

A Guide to Raising Pheasants

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Abstract

The purpose of this study was to aid in the implementation and utilization of an experiential learning lab in the form of a pheasant facility on the Cal Poly Campus.

A pheasant facility and enterprise at the Cal Poly, San Luis Obispo Animal Science Unit would be the perfect hands on learning device that can really epitomize the motto, "Learn By Doing". The enterprise projects have long been an integral component of the Agricultural Education and Communication curriculum and many students have gained the critical management skills necessary to be competitive in production and allied industries- including teaching.

A set of questions were developed to find the topics of importance needed to construct a pheasant unit. Upon return of the results, a guide was formed with the information and it will be used in classrooms, both at the high school level and collegiate level. The guide is also available and useful for those entrepreneurs looking for a backyard hobby or a niche market to cater to the hunting communities.

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Chapter One

Introduction

Agricultural education is a vital part of both the agricultural and animal agriculture industries. Opportunity for agricultural enterprises at California Polytechnic State University strive to “strengthen their students’ agricultural studies, while at the same time, provide a knowledge and skill that can lead to a fuller understanding and appreciation of important production managerial and marketing challenges in agriculture. In addition to the knowledge and experiences gained by conducting an enterprise, the majority of students also earn money for their college education” (Kellogg). At Cal Poly, the motto, “Learn by Doing” really is emphasized by the enterprise projects offered. “Agricultural education has always had a strong orientation toward learning by doing, or experiential learning” (Zilbert & Leske, 1989, p.1). The learning by doing theory emphasized in an agricultural education program offers students the opportunity to utilize principles learned in class and apply them in life situations through enterprise projects (Cheek et al., 1990). However, experiential education is not just simply learning by doing (Proudman, 1992). The experiential learning activities must be structured correctly in order to strengthen the link between cognitive learning and life skills (Wulff-Risner & Stewart, 1997). This type of enterprise provides students a connection to a concrete experience, providing opportunity through a pheasant project.

A pheasant facility and enterprise at the Cal Poly, San Luis Obispo Animal Science Unit would be the perfect hands on learning device that can really epitomize their motto, “Learn By Doing”. The enterprise projects have long been an integral component of the Agricultural Education and Communication curriculum and many students have gained the critical

management skills necessary to be competitive in production and allied industries, including teaching.

Statement of the Problem

Cal Poly, San Luis Obispo already has a working and functional poultry unit; it just lacks the diversity for the classroom environment. The only enterprises offered are those relating to chickens and quail, but upon further research, a request for a pheasantry was placed. A pheasant facility on campus would be financially supported through the sales to local gun clubs, and it will be utilized for laboratory instruction. The students will gain a better understanding and a working knowledge of the avian industry which will be beneficial to all that are enrolled in a course.

Importance

This project helps to expand the Cal Poly Animal Science Enterprise program and the opportunities it can provide for laboratory use and classroom instruction as well as more ways for experiential learning to take place on campus.

Purpose

The purpose of this study was to aid in the implementation and utilization of an experiential learning lab in the form of a pheasant facility on the Cal Poly Campus.

Objectives

1. To create a proposal for a pheasant facility that could be utilized by Cal Poly Animal Science Department.
 - a. Develop an appropriate plan for the space and flight pens necessary.

2. To present proposal and gain approval to build pheasant facility at Cal Poly through the Animal Science Department.
3. To build a pheasant facility at Cal Poly
 - a. Acquire necessary materials and equipment donated for the project.
4. To have several breeder pheasants in the facility.
 - a. Get pheasants donated from well known and reliable hatcheries and breeders.
5. To distribute a guide to raising and breeding pheasants to the Animal Science Department so the enterprise can be successful.
 - a. Compile materials appropriate for pheasant production including materials on care, breeding and general husbandry.

Definition of Important Terms

- Enterprise Project- an enterprise project provides students agricultural knowledge and skill that can lead to a fuller understanding and appreciation of important production managerial and marketing challenges in agriculture. Also, the knowledge and experiences gained while conducting an enterprise will offer the majority of the students' money for their college education.
- Pheasant facility- a housing situation designed for the raising of pheasants at any stage of life.

