Experiential learning is "knowledge, skills, and/or abilities attained through observation, simulation, and/or participation that provides depth and meaning to learning by engaging the mind and/or body through activity, reflection, and application." (Craig 1997).

Ultimately it provides for affective and behavioral, as well as cognitive learning. Whether it can be in the classroom, field of occupation, or the great outdoors, experiential learning is a less abstract learning tool that allows the participant to test theory while demanding that the learner articulate their own questions and seek their own answers.

Theory
Experiential learning can take place in many different settings and have many objectives. The more than fifty forms of experiential learning researched can be found in every setting from the classroom to a mountain top in Tibet. Depending on the setting of the program, goals of the facilitator and participator, the situation in which they are involved, and the outcomes attained, an experiential learning program may fit all or some of either employment, educational, personal development, or leisure based scenarios.

John Dewey concluded that "all genuine education comes about through experience, this does not mean that all experiences are genuinely or equally educative." (1938, p. 25). Although sometimes using different terms, those involved with experiential learning agree with Dewey's theory that both continuity, which is the ability of the experience to foster growth and development while providing for future experiences and interaction, an exchange between the internal or subjective elements of the experience (the participant) with the external or objective aspects (the environment) are necessary for a educative experience.

Academic theory is however in no way left out of the experiential learning philosophy. Some literature, and experiential learning models, may, inadvertently or not, fail to mention a need for theory. However, it is the base, if possible, on which a quality experience should begin. It is not going to be present prior to all experiences and is not crucial for every successful experience but it does however give the learner a better understanding of what to pursue and how to pursue it, as well as something to compare the experience to. This can possibly be summed up best in the philosophy of assimilation and accommodation. Assimilation being the process of incorporating new experiences with prior knowledge and accommodation, the process of prior knowledge being altered by the new experience.

With the need for theory explained, it is important to understand why experience is an important aspect of learning. "Students who use information they are trying to learn, who challenge and grapple with their new knowledge, or who use it to solve problems, tend to learn more effectively than students who passively read, memorize, or merely absorb that to which they have been
exposed.” (W.J. McKeachie, 1963, p. 118). "Recent research on memory has shifted in attention from the material to be learned to the mental activities of the learner - learners remember not what they encounter while learning so much as what they do while learning." (Tulving & Watkins, 1975, p. 270). These quotes serve to affirm the need for experience as a melding tool in the acquisition of knowledge. Without it, knowledge may be acquired but the learner may never have the ability to truly understand the theory without an experience to use as a testing ground.

Dewey felt experience was a cycle of trying. One senses a concern, gets an idea, tries it out in an arena of applicability, undergoes or experiences the consequences, and confirms or reinterprets theory in the light of those consequences. In the best case, this process results in a reconstruction of experience, a re-codifying of habits, and an ongoing active questioning through further experimentation.

The basis of all experiential learning is that experience matters. Many educators believe that without an experience, there can be no true learning or real understanding of a concept or situation (Andresen, Boud, & Cohen, 2000; Kolb, 1984; Dewey, 1938). However, not all experiences are equally educative (Dewey, 1938), and experience alone does not necessarily lead to learning or mean that learning will take place. Without the opportunity to reflect upon an experience and apply new knowledge, experiences may be miseducative (Dewey, 1938). The educator must create an atmosphere in which experiences are reflected upon by the learner so they become meaningful and positive (Dewey, 1938; Enfield, 2001).

To accomplish true learning and real understanding, a sequence of three discrete components is needed: 1) A "concrete experience" (Enfield, 2001; Kolb, 1984) where the learner is involved in an exploration, actually doing or performing an activity of some kind; 2) a reflection stage (Enfield; Kolb; Pfeiffer & Jones, 1985) whereby the learner shares reactions and observations publicly and processes the experience through discussion and analysis; and 3) an "application" or "conceptualization" phase that helps the learner deepen and broaden their understanding of a concept or situation by cementing their experience through generalizations and applications (Carlson & Maxa, 1998).

Another key point of the experiential learning process is that it is a "recurring cycle" (Kolb, 1984). As a result of the reflection and application phases from one experience, new concepts, hypotheses, and/or impressions arise that lead the learner to further explorations, thus restarting the EL cycle. As John Dewey discussed so cogently in Experience and Education (1938), previous experiences affect current experiences, which naturally influence future experiences. The learning that takes place on one day will evolve into additional learning as time progresses.

