classroom & Equipment Set up	All volunteers

Results/Future Plans/ Advice to Others

The Extreme Agricultural Mechanics Makeover was highly successful in revitalizing an agricultural mechanics laboratory that had no tools or equipment available to teach any hands-on activities. In total, the students had collected over \$120,000 in tools, equipment, textbooks, and safety apparatuses for the makeover. We intend to replicate this project on a semi-annual basis; the decision to not complete the project on an annual basis was due to the time commitment required for the course instructor to ensure the project was successful and to relieve the financial commitment from industry sponsors. The instructor highly recommends working with the students to develop a sales pitch prior to sending them out to meet with industry representatives. It is also extremely important to collect the items that have been verbally agreed upon as soon as possible. Waiting to collect items closer to the makeover date

gives industry time to forget and/or change their mind on the donations. The instructor also recommends setting this project up as a special topics course that is independent from the agricultural mechanics methods course. This will allow the students to spend more instructional time on agricultural mechanics coursework in the methods course. This will also remove the students that had no interest in the project and provided little to no assistance to their group. The instructor also recommends working with your institution to offer service learning credits if available. This project can be replicated to fit the needs of other agricultural education laboratories as well, such as a greenhouse or an animal science facility.

Costs/Resources Needed

Costs associated with this project to the department were minimal. The Agricultural Education Club covered the advertising costs associated with the makeover. The fliers, applications, and video production cost approximately \$300. The winning school had to commit \$10,000 in matching funds if they were selected. These funds were used to cover capital improvements and infrastructure costs. This included items like running new electrical outlets, reconditioning the concrete floor, removing an old gas line that was connected to an old kiln that was no longer functional, and tank rentals for the welder cylinders. Any funds left over after the capital improvements were completed was used to purchase additional teaching materials that were needed such as tool kits for the small engines that were donated by Briggs and Stratton.

References

Niemann, H.J. 1970. *Der Lehrer und sein Beruf* Weinheim: Beltz.

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Veenman, S. 1984. Perceived problems of beginning teachers. *Review of Educational Research*, 54(2): 143-178. <http://www.jstor.org/stable/1170301>.

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