

A PHILOSOPHICAL EXAMINATION OF EXPERIENTIAL LEARNING THEORY FOR AGRICULTURAL EDUCATORS

T. Grady Roberts, Assistant Professor
Texas A & M University

Abstract

Experiential learning is prevalent in secondary and university agricultural education programs. An examination of the agricultural education literature showed many inquiries into experiential learning practice but little insight into experiential learning theory. This philosophical manuscript sought to synthesize and summarize what is known about experiential learning theory. The literature characterizes experiential learning as a process or by the context in which it occurs. Results of this study indicated that the process is cyclical in nature and requires an initial focus of the learner, followed by interaction with the phenomenon being studied, reflecting on the experience, developing generalizations, and then testing those generalizations. The context in which experiential learning occurs is defined by four dimensions: the level, the duration, the intended outcome, and the setting. Based on these results, models depicting the process and context were developed by the author.

Introduction

All learning is experiential, but all experiences are not educational (Dewey, 1938). An examination of agricultural education programs at both the secondary level and the broad family of agricultural education at the university level (teacher preparation, agricultural communications, and agricultural leadership) yields a plethora of experiential learning practices.

The experiential focus of secondary agricultural education has been a long-standing creed for agricultural educators. For example, Stimson (1919, p. 32) asserted

neither skill nor business ability can be learned from books alone, nor merely from observation of the work and management of others. Both require active participation, during the learning period, in productive farming operations of real economic or commercial importance.

Phipps and Osborne (1988, p. 19) said it clearest when they declared that the “emphasis is on learning by doing. This

emphasis is apparent in the attention given to laboratory work, field trips, problem solving, and supervised occupational experience programs.”

Experiential learning is not exclusive to secondary agricultural education programs. University programs in the broad family of agricultural education have also utilized experiential learning in their respective curricula. For example, McLean and Camp (2000) examined the curricula of ten agricultural teacher preparation programs and reported that experiential learning in the forms of student teaching and early field experience was present in the majority of programs. They also reported that pre-service teachers were often instructed in the experiential components of a secondary program. In a national Delphi study of agricultural communications programs, Simon et al. (2004) reported that experiential learning, in the form of internships, should be included in a Master’s level curriculum. Anecdotal evidence suggests that undergraduate agricultural communications curricula have similar components. Morgan, Rudd, and Kaufman (2004) reported that a national panel of experts agreed an internship was an

important component in the curriculum of agricultural leadership programs.

An experiential learning emphasis has existed in secondary agricultural education for decades. Evidence also supports that experiential learning is a component of the curricula in university agricultural education, communications, and leadership programs. However, the *theory* behind the practice of experiential learning has had limited attention in the permanent agricultural education literature. An examination of the *Journal of Agricultural Education* produced several articles that investigated *practices* related to learning from experience. For example, several researchers investigated supervised agricultural (occupational) experience in secondary agricultural education programs (Arrington & Cheek, 1990; Boone, Doerfert, & Elliot, 1987; Dyer & Williams, 1997; Osborne, 1988; Williams, 1979). Other researchers investigated experiences as related to teacher preparation (Deeds & Barrick, 1986; Edwards & Briers, 2001; Martin, 1968; Peters & Moore, 1983). However, only one examined the *theory* of experiential learning. Knobloch (2003) identified the central tenets of experiential learning and compared them to authentic learning.

An examination of *The Agricultural Education Magazine* yielded two issues devoted exclusively to experiential learning (Volume 62, Number 11, May 1990 and Volume 67, Number 3, September 1994). These issues examined a mixture of *theory* and *practice*. From a *theoretical* perspective, Townsend and Briers (1990) explored Dale's Cone of Experience; Leske (1994) provided an overview of experiential learning theory; and Stone (1994) expanded Kolb's Experiential Learning Theory. Although insightful, these articles examined only a portion of experiential learning theory and did not pass the same rigorous review as a scholarly journal.

Purpose

The *practice* of experiential learning has been documented and researched in the agricultural education literature.

However, the *theory* of experiential learning has received far less attention. The purpose of this philosophical study was to synthesize and summarize experiential learning theory from multiple disciplines and develop models useful to agricultural educators. Such models can guide practice and inquiry into practice.