It is also important to note that different experiential learning cycles with varying numbers of stages or quadrants (three, four, or five) are described in the literature (Kolb, 1984; Pfeiffer & Jones, 1985; Marek & Cavallo, 1997). However, all experiential learning cycles share common features, and the number of stages is not critical. What is significant is that there is an opportunity for interplay between previous, current, and future experiences and between the
learner and the environment (Dewey, 1938). Furthermore, it is essential to understand that active reflection and the application of knowledge are what make experiential learning different and more powerful than the models commonly referred to as "learn-by-doing" or "hands-on-learning (Proudman, 1995).

**Experiential Learning in 4-H**

Cooperative Extension/4 H faculty and county-based academic staff have been developing and promoting EL for use in 4 H for several decades (Horton & Hutchison, 1997; Horton, Hutchinson, Barkman, Machtmes, & Myers, 1999). Although a variety of models have been utilized in designing curricula and in developing training for 4-H volunteers and staff (Enfield, 2001), an EL model using a five-step learning cycle based on the work of Kolb (1984) and Pfeiffer and Jones (1985) is the most common one currently used in the 4 H Youth Development Program as evidenced by the National 4-H Cooperative Curriculum System's materials.

Learning preferences of targeted Extension audiences and new agents clearly reflect those theories and principles that have long been espoused by leaders in the field of education. Perhaps the most well known proponent of learning by doing is indeed the person generally recognized as the "father" of Extension--Seaman A. Knapp. He stated that: "What a man hears, he may doubt; what he sees, he may possibly doubt, but what he does, he cannot doubt" (Rasmussen, 1989). The noted learning theorist, John Dewey was a strong proponent of experiential opportunities being provided as a critical component of the education process. He stated that ".all principles, by themselves are abstract. They become concrete only in the consequences which result from their application" (Dewey, 1938). In his thesis on curriculum development, Ralph Tyler saw planned "sequential practice" of what is being learned as a key element of a learning system (Tyler, 1971). More recently, Stephen Brookfield (1983) sought to differentiate experiential learning into two components: one that results from no purposeful desire such as an injury or an accident, and one which reflects a desire to gain knowledge and skills.

As Extension educators, our desire is to create experiential educational opportunities for our clientele by planned design rather than experience occurring by accident. Based on theory and educational research over the years, our educational program delivery systems should include delivery methods that provide opportunities for clientele to gain a sensory, exploratory experience with the information being presented.

The educational goal of colleges and universities is preparation for professional life. With the use of such experiential learning programs as cooperative education, a university offers the ultimate test of a students learning, their ability to transfer, apply, and use the knowledge they have gained. The student is no longer simply an educated person, he is an educated person that has the skill to function, perform, and make decisions in the workplace. The ultimate benefit comes as the acquisition of the specific abilities necessary to perform coupled with the improvement of skills in planning, goal setting, decision making, interpersonal communication, and problem solving. This greatly improves the student's chances of gaining quality employment upon graduation.
Macro-level Conceptual Framework

The constructivist perspective of readiness and development was advanced by theorists such as Jean Piaget, Maria Montessori, and Lev Vygotsky. Although their work varies greatly, each articulates a similar context of learning and development. They are consistent in their belief that learning and development occur when young children interact with the environment and people around them (Hunt, 1969).

Those engaged in professional learning have a broad understanding of the work of David Kolb. His highly influential book entitled 'Experiential Learning: Experience as the source of learning and development' was first published in 1984 since then his ideas have had a dramatic impact on the design and development of lifelong learning models. David Kolb's work can be traced back to that famous dictum of Confucius around 450 BC:

"Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand."

Experiential learning is one of the more widely accepted theories within adult education (Merriam & Caffarella, 1999). In this theory, learning is a derivative of personal experiences, whether in formal, non-formal, or informal settings. These experiences are often results of encounters, whether consciously or subconsciously. A person can be in direct contact with a thing, situation and/or place or, on the other hand, have a recollection, thus reconstructing an experience in an attempt to frame its effect upon the individual (Newman, 1999). Experiential learning theorists aimed to transcend traditional educational programs, where lecturing and testing has been the dominant form of evaluating one’s knowledge gain. Kolb (1984) noted that the experiential learning model provides a method to examine and strengthen links between education, work and personal development. In the past, Kolb indicated that several scholars labeled the theory as too simplistic and pragmatic for most academicians. However, as evidence from research about this theory’s efficacy increases, more practitioners begin to prefer experiential learning strategies in formal, as well as non-formal, educational settings, while researchers become more receptive to similar models as a method of instruction in colleges and universities (Kolb, 1984). The basis for this theory was established from the efforts of educator John Dewey (1938) and psychologists Kurt Lewin (1948) and Jean Piaget (1966). The Kolb (1984) model of experiential learning presents interrelated learning phases within a cyclical process, moving in the following order: concrete experience, reflective observation, abstract conceptualization, and active experimentation.