Summary

Cal Poly's University wide motto, "Learn By Doing", is a great hands on approach to education. By implementing a pheasant facility on campus students can gain a better knowledge of the avian industry. It needs better opportunities for experiential learning, and faculty members have expressed the need for a learning laboratory on campus.

This project will not only benefit the Cal Poly Animal Science Department, but it will allow a source of income to be gained by the Poultry Unit Facility as well. It will also benefit the local gun and hunting clubs by providing a closer source of pheasants to be used at their facilities. The students will also gain many benefits from this project, such as, a well rounded knowledge on more than just chickens, monetary gain, and hands on experience that teaches responsibility, management and marketing skills that can be beneficial to them in future careers.

The final outcome of this project is to have a functioning pheasantry with breeding stock to allow the Cal Poly Animal Science Department to begin their pheasant enterprise.

Chapter Two

Review of Literature

Enterprise Projects at Cal Poly

Students at Cal Poly have a unique opportunity to experience hands on learning through agricultural enterprises. These projects have long been an integral component of the College of Agricultural Food and Environmental Sciences curriculum, and many students have gained the critical management skills necessary to be competitive in production and allied industries- including teaching (Kellogg). Currently there are over 23 Enterprise projects available to Cal Poly students to take advantage of, yet only 5 of those are offered at the poultry unit. Based on student interest, community need, and faculty support, a number of Enterprise projects have been implemented by students, the quail enterprise is an example of this. A students' senior project was to begin a quail operation, to breed, hatch, raise and sell quail for a local falconer. The pheasantry would be similar to the quail operation, meaning students will breed, hatch raise and sell the pheasants to local gun and hunting clubs to complete a production cycle and to earn a profit for the pheasantry to sustain on its own. This is just one example of a successful student implemented enterprise project. Hands on activities have been found to lead to a better understanding of subject concepts and provide concrete critical thinking and problem solving behaviors (Mabie & Baker, 1996). All of the enterprise projects on the Cal Poly Campus have a certain degree of subject matter that must be completed in the classroom before the end of the quarter. The use of experiential learning laboratories is only to help solidify the concepts taught in the classroom and to extend or enhance student learning.

Experiential Learning

Experiential Education requires students to make meaning out of his or her experiences, promoting the transformation of “raw” experiences into usable knowledge (Katula & Threnhauser, 1999). The principle of experiential learning is based on the notion that a richer, more comprehensive and accessible knowledge arises from greater involvement with the subject matter. Experiential learning opportunities allow students to integrate knowledge from the classroom and encourage them to think at a more complex level through analysis and synthesis (Royse, 2001).

The definition of experiential learning depends solely upon the student and the amount of effort they are going to put into their experience. “Experiential education refers to learning activities that involve the learner directly in the phenomena being studied. The nature of the involvement is direct and purposeful, addressing a real world problem in a natural setting” (Zurbrick, 1990, p. 3). Experiential learning has both cognitive and motivational goals. Educators hope that abstract concepts will become meaningful when students see that they are helpful in describing and understanding “real life” phenomena (McKeachie, 2002 p.246). The goal is the experiences the students gain while participating in the hands on lab, will stir up questions that will ultimately promote active learning. Student driven inquiry will help shape lecture and be evident in a students’ lab report.

Supervising experiential learning requires a balance between student independence and teacher control. As an educator, students must be provided with the freedom to learn from the mistakes they make, but guided in order to stay on track with time restraints. “Experiential learning, whether in community service or research, can be a powerful tool for enhancing both motivation

and learning. But to be effective it requires careful planning, guidance and evaluation”
(McKeachie, 2002, p. 249).

Kolb’s Model

The learning model that serves as a guide for this project is Kolb’s Theory of Experiential Learning (1984). Kolb incorporated concepts from several philosophers who studied teaching and learning in education, including John Dewey, Kurt Lewin and Jean Piaget, into his theory. He collected information from the three theorists and then synthesized the existing theories from each of the researchers to develop a four component system to apply to experiential learning: Concrete experience, reflective observation, abstract conceptualization and active experimentation (see Figure 1).