Theoretical Framework

From an epistemological perspective, experiential learning aligns with constructivism, which posits that learners construct meaning from their experiences (Doolittle & Camp, 1999). Doolittle and Camp postulated that constructivism occurs on a continuum from cognitive to social to radical, varying on the subjective or objective nature of knowledge or reality. On one end of the continuum, cognitive constructivism assumes that knowledge is objective and separate from the learner. The learner's construction of knowledge is a reconstruction of what truly exists. On the other end of the continuum, radical constructivism assumes that all knowledge is subjective and constructed within the individual learner. Social constructivism lies in the middle and assumes that knowledge is subjective, but constructed through a shared social system. The individual learner constructs meaning, based on the socially defined nature of that knowledge. For a more complete discussion of constructivism, see Doolittle and Camp.

Rogers (1969) asserted that learning occurs on a continuum from meaningless to significant, experiential learning. He proposed that five elements are present in experiential learning: 1) direct, personal involvement, 2) learner initiation, 3) pervasiveness, 4) learner evaluation, and 5) the essence is meaning. An examination of the literature characterizes experiential learning in two ways. The first set of theories focused on the *process* of experiential learning (Dewey, 1938; Joplin, 1981; Kolb, 1984); the second set of theories related to the *context* in which experiential learning takes place (Dale, 1946; Joplin, 1981; Keeton, 1976). The further development of both facets of experiential learning theory will provide an

understanding of how people learn from experience.

Prominent Theories of the Process of Experiential Learning

John Dewey is arguably the father of experiential learning. A central tenet to his educational philosophy was, "... amid all uncertainties there is one permanent frame of reference: namely, the organic connection between education and personal experience" (Dewey, 1938, p. 25). Two of Dewey's works provide considerable insight into his theory on experiential learning, *How We Think* (1910/1997) and *Experience and Education* (1938).

In the earlier work, Dewey (1910/1997) spent considerable effort in postulating about how people make sense of the world around them. He used the term "reflective thought" to describe the process by which people learned from observations of their experiences. He outlined five distinct steps through which people progress during the learning process: "(1) a felt difficulty; (2) its location and difficulty; (3) suggestion of possible solution; (4) development by reasoning of the bearings of the suggestion; and (5) further observation and experiment leading to its acceptance or rejection" (Dewey 1910/1997, p. 72). Dewey asserted that it was no coincidence his theory of how people learn and the scientific method were analogous.

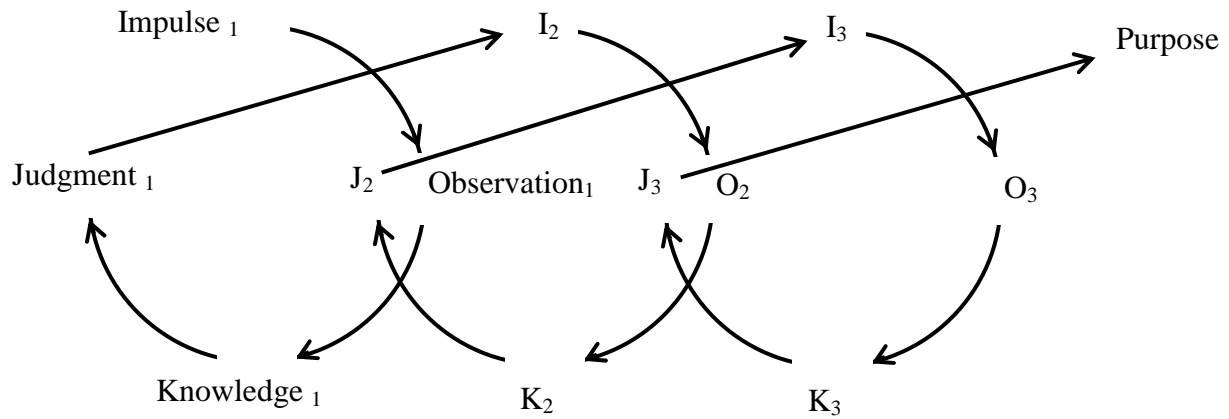
Dewey (1910/1997) surmised that progression through the learning process involved movement from inductive to deductive reasoning. In explaining the steps, he asserted that the first two steps often fuse together and constitute direct interaction with the phenomenon. Steps 3

and 4 are cognitive steps. Step 3 is characterized by the development of solutions, hypotheses, or theories. Step 4 involves reasoning through the implications of the proposed solutions, hypotheses, or theories. Step 5 involves additional interaction with the phenomenon to test the proposed solutions, hypotheses, or theories. Thus, Steps 1 through 4 are inductive in nature, while Step 5 is deductive in nature.