Key proponents of experiential learning include Dewey’s (1938) argument of the quality of an experience, as a result of continuity and interaction and Kolb’s (1984) adaptation of socio-emotional development. Dewey (1938) stressed that “everything depends on the quality of one’s experiences,” often noting that those experiences that do not influence progression are a “mis-educative experience” (p. 27). He proposed that quality experiences occur as a part of “continuity of experiences” that are connected to past experiences and somehow modify the quality of those that are forthcoming. In connection with continuity, Dewey (1938) also presented
the principle of interaction referring to the action of an individual having an experience with her/his environment (e.g., objects and/or other people). Dewey’s work has been called some of the most attentive observations of lived experiences in connection with learning (Merriam & Caffarella, 1999). His propositions that learning is a direct result of experiences have served as the basis for the experiential learning phenomenon, as well as other adult learning theories (Merriam, 1998).

Kolb (1984) encountered criticism by some scholars who perceived his model as being one-dimensional (Britzman, 1998; Fenwick, 2000; York & Kasl, 2002). Regardless, he argued that Dewey’s pragmatic observations formed the “philosophical rationale for the primary role of personal experience in experiential learning” (p. 18). Piaget’s (1966) contribution, according to Kolb (1984), stems from his in-depth description of assimilated and accommodated experience. Moreover, Kolb noted Lewin’s (1948) work on T-groups, and action research as being very instrumental in articulating experiential learning concepts. A part of Lewin’s work centers on group dynamics, which creates a learning environment that challenges and stimulates the perspectives of group members.

As a whole, these scholars (i.e., Dewey, Kolb, Lewin, and Piaget) provided a comprehensive theoretical base that has grounded experiential learning theory. Their models and strategies have been applied and found to offer strong evidence as to the validity of this theory about the role of experience in creating a change in a person’s understanding or behavior. However, despite the widespread application of theoretical experiential learning models (Edwards, 1994; Jarvis, 1987; Knowles, 1980; Usher, Bryant, & Johnston, 1997), uncertainty exists as to how to best utilize the aspects in different educational settings (Merriam & Caffarella, 1999).

Experience has been venerated as a highly valuable resource and a definitive attribute for adults and the learning process (Knowles, 1980; Lindeman, 1961). Experiential learning affords the learner an ability to focus on her or his own interests (Brookfield, 1986), thus motivating the individual to be actively engaged and stimulating the potential for higher levels of learning. Although acquiring knowledge from experiences is viewed as essential to the learning process, limited research exists on the connections between learning experience and how to capture the extent to which learning in formal and non-formal settings occur (Merriam & Caffarella, 1999).

Experiential learning theory, although utilized heavily in the discipline of adult education, can be applicable to all age groups. Kolb’s (1984) mention of Piaget’s (1966) work with children demonstrated the benefit that practical experiences of knowledge have upon their learning. Youth development research (Camino & Zeldin, 2003; Flanagan & Faison, 2001; Perkins et al., 2003) indicated that youth can gain valuable social leadership skills when fully engaged in their communities. These experiences provide reflection-on-action (Merriam & Caffarella, 1999) that may be associated with responsible, civic-mindedness as youth enter into adulthood. The impact of those experiences seems to constitute a degree of learning, regardless of age. Although adults may be assumed to have more sophisticated experiences than youth, this may not always hold true. A young person that has traveled extensively to other countries certainly has more global,
cultural experiences than an adult that has never traveled outside of her/his home state. One way to ensure individuals gain valuable experience is by taking advantage of hands-on opportunities. This immersion process offers a chance to learn by doing.

**Studying Experiential Learning**

Experiential learning dates back beyond recorded history and remains pervasive in current society, whether formalized by educational institutions or occurring informally in day-to-day life. In this sense, experiential learning is not an alternative approach, but the most traditional and fundamental method of human learning. Ironically, the current perception of experiential education as ‘different’ is probably less due to new developments in experiential learning than it is to the normalization of didactic teaching as the mainstream educational methodology.

