# EXPERIENTIAL LEARNING IN SECONDARY AGRICULTURAL EDUCATION CLASSROOMS

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## Abstract

*The purpose of this qualitative study was to examine the use of experiential learning in secondary agricultural education classrooms. Interviews were conducted with four agricultural education teachers to determine their knowledge and familiarity with experiential learning, use of The Kolb Model of Experiential Learning in their classrooms, and their self-perceived role when using experiential learning in an agricultural education classroom. Additionally, teacher-perceived benefits and challenges posed by the use of experiential learning in the agricultural education classroom were identified. The findings suggested that the teachers lacked formal prior knowledge about experiential learning. However, phases of experiential learning were implemented in agricultural education courses, but did not always follow the cyclical process illustrated in Kolb's model. Teachers perceived their role in the experiential learning process as a guide, or facilitator of learning. The teachers recognized multiple benefits of experiential learning including increased subject matter retention among students, active engagement, use of higher order thinking skills, and academic success. The challenges of experiential learning were class enrollment, time, supervision and management of student activities, modifications in teaching style, and maturity level of students.*

## Introduction

As agricultural education broadens its scope and mission, educators must recognize and employ successful and meaningful teaching and learning strategies within their classrooms. Research and empirical evidence identifies this transition into a new era and strongly supports the benefits of experiential learning in agricultural education (Cheek, Arrington, Carter, & Randell, 1990; Camp, Clarke, & Fallon, 2000). Zubrick (1990) states, "…it is not only logical but crucial that the profession rethink and renovate the concept of experiential education as practiced in agricultural education" (p.3).

"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 real life situations (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).

The definition of experiential education is dependent upon each person and each situation. "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). Dewey (1938) believed that all true learning is based on experiences, and in order to continue learning, one must continually question and evaluate their own experiences. Experiential approaches are not a defined set of activities or restricted to specific goals. This freedom in learning allows for student exploration and the outcomes can be unpredictable and limitless. Experiential learning focuses on the application of classroom instruction, encourages students to be actively engaged in their own learning, and connects prior knowledge to new knowledge. The students must learn to use their minds and explore learning for themselves (Chapman, 1992).

The teacher is an essential element to successful experiential learning. Agriculture educators must assume new roles in the classroom and encourage student interaction with their environment to improve learning and comprehension. The application of classroom knowledge in the context of "real world" situations should be the focus for learning. Hands-on activities lead to a better understanding of subject concepts and provide concrete critical thinking and problem solving behaviors (Mabie & Baker, 1996). If the teacher carries out these roles properly, students will accomplish more than they ever could on their own.

To what extent is learning by doing being used by high school agriscience teachers? This study used qualitative methods to gain an understanding of experiential learning in secondary agricultural education programs. The intent was to examine how experience is being created, utilized, and applied in various educational settings by secondary agricultural education teachers.

## Theoretical Framework

Theoretical models provide a guide for a better understanding of problems facing

educators. However, models must be current with reality and address the needs of students and teachers (Dyer & Osborne, 1996). The theoretical framework guiding this study 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 believed that experiential learning was a "holistic integrative perspective on learning that combines experience, perception, cognition, and behavior" and could be applied to any educational setting (p.21).

From the collaboration of the three theorist perspectives, Kolb developed four components of the experiential learning cycle: concrete experience, reflective observation, abstract conceptualization, and active experimentation (see Figure 1).