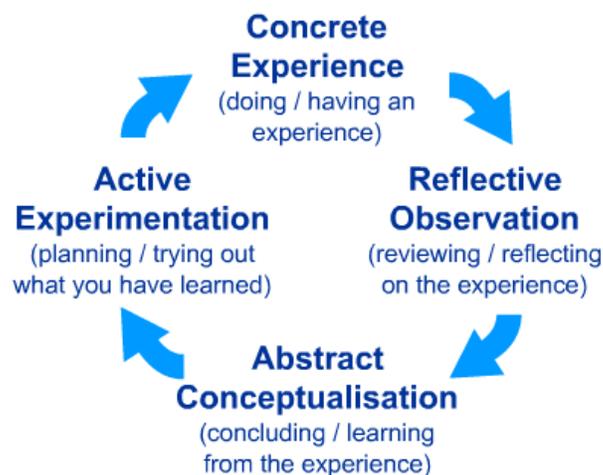


Figure 1. Kolb’s Model of Experiential Learning

The concrete experience is described as the “here and now experience used to validate and test abstract concepts and provide a focal point for learning and a reference point for testing the implications and validity of ideas created during the learning process” (Kolb 1984, p.21)

Concrete experiences would be related to the actual raising of a pheasant, physically taking the bird from day of hatch to day of harvest. This model forces a non teacher centered environment, but a student driven classroom. The educator is simply the guiding force of the lab or activity, encouraging students to experiment with new and innovative ways to achieve results. The reflective observation component encourages students to critically examine a concrete experience (Zilbert & Leske, 1989). This reflection period forces students to take responsibility for their own learning and engages the learner mentally and emotionally in the recent experience (Proudman, 1992). The use of abstract conceptualization allows students to make generalizations about principles related to the experience and strive for improvement. Meaning that the student must see what worked and what needs to be changed for greater success with the next bird. What do the students know? Are they applying principles related to pheasant production? These are questions evaluated in this section of the model. The final stage, active experimentation, requires the transfer and application of principles to a new situation. Questions such as: “Did the feeding of pure corn help or hinder the growth of the animal, or did it not affect growth at all?” are evaluated at this stage and used to better understand whether the experiment was useful. In order for this model to be implemented successfully, it is the responsibility of the teacher to create meaningful, engaging, lasting, effective experiences for all students.

Chapter Three

Methods

The purpose of this study is to aid in the implementation and utilization of an experiential learning lab in the form of a pheasant facility on the Cal Poly, San Luis Obispo Campus.

Contact People (Key and Important Contacts)

- Steve Soderstrom
 - Steve serves Cal Poly as the Poultry Unit Faculty Manager. He runs all the day to day duties, such as ordering, placement and shipping of eggs, caring for the houses/barns, helping with the Graduate Students and oversees the Enterprise Projects.
 - After being asked by Steve to implement the pheasantry, but after that little communication has occurred, because of time restraints with his job.
- Dr. Brooke Humphrey
 - Dr. Humphrey is the Cal Poly Professor in charge of all the Graduate Students and their work. He manages the research birds, broiler birds and quail enterprises. He teaches several courses in Poultry Science and utilizes hands-on learning for most of his classes.

- There was contact with Dr. Humphrey at the start of this project, since then communication has seized
- Marlies Boyd
 - Mrs. Boyd is an instructor at Modesto Junior College. She manages the Poultry Unit at their West Campus facility. She has many years of pheasant experience being raised on her father's gun club, and overseeing the Pheasant project at MJC. She has an immense amount of knowledge on the industry therefore she will be very useful for this project.
 - Several emails and phone calls have been made in the past, but gaining the information needed that was relevant to this project was unsuccessful.
- Mr. Beck
 - This instructor raises pheasants at his home and at the Bret Harte High School Farm Facility. He uses the pheasants as a training tool for his students and also as a hands on learning tool in his classroom.
 - Still awaiting the phone contact information for Mr. Beck from Marlies Boyd.
- Foster Farms
 - This contact needs to be kept handy because they are the main supporters of the Cal Poly Poultry unit and if they say the pheasant unit is too close to their birds, we must move for bio-security purposes.

