



AN EVALUATION OF EXPERIENTIAL LEARNING (EL) PROGRAM AND THE ATTITUDE OF THE DAT-BAT INSTRUCTORS

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ABSTRACT

The purpose of this qualitative study was to examine the use of experiential learning as a teaching methodology in the DAT-BAT course. Interviews were conducted with four instructors 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 the DAT-BAT course. Additionally, instructor-perceived benefits and challenges posed in the use of experiential learning in the DAT-BAT were identified. The findings suggested that the instructors have a good knowledge and understanding about experiential learning. However, phases of experiential learning as implemented in the DAT-BAT courses did not always follow the cyclical process illustrated in Kolb's model. Instructors perceived their role in the experiential learning process as a guide, or facilitator of learning. They also recognized multiple benefits of experiential learning which includes: increased subject matter retention among students, active engagement, use of higher order thinking skills, and academic success. The challenges on the use of experiential learning in the DAT-BAT course were class enrollment, time, supervision and management of student activities, modifications in teaching style, and maturity level of students.

Chapter 1

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".

"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). 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 agri-science teachers? This study used qualitative methods to gain an understanding of experiential learning in the DAT-BAT program. The intent was to examine how experience is being created, utilized, and applied in various educational settings by secondary agricultural education teachers.

Background and Description of EL Program

The implementation of experiential learning (EL) is an interlink of the Diploma in Agricultural Technology-Bachelor in Agricultural Technology (DAT-BAT) Curriculum and the Human Resource Development components which the Philippines-Australia Agricultural Technology Education Project (AGRITECH) is supporting to achieve its goal. The use of experiential learning was prescribed in the Project Design Document as the mode of delivery of the DAT-BAT course. This was largely due to the inputs of some faculty from the University of Western Sydney who assisted in the design stage of the project.

The AGRITECH Project is a bilateral agreement between the Government of the Philippines and Australia to support the DAT-BAT program. It is a direct grant from the Government of Australia administered by Australian Agency for

International Development (AusAID) and implemented by GRM International Pty. Limited and the Department of Education- Educational Development Projects Implementing Tasks Force (EDPITAF) and the Commission on Higher Education (CHED).

During the project's initial assessments in the recipient schools, it was found out that most if not all faculty in the project institutions have very limited and/ or no exposure in EL and applied skills-oriented teaching methods required for agriculture courses. Hence, the AGRITECH Project deemed it necessary to support, develop and improve instructors' competence in EL.

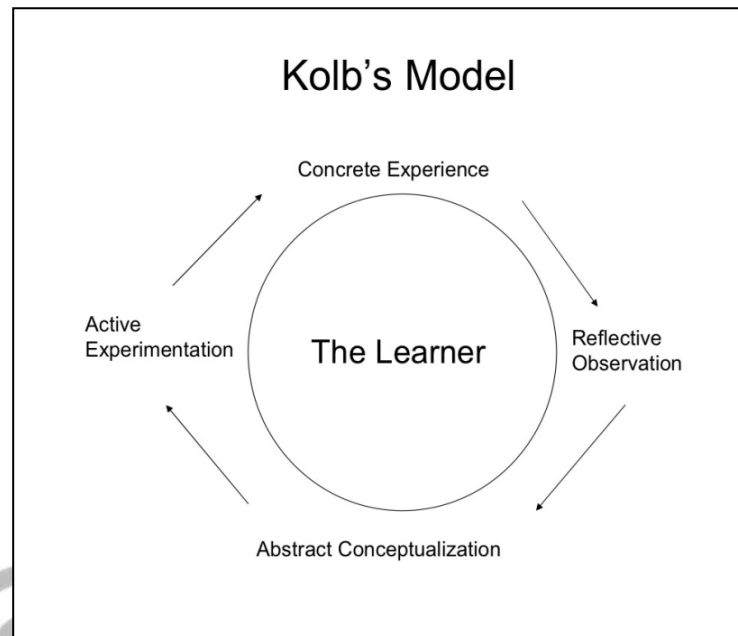
In June 1996, the Surallah National Agricultural School (SUNAS) as one the recipient schools in Region XII implemented the use of EL in the delivery of its DAT-BAT course. The following were the activities during the said program implementation:

1. Trainings on EL as a teaching approach
2. Classroom observations to check EL competence
3. EL Trainings for mentors
4. Mentoring to reinforce skills on EL
5. Provision of reading materials on EL (e.g. books, brochures)

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.

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).



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.

Evaluation Goals

The purpose of this investigation was to explore the use of experiential learning as a teaching methodology in the DAT-BAT course. The objectives of this study were to:

1. Determine the knowledge and familiarity of the DAT-BAT instructors in the use of EL.
2. Describe how DAT-BAT instructors use The Kolb Model of Experiential Learning in their classrooms.
3. Determine the self-perceived role of the teacher when using experiential learning in the DAT-BAT.
4. Explain the instructors' perceived benefits and/or challenges posed in the use of EL in the DAT-BAT

Chapter II

METHODOLOGY

Evaluation Design

A qualitative approach was utilized to explore the use of EL in the DAT-BAT. Interview allowed the researcher to develop an understanding of the experiences of other people related to EL (Seidman, 1998). This technique will

encourage an in-depth exploration of participants' teaching techniques through the process of reflection.

Participants Sampling

Purposive sampling was used to select the participants in this study. Four instructors were chosen: 2 teaching general education subjects (with less than 5 years experience and over 20 years), and another 2 instructors teaching technical subjects (with less than 5 years experience and over 20 years).