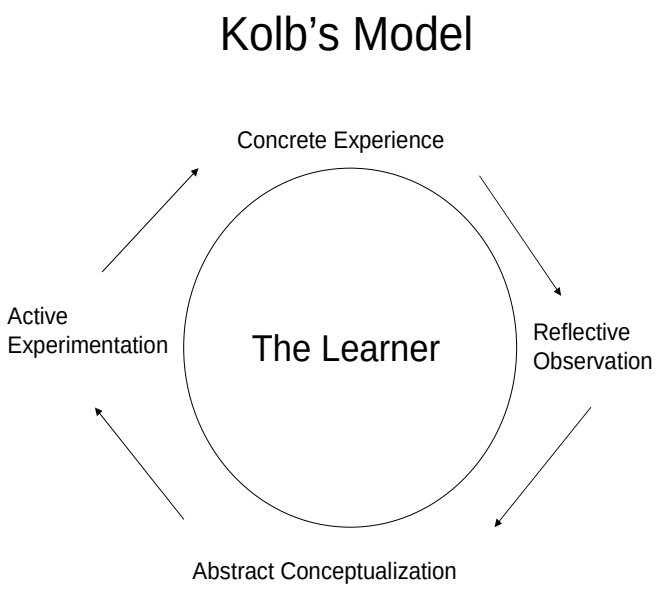


*Figure 1.* Kolb's Model of Experiential Learning

The concrete experience is described as a "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 allow for personal application, understanding, and meaning of abstract principles. In this model, the classroom is not a teacher-centered environment; instead, it is primarily student-driven. The teacher is seen as an agent assisting students in educational experiences and making connections between prior knowledge and new learning. 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. The final stage, active experimentation, requires the transfer and application of principles to a new situation. Students must be allowed the opportunity to apply the new knowledge and test for validity and usefulness.

In order for this model to be successfully implemented, teachers must adequately prepare students to use the required skills of observation, reflection, conceptualization, evaluation, and experimentation that enable them to learn most effectively from their experiences. In addition, teachers must understand that all experiences are not educational, only quality experiences. Therefore, it is the responsibility of the teacher to create meaningful, engaging, lasting, effective experiences for all students.

## Purpose and Objectives

The purpose of this investigation was to explore the use of experiential learning in agricultural education classrooms. The objectives of this study were to:

1. Determine agriculture teacher's knowledge and familiarity with experiential learning in a secondary agriculture classroom.
2. Describe how agriculture teachers use The Kolb Model of Experiential Learning in their classrooms.
3. Determine the self-perceived role of the teacher when using experiential learning in an agricultural education classroom.
4. Explain the teacher-perceived benefits and/or challenges posed by the use of experiential learning in the agricultural education classroom.

## Methods and Procedures

### *Researcher Subjectivity*

A qualitative researcher is never separate from the study (Lincoln & Guba, 1985). Multiple influences that a researcher may impose on a study include personal background, experiences, and education. Therefore, it is only appropriate that the researcher explains personal perspectives that may influence the study and offer a context for readers. Interest in pursuing this particular topic resulted from former experiences as secondary agricultural education teachers. As the researchers reflected upon teaching methods employed in classroom settings, the application of experiential learning was a common process utilized to improve learning. Allowing students to gain experience through active learning was highlighted in all courses and student projects. However, there were many factors, such as time, money, and resources, which prohibited the application of all stages with each learning experience. Additionally, the terminology and stages associated with Kolb's theory were not always applied. For this study, the researchers were interested in the knowledge and application of experiential learning with current secondary agricultural education teachers. Additionally, the current study sought to examine the participants' perceptions regarding the use, benefits, challenges, and perceived role of experiential learning in agriculture classrooms.

### *Methodology*

A qualitative approach was utilized to explore the use of experiential learning in agricultural education classrooms. Interviewing allowed the researchers to develop an understanding of the experiences of other people related to experiential learning (Seidman,

1998). This technique encouraged an in-depth exploration of participants' teaching techniques through the process of reflection.

The purposive sample for this study was comprised of four current agricultural education teachers in the state. The teachers were selected due to their level of teaching experience. Using electronic mail and the telephone, the teachers were contacted to solicit their cooperation and participation. Two novice (less than five years experience) and two experienced (over 20 years experience) teachers were chosen as participants for the study. Upon agreement to participate, interview times and locations were arranged with the selected teachers.

## Method of Data Collection

Semi-structured interviews were used to collect data for the study. The interview questions encouraged each teacher to describe their previous knowledge of experiential learning, discuss experiential application strategies, and explain the benefits and challenges of using experiential activities within the classroom. An interview guide provided structure to the interview process, but the researchers included probing questions for expansion and clarification of answers. A single interview lasting 20-25 minutes was conducted with each teacher. With the consent of the participants, each interview was audio-taped and transcribed at a later time. When completing the open coding process, a line-by-line method was used to identify common themes in the responses of the participants. To enhance the validity and trustworthiness of the study, analyst triangulation was used (Patton, 1990). This type of triangulation was achieved through the use of two interviewers and the comparative analysis of data among multiple individuals.

## Results

### *Objective One*

Objective one sought to determine how knowledgeable and familiar agriculture teachers were with experiential learning. Three of the four participants acknowledged that they lacked prior formal knowledge about experiential learning. When asked about their background and familiarity with experiential learning, participant answers included "I don't really have any classes or background in that area", "Tell me what you're saying", and "I have an idea, but I don't know specifically what you are referring to." Only one participant had been exposed to experiential learning previously during his preservice teacher preparation program. However, a comprehensive understanding of the term experiential learning and its meaning were unclear to participants.