- An email was sent out on April 27, 2009, and another on May 15, 2009.
Still awaiting feedback from them.
- Dr. Andy Thulin
 - Ultimately he is the deciding factor on this project. As head of the Animal Science department at Cal Poly he must delegate out the supervision and the monies for the department.
 - No contact has been made with Dr. Thulin as of yet.

College of Agriculture Administrative Approval Process

Gaining administrative approval on an enterprise project will take several steps. You must start at the very beginning, the bottom, and work your way up. You must approach the problem at the head, or the source and slowly unwind the knots. In this case, the first knot would be to decide why there was a need for a pheasantry, and what the benefits would be. After establishing these, expanding and elaborating on this project is necessary. Once the factors have been decided on, the process of working up the ladder for approval may begin; starting at the bottom with Mr. Soderstrom, the Cal Poly Poultry Unit Faculty Manager. After his approval, moving on to Dr. Humphrey will be the next step. Thirdly approval from the “supervisors” of the Poultry Unit Facility, Foster Farms is necessary. The distances and the regulations for mixing breeds and species of avian animals must be established. Moving up the ladder, lastly gaining approval from Dr. Andy Thulin, the Head of the Animal Science Department.

Facilities/Supplies/Materials

These are the factors that make up any successful pheasant unit. From hands on experience with the Modesto Junior College Pheasant Unit, the following characteristics are the necessities to making a profit. Although this pheasant unit is going to be much larger than the MJC unit, it still has the same general characteristics. The specific numbers and regulations were found at the Pheasants Forever Organization website (<http://www.pheasantsforever.org>).

- Birds
 - One male per seven females
 - 160 birds translates out to 140 females and 20 males
- Pens
 - 25 square feet per bird, when in doubt, build larger
 - An estimated 4000 square feet to build the correct size flight pens.
 - Since it is only one male to every seven females, 20 flight pens will need to be constructed, or males will need to have blinders put in place.
- Cost
 - Chicks from Macfarlane Pheasants, Inc. run about \$1.80 per bird when you order 100+ Chinese ringnecks at a time.
(http://www.pheasant.com/page.aspx?page_id=37)
 - The total cost will be around \$288.

Location (Logistics)

In order to identify a possible location for the facility, approval was required. Approval from Foster Farms and from the Animal Science department regarding regulations and possible options for facility construction is still in transit. Some locations have been discussed such as:

- Cal Poly Nutrition Center
- Top of Stenner Creek Road
- The strip of land off of Bishops Peak Road
- Sheep Unit, Beef Cattle Evaluation Center, Dairy Unit and Equine Unit.

The possibility of housing this enterprise on the Cal Poly Poultry Unit Facility is very small. Diseases from the pheasants cannot mix with the diseases from chickens and quail. Since pheasants are an outdoor raised bird, they cannot house them close to the other birds, even though the chickens and quail are inside a barn. As long as it meets regulation standards this facility will be built.

Chapter Four

Results and Summary of Results

All first hand accounts were included in the manual, but interviews and questionnaires were not returned or answered. Several phone calls and emails were made to key people vital to the completion of the project. With lack of information from industry representatives and administrative feedback, the project was modified to encompass a vast array of sites, not specific to Cal Poly. The internet research conducted was very successful and results are included below.

Results

This instruction manual is designed to help an agriculture instructor develop a pheasantry for experiential learning. It outlines the steps necessary for a successful learning laboratory including where to start, advantages of having a pheasantry, the materials, planning and construction, and of course, the most important part, your birds. It is the intent and purpose of this manual to assist any agriculture program or agriculturalist in the construction for a fully functioning pheasantry operation.

Where to Start

Just like any operation, a pheasantry takes time to develop. An idea of the size and scope of the project or a plan of action is critical to development. When determining the size of an operation several details need to be taken into account.

- The purpose of the pheasantry
 - A small business to sell to local hunters

- A learning tool for a school or 4-H group
 - A backyard hobby
 - Breeding operation
- The amount of land
 - The budget
 - Amount of time needed to care for birds
 - (Which will determine how many birds or eggs should be purchased)

Where to Go From Here

Choosing the right type of operation is very important early on because it will dictate the scope and the outcome of the operation. There are several breeders that will sell chicks at day old prices, and even some that will sell full grown breeding birds. Visit Murray McMurray Hatcheries and Macfarlane Pheasants, Inc., they both will sell chicks at great prices and are pretty hardy. Both of these breeders are reliable sources that will sell good quality birds, and if you have any further questions, you can call to get help.