For these reasons, those seeking a deeper understanding of experiential learning should consider the philosophies of not only contemporary figures such as Kurt Hahn (who was inspired by and utilized Plato’s “The Republic” in designing Outward Bound programs), Kolb's Experiential Learning Cycle, and so on, but also include study of those who have previously described the process of experiential learning long before many current forms of experiential education began. Main figures in this sense are John Dewey and Paulo Freire, but also consider how the work of William James, Maria Montessori, Rudolf Steiner and Francis Boal apply to our current educational situations.

Since the 1950's there has been a growing focus in writings and research specifically on experiential learning. Major sources for such material related to experiential learning in the outdoors are journals, conferences, books, and websites.

**What is empiricism?**

The word "empiricism" is derived from the Greek *empeiria*, the Latin translation of which is *experientia*, from which in turn we derive the word "experience." Empiricism also comes from *empiric* - a doctor who relies on practical experience. And in seventeenth- and eighteenth-century medicine, empiricism was synonymous with quackery, and in literary criticism the term is also generally employed to characterize an uninformed judgment.

Empiricism is a broad tradition in Western philosophy. The basic thesis of empiricism is that legitimate human knowledge arises from what is provided to the mind by the senses or by introspective awareness through experience.

Now to keep from defining one term by means of an almost equally ambiguous term, we should examine what we mean by experience. Different philosophers pick out different phenomena with the word: and even when they seem to pick out the same phenomenon, they may have different views as to the structure of the phenomenon that they call "experience." Aristotle took experience as the as yet unorganized product of sense perception and memory. This appears to be a common philosophical conception of the term. Memory is required so that what is perceived may be retained in the mind or remembered. When we say that we have learned something from
experience we mean that we have come to know of it by the use of our senses. We have experience when we are sufficiently aware of what we have discovered in this way. Another connected sense of the term is the perception of feelings, sensations, and etc. as sense experiences. Awareness of these experiences is something that happens to us and it is in this sense passive. The statement that experience is the source of knowledge means that knowledge depends ultimately on the use of the senses and on what is discovered through them.

It seems an interesting parallel to note that just as the term "experience" is ultimately derived from the term "empiricism," empiricists maintain that all knowledge is ultimately derived from experience-sense experience.

**Who are the Empiricists?**

Among the ancient philosophers, the Sophists were empiricists. Aristotle (384-322 BC) is sometimes said to be the founder of the empiricist tradition, although there are important rationalistic elements in his philosophy. Certainly Aquinas seemed to believe that he had Aristotle’s authority for the view that there is nothing in the intellect which was not previously in the senses. Aristotle’s place in the development of empiricism remains unclear, however. Epicurus (341-270 BC) was a Greek philosopher who founded the system known as Epicureanism.

Saint Thomas Aquinas (1224-1274) held the view that intellectual knowledge is derived by way of abstraction (concept formation) from sense data.

Francis Bacon (1561-1626) gave impetus to the development of modern inductive science. Of the earlier philosophers, he particularly criticized Aristotle. British empiricists took their cue from Bacon who hailed the primacy of experience, particularly over nature.

**The British Empiricists**

John Locke (1632-1704), the first and founder of the British empiricists, was an empiricist in roughly the same sense that Aquinas was. His main target for attack was the doctrine of innate ideas- the doctrine that there may be ideas with which we are born or, at any rate, which we do not have to derive from sense experience.

George Berkeley (1685-1753) was the second of the British empiricists. One of his aims was to rid Locke’s philosophy of those elements which were inconsistent with empiricism. The esse of sensible things is percipi-they consist in being perceived and they have no existence without the mind (Idealism).

David Hume (1711-1776) was a Scottish empiricist whose work in *Treatise of Human Nature* reveals the philosophical influence of John Locke and George Berkeley. Hume tried to improve on the work of his predecessors with attempts at greater precision.
John Stuart Mill (1806-1873) left a permanent imprint on philosophy through his restatements of the principles underlying empiricism and utilitarianism. He followed directly in the tradition of Hume. Mill’s account of our knowledge of the external world was in part phenomenalist in character; it maintained that things are merely permanent possibilities of sensation.