In *Experience and Education*, Dewey (1938) proposed that learning from experience, or formation of purposes, involves:

- (1) observation of surrounding conditions;
- (2) knowledge of what has happened in similar situations in the past, a knowledge obtained partly by recollection and partly from the information, advice, and warning of those who have had a wider experience;
- and (3) judgment which puts together what is observed and what is recalled to see what they signify (p. 69)

This process is instigated by an initial impulse. Dewey differentiated between activity and intelligent activity. In Dewey's opinion, intelligent activity, or education, is characterized by a postponement of action until observation and judgment have occurred. In other words, education is characterized by observations from an experience, reflecting on that experience, and then forming conceptualizations based on those reflections and pre-existing knowledge. Dewey also indicated that each subsequent experience builds on past experiences, thus indicating cyclical process (Figure 1).



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Figure 1. Dewey's Model of Experiential Learning as Conceptualized by Kolb (1984)

Joplin (1981) asserted that all learning is experiential. By reviewing a series of self-defined experiential learning programs, she developed a five stage model (Figure 2). Upon first glance at the model, notice the

spiral nature of the model. Joplin proposed experiential learning is cyclical and upon completion of one cycle another cycle commences. Thus, the experiential learning process is continuous and life-long.

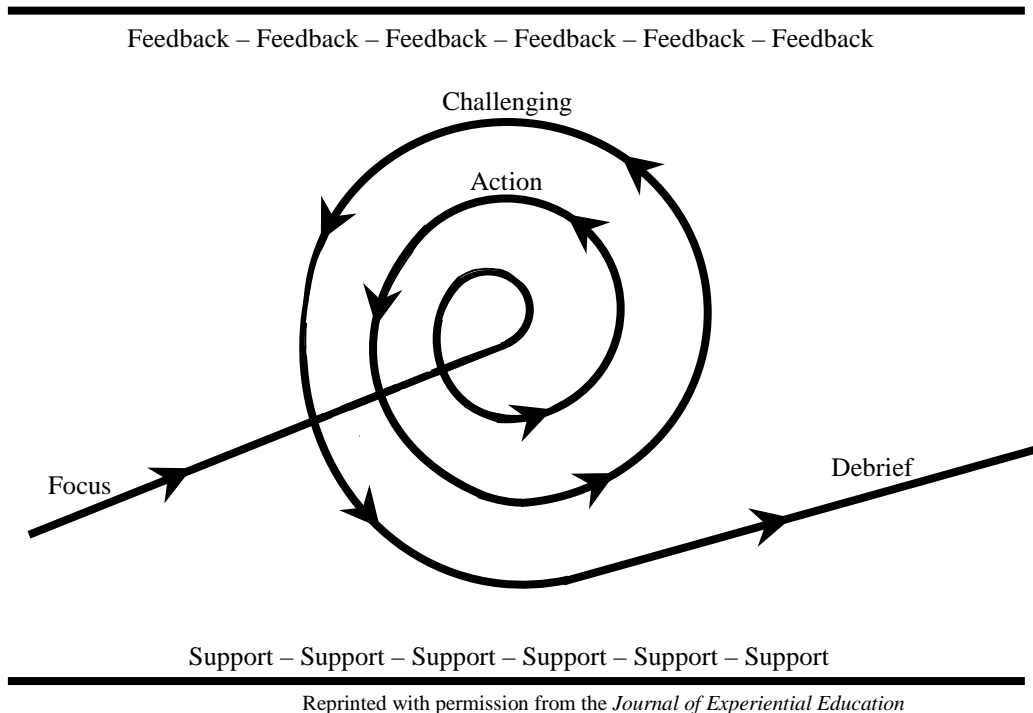
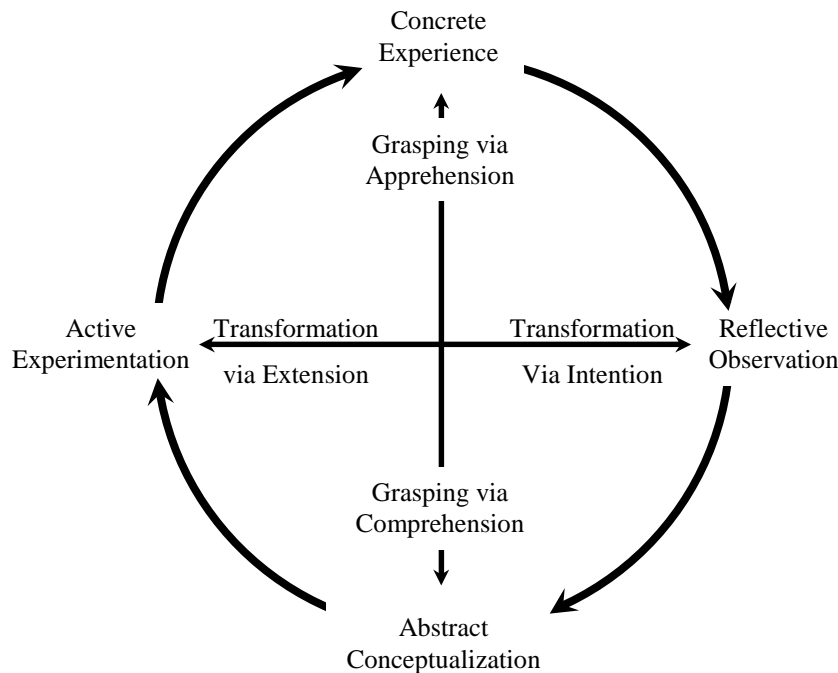