### *Objective Two*

Objective two sought to describe how agriculture teachers use The Kolb Model of Experiential Learning in their classrooms. According to the participants, the phases of experiential learning are implemented in agricultural education courses, but do not always follow the cyclical process illustrated in Kolb's model. One participant stated, "It'll depend upon the topic as to what happens first.... It depends on the situation." The teachers described a variety of examples that allowed students to have concrete experiences in the classroom. The examples

included experiences ranging from artificial insemination to plant propagation. The model identifies the importance of participating in the concrete experience first to serve as a basis for observation and reflection (Kolb, 1984). However, the teachers agreed that the experience may or may not come first depending on the subject, activity, prior student knowledge, and safety concerns related to the experience. As one teacher stated, "normally you introduce the material first. Sometimes it is not always possible, but sometimes I can let them experience without really knowing."

Some of the reflective strategies cited by the teachers included questioning, rubrics, open thinking, individual papers, and individual or group discussions. However, the teachers did not always incorporate a reflective component or did not approach the reflective observation in a direct, specifically stated manner. "Not all the time, it just depends on time" stated one teacher. Strategies employed in the classroom to promote abstract generalizations included peer and self improvement techniques, individual and group thinking, and the recall of prior experiences to solve problems. The use of active experimentation was dependent on time, cost, number of students, and perceived importance of subject matter.

*Objective Three*

Objective three sought to determine the self-perceived role of the teacher when using experiential learning in an agricultural education classroom. Chapman (1992) stressed the importance of the teacher providing the minimum structure necessary to assist students in reaching a positive outcome. Additionally, the teacher should generate the concrete experience based on established objectives and assist students in creating linkages. The interview participants identified the role of the teacher as a guide or facilitator of learning, "you've got to provide all these things to them and help them out along the way. They are rarely going to make observations about themselves unless you flat out tell them to." Teachers were also deemed responsible for creating the experiences, assisting throughout the process, guiding students through the proper steps in the experiential learning cycle, advising students, and ensuring a positive learning outcome. One teacher summarized, "Just simply structuring it so that the kids have a flow… you are working with them as an advisor basically and trying to help them have a positive outcome."

*Objective Four*

Objective four sought to explain the teacher-perceived benefits and/or challenges posed by the use of experiential learning in the agricultural education classroom. Hopkins (1994) stated that the use of experiential education replaces the rote memorization, abstraction, and isolation commonly found in classrooms with interest, connection, and purpose. Other benefits of experiential education include the development of listening, problem-solving, creative thinking skills, self-esteem, and self-motivation (Leske & Zilbert, 1989), the growth in interpersonal skills and character traits (Conrad & Hedin, 1986), and the opportunity for students to individually process subject matter (Chapman, McPhee, & Proudman, 1995). The teachers credited experiential learning with increased subject matter retention among students, active engagement, use of higher order thinking skills, and academic success. As explained by one teacher, "they can memorize something and tell you what you need to know for a test, but if they can't actually

apply it then in six months they won't remember that information." In contrast, although teachers valued the use of experiential learning in the classroom, they identified multiple obstacles that prevented them from utilizing the model, "this is not as easy as just throwing it out and giving a test." Challenges recognized were class enrollment, time, supervision and management of student activities, modifications in teaching style, and maturity level of students. This different method of learning requires a new approach to teaching (Kolb, 1984). As stated by one teacher, "there is a big challenge to the teacher because you have to think outside the box…..it is more free-flow and you don't have the structure to sit down and be quiet so there might be a lot of management difficulties." Another teacher alluded to additional challenges related to time and supervision,

> If everyone is doing very similar things, it is not that big of a problem, but if some students are trying to do stem cuttings and someone else is trying to do air layering, those are two really different things and they have different time requirements and if half of the students are done with their project and the other half are working at a different pace, that can be difficult to manage.

## Conclusions

Experiential education is viewed as a process where the learner constructs knowledge, skills, and value from direct experience. This process is applicable to any agricultural program and allows for practical, guided experience to learn and test skills, supported by critique and reflection. One of the principles of experiential education is that students actively engage in their own education and "experiences are structured to require that learner to take initiatives, make decisions, and be accountable for the results" (Luckmann, 1996). Each participant agreed that this type of learning offers quality experiences, active engagement, reflective observations, and application useful for comprehensive understanding.