**Empiricism and the American Philosophers**

Ralph Waldo Emerson (1803-1882) opposed the skepticism of Locke and the empiricists and is generally considered the leading exponent of American Transcendentalism. Emerson credits Kant with "showing that there was a very important class of ideas or imperative forms, which did not come by experience, but through which experience was acquired; that these were intuitions of the mind itself; and he denominated them Transcendental forms."

Charles Sanders Peirce (1839-1914) is perhaps best known not for his empiricism but as the founder of the pragmatic movement (Pragmatism) in American philosophy. He met William James at Harvard who later developed and popularized pragmatism. As regards empiricism, Peirce notes four methods for "fixing belief," belief being the goal of inquiry, and espouses the scientific or experimental method as the only truly successful method of fixing belief; it leads everyone who employs it ultimately to the same conclusion.

William James (1842-1910) along with Peirce was one of the founders and leading proponents of Pragmatism. James considered pragmatism to be both a method for analyzing philosophic problems and a theory of truth. He also saw it as an extension of the empiricist attitude in that it turned away from abstract theory and fixed or absolute principles and toward concrete facts, actions, and relative principles. James’ radical empiricism finds connections between experiences in experience itself.

John Dewey (1859-1952) carried on the leadership of the pragmatist movement after James death. His version of pragmatism was called Instrumentalism. The key concept in Dewey’s philosophy is experience. He thought of experience as a single, dynamic, unified whole in which everything is ultimately interrelated. At the highest level of generality one might call Dewey’s philosophy a kind of naturalistic empiricism. Dewey thought of himself as part of a general movement that was developing a new empiricism based on a new concept of experience, one that combined the strong naturalistic bias of the Greek philosophers with a sensitive appreciation for experimental method as practiced by the sciences. His concept of experience had its origin in his Hegelian background, but Dewey divested it of most of its speculative excesses. He clearly conceived of himself as an empiricist but was careful to distinguish his notion of experience both from that of the idealist tradition and from the empiricism of the classical British variety.

Willard Van Orman Quine (1908-2000). The empiricism of Quine is perhaps the most difficult to get a handle on. Quine maintains that any conflict with experience at the "edges" will alter conditions at the interior. He sees that the integration of established theories may lead to any one of a number of equally satisfactory accounts of the world, each with its "ontic theory," and,
according to Quine, it makes no sense to ask which one is true. Quine thus takes a conventionalist view regarding theses of ontology.

Empiricism is the theory that all knowledge stems from sense experience and internal mental experience—such as emotions and self-reflection. The empiricist draws his rules of practice not from theory but from close observation and experiment, emphasizing inductive rather than deductive processes of thought. For empiricists, facts precede theories and it is possible for one to be an impartial, objective observer of "facts." Empiricists claim that no one could have knowledge of the world unless he had experiences and could reason, but this does not mean that either experience or reason by themselves could provide a kind of absolute certainty about the world.

Contrasting Senses
As Stephen Brookfield (1983: 16) commented, writers in the field of experiential learning have tended to use the term in two contrasting senses. On the one hand the term is used to describe the sort of learning undertaken by students who are given a chance to acquire and apply knowledge, skills and feelings in an immediate and relevant setting. Experiential learning thus involves a, 'direct encounter with the phenomena being studied rather than merely thinking about the encounter, or only considering the possibility of doing something about it.' (Borzak 1981: 9 quoted in Brookfield 1983). This sort of learning is sponsored by an institution and might be used on training programs for professions such as social work and teaching or in field study programs such as those for social administration or geography courses.

The second type of experiential learning is 'education that occurs as a direct participation in the events of life' (Houle 1980: 221). Here learning is not sponsored by some formal educational institution but by people themselves. It is learning that is achieved through reflection upon everyday experience and is the way that most of us do our learning.

Much of the literature on experiential learning, as Peter Jarvis comments (1995: 75), 'is actually about learning from primary experience, that is learning through sense experiences'. He continues, 'unfortunately it has tended to exclude the idea of secondary experience entirely'. Jarvis also draws attention to the different uses of the term, citing Weil and McGill's (1989: 3) categorization of experiential learning into four 'villages':

Village One is concerned particularly with assessing and accrediting learning from life and work experience....

Village Two focuses on experiential learning as a basis for bringing change in the structures... of post-school education....

Village Three emphasizes experiential learning as a basis for group consciousness raising....

-9-
Village Four is concerned about personal growth and self-awareness.