Figure 2. The five-stage experiential learning model (Joplin, 1981)

In defining the five stages, Joplin (1981) hypothesized that the first stage was “Focus,” in which the learner is first exposed to the phenomenon studied. She cautioned that this stage should be specific enough to focus a student’s attention, but still leave room for unplanned, spontaneous learning as a result of the experience. The second stage, “Challenging Action,” involves direct interaction or experience with the phenomenon being studied and should be sufficiently challenging or provocative. Joplin posited that action can occur at many levels, including physical, mental, emotional, or spiritual. She further presented that during the action stage, learners are engaged in processes such as ordering, sorting, analyzing, and moving. Stages three and four correspond with the environment in which experiential learning takes place, and actually occur throughout the process. Joplin asserted that the environment for experiential learning should

have sufficient “Support” and “Feedback.” Providing sufficient support allows the learner to be challenged in a safe environment where risk-taking is endorsed and assistance is available when needed. Feedback is necessary to provide learners with an assessment of their progress. The final stage of the model is “Debrief,” during which learning is recognized, articulated, and evaluated. It is during this stage that learners sort and order their observations from the experience and relate those observations to what is already known.

Kolb’s (1984) work provides an often referenced model of experiential learning. He defined learning as the process of creating knowledge. Citing the work of Lewin, Dewey, and Piaget, Kolb proposed a cyclical model for experiential learning with four stages (Figure 3). Highlighted in this model are two complementary dimensions: grasping information and then transforming that information.



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Figure 3. Model of the Experiential Learning Process (Kolb, 1984)

Kolb asserted that the learning process can begin at any stage. For discussion purposes, “Concrete Experience” will serve as the starting point. At this stage, the learner has direct interaction with the phenomenon being studied. During this stage, learners grasp information through apprehension using the senses to see, hear, smell, feel, or taste the phenomenon. Following the model, the next stage is “Reflective Observation,” where learners reflect on what they experienced. During this stage, information is transformed through intention. Kolb describes intention as a cognitive process in which the learner mentally breaks apart the experience and internalizes the information. During the “Abstract Conceptualization” stage, learners grasp the information through comprehension by forming rules, generalizations, or hypotheses about the phenomenon being studied. Like the previous stage, this stage is cognitive in nature and can occur in the physical absence of the phenomenon. The final stage is “Active Experimentation,” which is characterized by the learner testing the rules, generalizations, or hypotheses formed in the previous stage. Kolb asserts that during this stage information is transformed by extension, which again involves direct interaction with the phenomenon.