Evaluation Framework and Timeframe

	Kirkpatrick's 4 Levels	Evaluation Task	Evaluation Method
Before the Program June	Pre- Level: Needs Assessment To identify appropriate learning needs at instructor and school levels	<ul style="list-style-type: none"> Participants/ Program Chairman dialogue based on outcomes and expectations measures to create the baseline for: needs analysis, expectations, and motivation. 	<ul style="list-style-type: none"> Skills/ needs audit Participant/ manager dialogue sheet- Part 1 (self evaluation) (before and after scales) Participant/ school profile data

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">During the Program July- September</p>	<p>Level 1: Reaction To assess how participants react to the EL Program and to identify learning and improvements.</p> <p>Level 2: Learning To what degree participants acquire the intended knowledge, skills, attitudes, confidence, and commitment based on their participation in the EL training program.</p>	<ul style="list-style-type: none"> • Course feedback to gather user perception on enjoyment, usefulness, difficulty, program improvements. • During program personal reflection and evaluation of learning. • Assess and review expectations mid-way. 	<ul style="list-style-type: none"> • Active review and evaluation exercises at the end of every EL training/ workshop. • EL training evaluation at the end of every EL training. • Evaluation of the whole program at the end.
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After the Program October

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This program evaluation used Kirkpatrick's Model as the main tool of assessment. This was the basis in coming up with a structured interview and participants observations for analyzing the results of the evaluation. 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 with probing questions for expansion and clarification of answers. A single interview lasting 20-25 minutes was conducted with each instructor. 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 the four participants.

The Kirkpatrick's model has four (4) levels evaluation which are: Level 1- Reaction; Level 2- Learning; Level 3- Behavior; and Level 4- Results (Kirkpatrick, 2009). The reaction level evaluated the attitude of the learner towards the EL Program. The Learning level measured the knowledge gained by the participants that has undergone the EL Program. Behavior level evaluated how well the knowledge gained is applied by the instructors. Results level evaluated the targeted outcomes occurred as a result of the EL Program.

Using the 4 levels of Kirkpatrick model of program evaluation, the following instrument was used to evaluate the use of EL as a teaching methodology and the attitude of DAT-BAT instructors.

INTERVIEW QUESTIONNAIRE

I. Background Information

Name _____ Age _____
Sex _____ Degree Course _____
Highest Educational Qualification _____
Subject/s taught in DAT-BAT _____
Faculty Classification: _____ General Education _____ Technical _____
Total Teaching Experience (in years) _____ (in the DAT-BAT program _____)

II. The Use of EL as a teaching methodology in the DAT-BAT Program

Interview Guide:

Pre- Level: Needs Assessment

Part 2- Self Evaluation

Answer the following questions to determine your level of understanding of EL and how it is used as a teaching methodology:

- a. Are you familiar with EL as a teaching methodology?
- b. What is your level of understanding on EL?

1. Reaction Level

Objective #1- seek to determine how knowledgeable and familiar DAT-BAT instructors were with experiential learning

- a. How do you feel about the following activities conducted by AGRICTECH on the EL Program:
 - EL training- workshops
 - Classroom observations to check EL competence
 - EL Trainings for Mentors

- Mentoring to reinforce skills on EL
- Provision of reading materials on EL (e.g. books, brochures)

2. Learning Level

Objective #2 – seeks to describe how DAT-BAT instructors learn EL through the activities employed by the AGRITECH Project and how it will be used in teaching the subjects

1. Can you recall the Kolbian cycle on EL?
2. How do you describe your knowledge about EL?
3. Do you continue to explore more on EL?
4. Is it always necessary to complete the four stages of the Kolbian cycle for learning to take place? Why/ why not?

3. Behavior Level

Objective #3 - seeks to what degree participants apply their knowledge on EL in teaching the DAT-BAT.

1. How long have you been using EL in the DAT-BAT?
2. How do you describe yourself using this approach in the DAT-BAT?
3. Are you comfortable using this teaching approach? Why? Why not?
4. Was there any incident that you feel EL is difficult to practice? What did you do?

4. Results Level

Objective 4 - seeks to what degree targeted outcomes occur as a result of EL Program.

1. How do you perceive your role as a teacher using EL?
2. How do you perceive the benefits and/ or challenges posed in using EL in the DAT-BAT?
3. How do you perceive your students' learning using EL?
4. What is your general feeling towards the use of EL in the DAT-BAT?

Chapter III

Results and Findings

Objective One

Objective one sought to determine how knowledgeable and familiar DAT-BAT instructors were with experiential learning. The four participants acknowledged that they have good, formal knowledge about experiential learning. When asked about their background and familiarity with experiential learning, participant answers included “I don’t really have any idea 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 pre-service teacher preparation program. However, a comprehensive understanding of the term experiential learning and its meaning were unclear to the participants.

Objective Two

Objective two sought to describe how DAT-BAT instructors use The Kolb Model of Experiential Learning in their classrooms. According to the participants, the phases of experiential learning are implemented in the DAT-BAT course, but do not always follow the cyclical process illustrated in Kolb’s model. One participant stated, “It will 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 the subject matter.

Objective Three

Objective three sought to determine the self-perceived role of the teacher when using experiential learning in the DAT-BAT. 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 students 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 in the use of experiential learning in the DAT-BAT. 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 the instructors valued the use of experiential learning in the DAT-BAT, 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 where instructors have good formal knowledge of Kolb’s theory and terminology after they underwent the different activities employed AGRITECH Project such as training-workshops in EL, mentoring, provision of EL materials, class observations, and faculty meetings. 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 instructor/ 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 the course (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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