These 'villages' of approaches retain a focus on primary experience. Jarvis (1995: 77-80) makes the case for a concern for secondary or indirect experience (occurring through linguistic communication).

While there have been various additions to the literature, such as the above, it is the work of David A. Kolb (1976; 1981; 1984) and his associate Roger Fry (Kolb and Fry 1975) that still provides the central reference point for discussion. Following on from Kolb's work there has been a growing literature around experiential learning and this is indicative of greater attention to this area by practitioners - particularly in the area of higher education. David Kolb's interest lay in exploring the processes associated with making sense of concrete experiences - and the different styles of learning that may be involved. In this he makes explicit use of the work of Piaget, Dewey and Lewin.

**David Kolb on experiential learning**

David A. Kolb (with Roger Fry) created his famous model out of four elements: concrete experience, observation and reflection, the formation of abstract concepts and testing in new situations. He represented these in the famous experiential learning circle (after Kurt Lewin):

![Experiential Learning Circle](image)

Kolb and Fry (1975) argue that the learning cycle can begin at any one of the four points - and that it should really be approached as a continuous spiral. However, it is suggested that the learning process often begins with a person carrying out a particular action and then seeing the effect of the action in this situation. Following this, the second step is to understand these effects...
in the particular instance so that if the same action was taken in the same circumstances it would be possible to anticipate what would follow from the action. In this pattern the third step would be understanding the general principle under which the particular instance falls.

Generalizing may involve actions over a range of circumstances to gain experience beyond the particular instance and suggest the general principle. Understanding the general principle does not imply, in this sequence, an ability to express the principle in a symbolic medium, that is, the ability to put it into words. It implies only the ability to see a connection between the actions and effects over a range of circumstances. (Coleman 1976: 52).

An educator who has learnt in this way may well have various rules of thumb or generalizations about what to do in different situations. They will be able to say what action to take when say, there is tension between two people in a group but they will not be able to verbalize their actions in psychodynamic or sociological terms. There may thus be difficulties about the transferability of their learning to other settings and situations.

When the general principle is understood, the last step, according to David Kolb is its application through action in a new circumstance within the range of generalization. In some representations of experiential learning these steps, (or ones like them), are sometimes represented as a circular movement. In reality, if learning has taken place the process could be seen as a spiral. The action is taking place in a different set of circumstances and the learner is now able to anticipate the possible effects of the action. Two aspects can be seen as especially noteworthy: the use of concrete, 'here-and-now' experience to test ideas; and use of feedback to change practices and theories (Kolb 1984: 21-22). Kolb joins these with Dewey to emphasize the developmental nature of the exercise, and with Piaget for an appreciation of cognitive development. He named his model so as to emphasize the link with Dewey, Lewin and Piaget, and to stress the role experience plays in learning. He wished to distinguish it from cognitive theories of the learning process (see Coleman 1976).

Peter Jarvis on Experiential Learning

Jarvis (1987, 1995) set out to show that there are a number of responses to the potential learning situation. He used Kolb's model with a number of different adult groups and asked them to explore it based on their own experience of learning. He was then able to develop a model of which allowed different routes. Some of these are non-learning, some non-reflective learning, and some reflective learning. To see these we need to trace out the trajectories on the diagram he produces.
While this represents a useful addition to our thinking about learning, a number of problems remain. There is still an issue around sequence - many things may be happening at once, but Jarvis' model falls into trap of stage thinking. As with Kolb's work there is a limited experimental base to support it. We can also ask questions as to whether these are different forms or routes - or can they grouped together in a different and more compact way.

**Dunkin and Biddle**

In investigating the complex phenomenon of teaching and learning, Dunkin and Biddle (1974) suggested that the creation of a model was necessary in developing a theoretical underpinning. Cruickshank (1990) supported the development of theoretical models by stating that they were needed in the study of teaching and learning to capture the complex interactions that occur.

Dunkin and Biddle, (1974) presented a model, based on the original work of Mitzel (1960), to guide the study of teaching and learning. In their model, Dunkin and Biddle suggested that the study of teaching and learning involved four major variable types: presage, context, process, and product. Presage variables include those that influence teachers and their teaching behaviors. Context variables are those that involve the background of the learners, including their personality traits and learning styles. Process variables describe the interaction of teacher and learner behaviors in the teaching - learning process. Finally, product variables include the knowledge and skills gained or attitudes modified as a result of the teaching and learning. The learning styles of students, a context variable, have been found to influence the educational process and students’ opportunity to learn (Schroeder, 1993; Claxton & Murrell, 1987).
Researchers (Witkin, 1973; Gregorc, 1979; Garger & Guild, 1984; Witkin, Moore, Goodenough & Cox, 1977) have suggested that learning style was influential in students’ academic achievement, how students learn, students and teacher interaction and in students’ academic choices. Schoeder (1993) acknowledged that accommodating variations in learning style could improve curricula and the teaching-learning process in higher education.