All participants engaged students in various experiential activities to maximize learning, yet lacked prior formal knowledge of Kolb's theory and terminology. Participants implemented the cyclical phases of Kolb's cycle in the classroom when possible, but did not always follow the recommended order. They believed the order of experiences was highly dependent upon subject matter, prior student knowledge, and safety concerns. Each commented on the benefits of increased subject matter retention, positive learning, active student engagement, and the use of higher order thinking skills common with experiential activities. However, challenges with using the process, such as planning, modifications to teaching style, and time, prohibited consistent use.

Participants stated that the teacher is an essential element in this process as a guide to learning that provides assistance and linkages to material. In order for successful, high quality experiential learning to occur within the classroom, the teacher must initially create the experience with thought, skill, and input from the group. This planning allows key points to be discovered, provides the minimum necessary structure for activities, assists students in making successful connections between the experience and the education, and establishes a goal to teach towards (Chapman, 1992). Each participant commented that experiential education requires teachers to change their way of thinking and allows students an opportunity for self discovery

learning. Teachers must create an emotionally safe environment, be actively involved in the learning process, and teach to all learning styles. Experiential learning is not easy to facilitate and challenges both students and teachers to reach out of their "comfort zone" and into a new experience (Proudman, 1992). Finally, participants believed that it is important for students to see the relationship between the material and the situation in relation to the original objectives in order to be successful.

## Recommendations

Research confirms that people do learn from their experiences (Cheek, et. al, 1990; Kolb, 1984; Dewey, 1938). Experience plays a central role in the learning process and educators should place more emphasis on this concept when developing curriculum. Experiential learning offers a critical link between the classroom and the real world. Active involvement with individual projects, group activities, and real life situations improves student motivation, behaviors, and understanding of abstract theories. Teachers should incorporate similar opportunities into their classes and encourage students to participate in these methods. These opportunities are positively correlated with student achievement scores, enhancing leadership development skills, and teaching personal responsibilities (Cheek, et al., 1990).

By employing new strategies and teaching applications, agricultural educators can continually enhance their programs and positively impact student learning and growth. During application, educators must permit meaningful experiences and progressive understanding using Kolb's cycle to assist in the acquisition and assimilation of subject matter. Educators should implement various forms of experiential learning into their courses, such as internships, field placement, work/study assignments, and structured exercises, to increase student learning. This personal experience offers opportunities for meaningful interaction, teacher guidance, and individual responsibility for learning.

It is also important that the process and purpose of the learning activities consistently align the students' knowledge and desired outcomes. Focus on student needs will improve interest, motivation, and retention of material. However, experiences are not always educative and must serve to promote future growth. Quality experiences must not only advance the learner's mental growth, but also establish connections, be focused, and encourage future interactions with new experiences. The teacher must create and direct student experiences that promote enjoyment, engagement, and influence their behavior to seek out future experiences.

So, how do teachers implement a philosophy of experiential education? Teachers should connect material and integrate concepts for increased student retention and understanding. Therefore, much attention and forethought must be given to developing suitable conditions for learning experiences in order for them to be meaningful and lasting. Effective organization helps to distinguish an educational experience from a non-educative experience. If the experience is selected, organized, and arranged suitable to the students' needs and directed towards an end purpose, then it can be classified as educational. Teachers must employ successful educational techniques that allow learners to interact, connect abstract ideas and concrete experience, observe consequences, and reflect on the results within the classroom environment. Teaching and learning theories must be connected to actual teaching experiences with adequate time for

student reflection and evaluation. Teacher preparation courses must emphasize the importance of using all components of experiential learning for positive student learning.

To gain the experience of using each component of Kolb's model, teachers must be provided with the opportunity to participate in experiential learning activities. Professional development workshops should utilize an experiential program design that offers personal experience. According to the National Research Council (2000), the most successful professional development activities engage teachers in the learning methods that they will incorporate into their classrooms. Therefore, teachers must be encouraged to practice using the experiential learning cycle and collectively discuss how it can be implemented in classroom settings. To encourage pre-service student understanding of Kolb's model for teaching purposes, there are several activities that could be included in teacher preparation programs. In the curriculum planning course, students should create lesson plans and units that utilize an experiential approach towards subject matter. In addition, students would be required to teach a lesson, identify the explicit use of the components of Kolb's model, and evaluate its effectiveness. For further reinforcement, focus on teaching and implementing each component of Kolb's model during field experiences should be required. In summary, teacher preparation programs and professional development workshops can reinforce the importance of experience in education through the continuous utilization and evaluation of experiential learning.

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