Examining models of the process of experiential learning from Dewey

(1910/1997, 1938), Joplin (1981), and Kolb (1984) yields several similarities. First, the models are all cyclical, indicating learning is not a discrete process with a beginning and end, but rather an on-going process. Secondly, explicit in Joplin’s model and implicit in the others is the initial focus of learners. Third, learners have direct experience with the phenomenon being studied, which may be an initial experience or experimentation based on previous experiences. Fourth, based on that direct experience, learners reflect and then develop general rules or hypotheses. Finally, those general rules are tested through further experimentation or application and the next iteration of the cycle begins.

As a result of synthesizing the above-mentioned theories, the *Model of the Experiential Learning Process* is proposed (Figure 4). Experiential learning begins with an initial focus of the learner, followed by an initial experience. After the experience, learners reflect on their observations, and then formulate generalizations. Using those generalizations, learners subsequently experience the phenomenon again, by testing the generalizations with experimentation. Following experimentation, learners further reflect and refine the generalizations, thus leading to further experimentation. The experiential learning process is on-going in a spiral-like pattern.

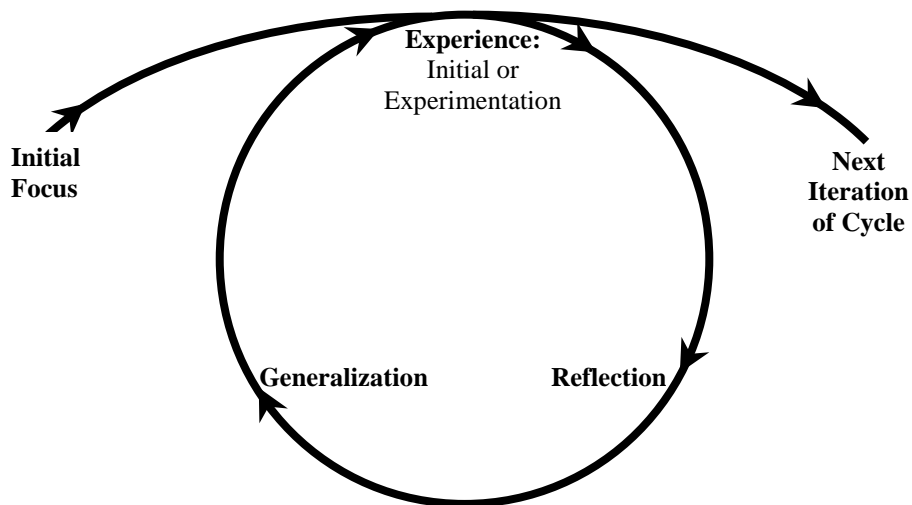


Figure 4. Model of the Experiential Learning Process.

Further examination of the process of experiential learning reveals similarities to other models of learning in the literature. For example, Rogers (1969) posited that problem-solving, inquiry-based learning, simulation, programmed instruction, and

basic encounter groups are all congruent with experiential learning. More specifically, Parr and Edwards (2004) documented the congruence of the problem-solving approach and inquiry-based learning (Table 1).

Table 1
Comparison of Models of Learning

Experiential Learning (as presented in Figure 5)	Problem-Solving Approach ¹ Phipps & Osborne (1988)	Inquiry-Based Learning ¹ Trowbridge & Bybee (1996)
1. Initial Experience	1. Experience provocative situation	1. Engagement
2. Reflection	2. Explore references/sources	2. Exploration
3. Generalization	3. Arrive at a group solution	3. Explanation
4. Experimentation	4. Attempt a trial solution	4. Elaboration
	5. Evaluate the effects	5. Evaluation

¹As reported by Parr and Edwards (2004)

When comparing the learning models, all three begin with learners engaging or experiencing the phenomenon being studied. The models diverge slightly in the second stage. In experiential learning, learners reflect on what they experienced, while in other models, learners further explore the phenomenon. In the third stage, all three models involve developing a theory, solution, or explanation, followed by the fourth stage in which that theory, solution, or explanation is tested. Experiential learning differs from the other models in that it does not have a formal evaluation stage. However, given the cyclical nature of experiential learning, evaluation indirectly occurs through subsequent experimentation, reflection, and generalization.