Gregorc (1979) described a person’s learning style as consisting of distinct behaviors which serve as indicators of how a person learns and adapts to learning environments. Others (Dunn & Dunn, 1979; Garger & Guild, 1984) defined learning style as the educational conditions under which an individual is most likely to learn. Witkin (1973) indicated that a learning style influences a student’s preference for particular teaching strategies and learning environments. Therefore, learning style describes how a student learns, not how much he/she learned.

The most extensively researched and applied learning style dimension has been field dependence/independence (Kogan, 1971; Guild & Garger, 1985). Chickering (1976) noted that the field-dependence/independence dimension had major implications for college admissions requirements and for faculty who make decisions about learning environments and practices. In the field-dependence/independence learning style dimension, a person can be categorized as preferring a field-dependent, field-independent, or neutral (possessing characteristics of both field dependent and field-independent) learning style.

Individuals who prefer a field-dependent learning style tend to perceive globally, have a more difficult time solving problems, are more attuned to their social environment, learn better when
concepts are humanized, and tend to favor a “spectator approach” to learning. Additionally, individuals preferring a field-dependent learning style have been found to be more extrinsically motivated and learn better when organization and structure is provided by the teacher (Witkin, Moore, Goodenough et al., 1977).

Conversely, individuals who prefer a field independent learning style tend to view concepts more analytically, therefore finding it easier to solve problems. Individuals preferring a field independent learning style are more likely to favor learning activities that require individual effort and study. In addition, field-independent learners prefer to develop their own structure and organization for learning, are intrinsically motivated, and are less receptive to social reinforcement. (Witkin, Moore, Goodenough et al., 1977).

Research has been conducted to assess the preferred learning style of university students (Anderson & Adams, 1992; Torres & Cano, 1994) and the interaction of teaching approach and learning style on student achievement (Honeyman & Miller, 1998). Additional studies have suggested that students’ learning style influences their cumulative grade point average (Torres, 1993; Torres & Cano, 1994). Cano and Porter (1997) and Cano (1999) reported that students preferring a field-independent learning style were more successful in higher education. The previously identified research has focused on describing how different groups of students learn and their academic performance based on grade point average. What has been lacking is research that focuses on the knowledge and skills learned in an individual course and the factors that influence students’ achievement in that course.

The underlying philosophy of experiential learning cycle models is Deweyian. By Deweyian is meant that Experiential Learning Cycle models emphasize that the nature of experience as of fundamental importance and concern in education and training.

A further, Deweyian assumption underlying experiential learning cycles is that people learn experientially and that some experiences are educative whilst other experiences are miseducative. All experiences are understood to be continuous, that is, each experience influences each future experience.

It is the teacher's responsibility to structure and organize a series of experiences which positively influence each individual's potential future experiences. In other words, "good experiences" motivate, encourage, and enable students to go on to have more valuable learning experiences, whereas, "poor experiences" tend to lead towards a student closing off from potential positive experiences in the future.

Dewey emphasizes the subjective nature of experience - the maxim "one's man's meat can be another man's poison" applies in education and training. Thus, the educator must be constantly alert to individual uniquenesses in the background of the participants, and personality, learning style, etc.
This does not necessarily mean descending into a completely free, unstructured style of education and training. Many educators claim the headiness of completely student-driven education has been tried and failed.

However, there is also much disgruntlement with over structured training approaches (such as competency-based training) and overly prescriptive, restrictive schooling, particularly for non-academically inclined students. What's more, there is an ever-increasing need to provide people with less direct "content" or "information" and more of the underlying skills that foster learning capabilities and life skills.

Learning by doing has been a mantra for educators through the ages. It was recited in the Homeric epics and spoken in the Shakespearean plays, read in Montaigne's essays and enjoyed in Twain's stories. The story of learning is always about doing. The story of learning is a tale of bridging the gap between theory and practice, the cadence to which educators march.
References


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