Breeding

Pheasants are seasonal breeders. The roosters begin strutting and breeding when the days become longer, usually toward the end of March. Roosters will also fight one another to establish dominance. To ensure the safety of birds, each pen you should have no more than two males, with eight to ten hens per rooster. Hens will lay eggs from the middle of April through June. One hen can provide up to 15 eggs per season if eggs are collected daily, which is highly recommended. Hens will always lay eggs in the same spot, whether a hole in the dirt or a nest from straw or hay, so provide some sort of nesting materials in each pen.

Incubators

Pheasant hens are quite capable of incubating, brooding and raising young pheasants. However, it is generally advisable to either buy day-old pheasant chicks or hatch them in an incubator.

Allowing the hens to hatch the eggs in confinement generally results in excessive losses of eggs, chicks and hens. The simplest machines provide constant heat for eggs, while such things as turning and maintaining humidity must be done manually. More expensive and complicated incubators regulate these on their own.

Pheasant eggs should be collected daily. Incubation should begin before eggs are 11 days old, since fertility begins to drop as eggs get older. Eggs that are stored should be turned twice a day to avoid hatching weak chicks. Eggs should not be stored in places over 50°F. Humidity in the incubator should be between 45% and 50% and the temperature should be 95° F. Ringneck pheasants will begin hatching after 24 and a half days.

Brooding

Once all the pheasant chicks have hatched, they should be kept in the incubator until they are completely dry. The chicks should not be fed during this period because they are absorbing the remainder of the yolk sac. Providing food to the chicks before the yolk sac is digested may cause intestinal disorders later in life.

The maximum temperature at ground level under the brooder (or heater) for day-old chicks should be no more than 105° F. The type of brooder to use depends on the number of chicks. For 50 chicks or less, an infrared heat lamp is appropriate. If more than 50 chicks are in the brooder, more than one heat lamp will be needed.

Pheasant diseases are most easily spread through dirty feeding and watering equipment.

Cleaning the feeders and waterers with boiling water once a day, is recommended. The feeders should be thoroughly dry before filling again. Small rocks should be placed in the waterers to prevent the chicks from drowning in the water.

A chick guard should be placed around the brooding area for the first 3 to 4 days. A chick guard is simply cardboard, two to three feet tall, which is used to keep the chicks near food, water and the brooder. After the first week chicks can be let outdoors on warm, sunny afternoons. If the buildings don't allow access to the outdoors on sunny days, putting green branches and weeds in their pen will decrease the occurrence of cannibalism. Provided the weather is not unusually cold, the birds can begin to be placed in outdoor pens called flight pens at 5 to 6 weeks of age.

Feeding Adults and Chicks

After one day of age, chicks should be allowed access to game bird chick starter. The feed must be a game bird starter, since chicken starters do not have the correct nutrients for young pheasants. After the chicks are one week old they can be started on game bird grower.

Depending on the mixture of the feed, game bird grower may be sufficient feed until the birds reach full maturity around four months.

The chicks will require 0.5 to 1 pound of starter, which is a one-week supply, and about 10 pounds of grower, a 15-week supply, to reach mature size. Mature size for hens and roosters is 4.5 and 5.5 pounds, respectively. Grit should be placed in the feed every four days, until the chicks are placed in the flight pens.

An adult pheasant will require about 5 to 6 pounds of feed per month to maintain the correct body condition. Beginning about three weeks before egg laying begins, the hens should be fed a higher quality laying ration. This ration should be fed throughout the laying season.

Buildings, Facilities and Equipment

If the birds will be naturally breeding, your chicks need to be housed in some type of building until 5 to 6 weeks of age. The chicks can be kept in buildings that allow 4 to 5 square feet per chick. Chicken brooder houses or coops work excellent for young pheasants. An incubator will be a necessity as well if you plan on breeding your birds. Other equipment needed for pheasants includes brooders, feeders, water fountains and fencing materials.