Prominent Theories that Define the Context of Experiential Learning

Theory purports that the learning process is not independent from the context in which it occurs. In socio-cultural theory, Vygotsky (1978) asserted that learning involves a complex interaction between the learner and

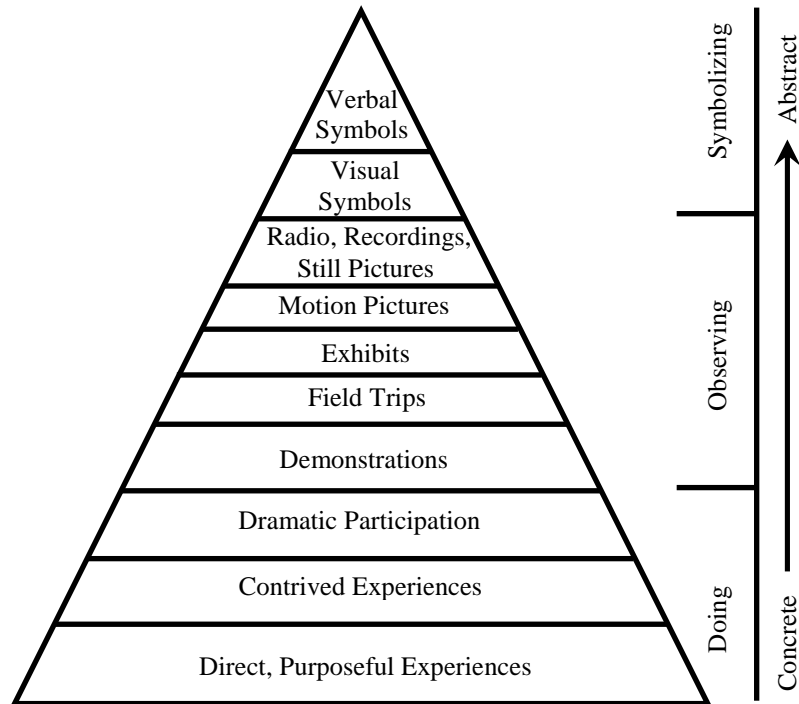
the environment. Accordingly, he proposed cognition occurs twice, once at the social level (interpersonal) and then at the individual level (intrapersonal). The aforementioned proposition is consistent with Kolb's (1984) complimentary processes of apprehension/comprehension and assimilation/accommodation. Similarly, in situated learning theory, Lave and Wenger (1991) posited that learning occurs in a community of practice or social world. The authors used the term 'legitimate peripheral participation' to describe the process by which people learn through observation and participation in the community of practice. Thus, socio-cultural theory and situated learning theory both support that learning is bound by the context in which it occurs.

Prominent theories defining the context of experiential learning were found from Dale (1946), Joplin (1981), and Steinaker and Bell (1979). The literature also supports the notion that experiential learning occurs in a variety of settings (Boone et al., 1987; Keeton, 1976; Lewis & Williams,

1994). Although not specific to experiential learning, a discussion of the settings in which education occurs is warranted to advance the experiential learning theory.

Dale (1946) posited that experiences occur at different levels, ranging from direct,

purposeful experiences to experiences with verbal symbols. Presented as a “Cone of Experience,” Dale theorized experiences occur at ten levels (Figure 5). However, Dale further cautioned that the delineations between levels are not rigid, inflexible lines.



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Figure 5. The Cone of Experience (Dale, 1946)

According to Dale (1946), the base of the cone is characterized by more concrete experiences, such as direct experiences (real-life experiences), contrived experiences (interactive models), and dramatic participation (role plays). The common theme among these levels is learners are “doing.” The middle of the cone is slightly more abstract and is characterized by learners realistically “observing” the experience. These levels are differentiated from the lower levels of the cone because students do not interact directly with the phenomenon. Levels in this section of the cone include demonstrations, field trips, exhibits, motion

pictures, and audio recordings or still pictures. The peak of the cone is the most abstract where the experiences are represented non-realistically by symbols, either visual or verbal.