Adult pheasants in confinement generally can be kept in flight pens year round depending on your climate. Having access to a building to provide shelter during extreme heat and cold is advised. Pheasants are relatively hardy game birds and can withstand cold temperatures if well fed and protected from the wind.

The flight pens are where the birds will spend the majority of the year. They should be 6 to 7 feet high and 15 to 20 feet wide with nylon netting over the top. Chicken wire with 1-inch spacing is satisfactory for the sidewalls. The bottom of the chicken wire should be buried 6 inches to 1 foot underground to prevent it from being pushed out and to discourage predators from burrowing under the wire. If chicks younger than 10 days old are allowed in the flight pens, a solid border should be placed along the bottom 10 inches of the fence, as these chicks can squeeze through the 1-inch chicken wire. It is also recommended to place a hot wire around the outside perimeter of the entire pheasantry about 3 inches from the ground to ensure that predators are kept out and your birds will stay safe.

Flight pens should provide shade by placing branches and shrubs on the nylon roof netting. The flight pens should also provide an adequate amount of cover to allow the birds "hiding" places. The hiding places are useful for several reasons. If the birds have enough cover to hide or get away from other birds, there will be less cannibalism. Also, the birds will panic less and injuries will be reduced. If the pheasants are being kept for breeding purposes, the addition of straw bales will provide suitable nesting areas from which eggs can be collected.

Scope

Choosing a learning lab will yield very rewarding outcomes. It will be useful in the classroom because it is hands on learning, and you can turn it into an enterprise project where students will learn responsibility, management (both monetary and time) and record keeping. Having a learning lab on site makes it convenient for the teacher because he/she can plan lessons around the cycle of the breeding stock. It is also a useful resource for teaching feed-stuffs and the nutrition quality of each feed type. An enterprise project can help students learn life lessons, like business skills and advertising experience. Using this enterprise project to provide the hunting community with quality game birds can be used as a profitable business. There is always a demand for birds that can be utilized for hunting dog training. This can be viewed in several ways, but to a high school student raising these birds, all they are seeing is dollar signs.

Summary of Results

The results found were primarily based on internet research. No expert opinions or questionnaires were completed or returned. The phone calls and other forms of communication were unsuccessful, but the first hand experiences are the points presented. The statement of the

problem, or the purpose of the project, was accepted, but not completed. The original purpose is stated below.

Cal Poly, San Luis Obispo already has a working and functional poultry unit; they just lack the diversity for the classroom environment. The only enterprises offered are those relating to chickens and quail, but upon further research, a request for a pheasantry was placed. A pheasant facility on campus would be financially supported through the sales to local gun clubs, and it will be utilized for laboratory instruction. The students will gain a better understanding and a working knowledge of the avian industry, which will be beneficial to all that are enrolled in a course.

The project has been revised to better encompass a vast array of facilities, not just specific to Cal Poly. Now all persons, from high school instructors and students to the backyard entrepreneur, can construct and be successful with their own pheasantry.

Chapter Five

Conclusions and Recommendations

Conclusions

Based on the findings, a pheasantry unit is not what most educators recommend for their classrooms as a teaching tool. Those instructors in the poultry industry were rather excited about the opportunity to have a guide to make it more accessible for them to construct a facility. But outside of the industry, most educators were less interested in poultry and avian practices. This is why it is important to make instructors aware of the importance of niche markets such as pheasant and game birds. If asked to do this project again, the topic would definitely be a broader subject because of the lack of information on pheasants in California. Making your topic broader and more general, like game birds per say, would make finding information and research much more accessible. Constructing the pheasantry versus just forming an informational pamphlet to guide other educators would have been a better opportunity to learn more about the project.

Recommendations

To get information from industry representatives is very difficult because you are on their schedule and by no means are you on the top of their priority list. It was found that once you have called and left a message, call again the following day to ensure they received the message. Even though this plan did not work so well, in the future it might prove to be better. Having faith that in time gathering information from the key people needed to complete this guide thoroughly will happen. Patience is a virtue, and working with busy industry workers and representatives is never an easy task. But with patience, all things are possible.

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Appendix A

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