Beyond the experiential learning model presented earlier, Joplin (1981) theorized that the scope or duration can occur on a continuum from “mini” to “maxi” (Figure 6). According to Joplin, at the “mini” level, experiential learning can occur as a “flash of insight”; while at the “maxi” level, the entire curricula of a school can be orchestrated through experiential learning. Thus, an experiential learning cycle can take a few seconds, or years to complete.

Maxi	whole school design
	one course design
	a project in the course
	one day of the course
	a conversation
Mini	a flash of insight

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Figure 6. A Model of the Scope of Experiential Learning (Joplin, 1981)

Steinaker and Bell (1979) proposed a taxonomic sequence to describe the expected outcomes of experiential learning. Citing the inappropriateness of existing taxonomies (i.e. Bloom's), Steinaker and Bell delineated five categories of educational objectives suitable for experiential learning: exposure, participation, identification, internalization, and dissemination. The categories were further divided into sub-categories. For a more complete examination of the taxonomy, see Steinaker and Bell.

According to Steinaker and Bell (1979) if the objective of the experience was exposure, learners would develop an awareness of the phenomenon. If the objective was participation, learners would physically interact with the phenomenon. An objective of identification would precipitate learner involvement with the experience affectively. Moving higher, if the objective was internalization, the experience would change the life-style of the learner. An experience with an objective of dissemination would have the learner sharing the phenomenon with others.

An examination of the literature produces great variability in what constitutes experiential learning. For example, in secondary agricultural education, experiential learning is often associated with Supervised Agricultural Experience (Newcomb, McCracken, Warmbrod, & Whittington, 2004). Keeton (1976) described experiential learning as university credit for work experience. Lewis and Williams (1994) also reported that

university credit for work experience is considered experiential learning, but went further to assert that classroom-based learning, internships, field-based experiences, and outdoor/adventure programs have all been considered experiential learning. This variability in what constitutes experiential learning delineates the differences in formal, non-formal, and informal educational settings.

Etling (1993) described educational settings on a continuum from formal to non-formal to informal. He asserted that formal educational settings are associated with classrooms in schools and universities. These settings are structured learning environments in which the instructor has substantial control over the environment. Formal experiential learning activities occur in a classroom or laboratory, such as experiments, projects, and other hands-on activities. At the center of the continuum are non-formal education settings, which Etling posited are less structured and often occur outside the school setting. However, educational activities in these settings are planned by instructors and have defined goals. Non-formal experiential learning activities include Supervised Agricultural Experience, internships, service-learning projects, outdoor/adventure programs, and other planned out-of-class activities. At the end of the continuum are informal educational settings, which are unplanned and unorganized. Etling characterized informal educational activities as incidental learning and everyday experiences. Informal

experiential learning activities include self-directed, on-the-job learning which can lead to college credit for work experience.

The context in which experiential learning occurs can be defined by four

dimensions: the level, the duration, the intended outcome, and the setting. The *Model of Experiential Learning Contexts* was developed based on these dimensions (Figure 7).

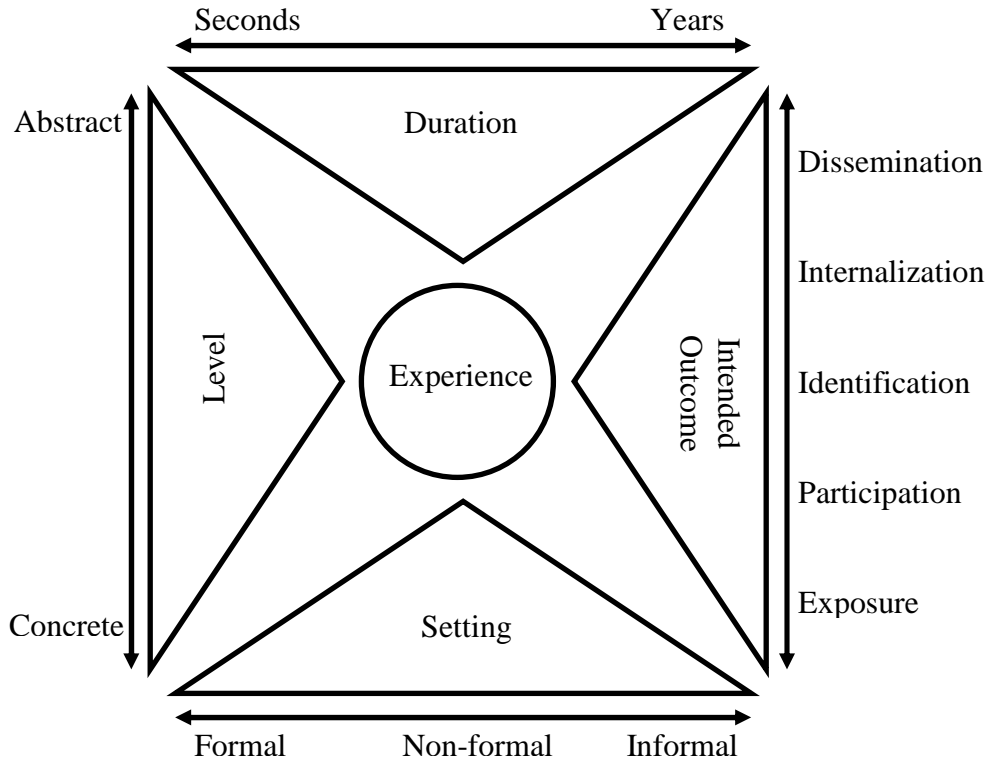


Figure 7. Model of Experiential Learning Contexts

Based on the *Cone of Experience* (Dale, 1946), the level of an experience can occur on a continuum from very concrete to very abstract. Advancing Joplin’s (1981) concept of “mini” to “maxi,” the duration of an experience can occur on a continuum from just a few seconds to many years. According to Steinaker and Bell (1979), experiential learning can have intended outcomes of exposure, participation, identification, internalization, and dissemination. Given the variability of the educational settings in which “experiential learning” occurs, the continuum from formal to non-formal to informal educational settings (Etling, 1993) is critical in defining the context.

Summary

Experiential learning is prevalent in secondary agricultural education programs and the broad family of university agricultural education programs. The *practice* of experiential learning has received considerable attention in the agricultural education literature; however, a deficiency exists in the examination of the *theory* of experiential learning. Therefore, a broad examination from multiple disciplines was undertaken. Based on this examination, it was concluded that relevant theories define experiential learning as a *process* or by the *context* in which it occurs.

As a *process*, experiential learning is cyclical in nature and requires an initial focus of the learner, followed by interaction with the phenomenon being studied, reflecting on the experience, developing generalizations, and then testing those generalizations. The author developed the *Model of the Experiential Learning Process* (Figure 4) to explain this process. Similarities were found between experiential learning and other learning models, such as problem-solving and inquiry-based learning.

In defining the *context* in which experiential learning occurs, four dimensions are needed: the level, the duration, the intended outcome, and the setting. The *Model of Experiential Learning Contexts* was developed by the author to explain the dimensions (Figure 7). The level occurs on a continuum from very concrete to very abstract. The duration occurs on a continuum from seconds to years. The intended outcome can be: exposure, participation, identification, internalization, or dissemination. The setting occurs on a continuum from formal to non-formal to informal.

Implications and Recommendations

Based on the conclusions of this study, it is apparent experiential learning is a cyclical process defined by theory. It is recommended that experiential learning practitioners examine current procedures and align them with the *Model of the Experiential Learning Process* (see Figure 4). It is also recommended that researchers use this model to guide inquiry into practice. The conclusions of this study also show experiential learning is defined by the context in which it occurs. Given the considerable variability in the literature of what learning activities are considered experiential learning, it is recommended that practitioners and researchers utilize the *Model of Experiential Learning Contexts* (Figure 7) to more accurately define learning activities. Doing so will provide a common language and facilitate greater continuity in furthering what is known about experiential learning.

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T. GRADY ROBERTS is an Assistant Professor in the Department of Agricultural Education at Texas A & M University, 104A Scoates Hall, 2006 TAMU, College Station, TX 77843-2116. E-mail: groberts@tamu.edu.