NOTE:	Clarification of Terms
Must; Shall; Will:	These words or phrases indicate actions or activities that are *essential* or *mandatory*.
Should:	This word implies that it is highly desirable to perform certain actions or activities, but not essential or mandatory.
May or Could; Can:	These words imply freedom or liberty to follow an alternative to the action or activity being presented in a document.

Setting the Stage

With the exception of the Department of Academic Upgrading and the Faculty of Education, it is estimated that 99 percent of all faculty in colleges and universities in North America have no formal training in adult education. In fact, most faculty in Academic Upgrading and Education were trained to teach children (age 5 to 18) and young adults (age 18 to 22) or at least they worked in an institution established primarily to teach one of these two groups. This would mean that very few faculty members in an adult based institution like Columbia College have been formally trained to teach mature adult learners (age 23 to 63 plus). This would mean that most faculty who work in adult education have this one thing in common. It should also mean that although faculty were hired to teach a specific course, for example, in Criminal Justice or Practical Nursing, they have a lot to learn if they wish to be successful in the classroom.

Can you imagine a doctor treating a patient for a disease without first trying to understand who that patient is and what symptoms they are experiencing? Certainly a doctor can prescribe penicillin if a patient says he/she has a fever but that may not be the correct prescription and it may do more harm than good. Therefore, the doctor needs to first take more time to get to know the patient. In this same manner, a higher education teacher or faculty member can prescribe a bunch of lessons for students enrolled in his/her course but if those lessons don't result in educational learning then the faculty member would not have succeeded.

At Columbia College we want all of our students to succeed and we want all our faculty members to succeed. We also know that we can hire faculty members with the foremost experience in their field (e.g., accounting or social work) in the world, but that doesn't mean they will be highly effective or successful at helping students to learn the subject at hand. To create a win-win-win situation for our instructors, students, and the institution, three things have to occur. First, the College has to create a working/learning environment that provides the proper supports for our faculty members and students. Faculty members need assistance in order to acquire the skills needed to be effective in helping students learn. This assistance is provided through the College's Facilitator Handbook. While learners need to have a learning environment that actively and not passively engages them in each class and provides additional support outside the classroom, learners also need clear orientation to the program as a whole and each course internally, an opportunity to develop learning to learn skills; learning resources such as computer; library and learning resources, and an instructor/facilitator who does not lecture (talk) most of the time but instead is skilled at actively and collaboratively engaging students who do most of the talking during each class.

To create this win-win-win environment requires a strong commitment on the part of each new faculty member to learn all he/she can about 1) who are the students enrolled in their course and what are their learning needs, 2) what does engagement of students in active and collaborative learning mean and how can they develop the skills, 3) what is their role as a faculty member both inside and outside the classroom and how can they develop the skills needed to work with other faculty and administrators to ensure their students, the College, and themselves are highly successful.

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This section is designed to introduce new faculty to the field of education and the phenomenon called learning. Hopefully from the introduction it may be understood that the ingredients of education (teachers, students, programs, courses, textbooks, classrooms, libraries, etc.) are one thing while the effective acquisition and demonstration of knowledge and skills on the part of the learner are something quite different. You could have the former without the latter (referred to as institution centered system) and you could have the latter without the former (called learning in spite of the system). However the most successful results occur when the proper attention and development of the former results in clear demonstration of the latter. This is referred to as a student centered system. At Columbia College our commitment is to developing a student centered learning system. It is a system where all the members of the College community work together as a team focused on one simple thing and that is creating a learning environment that ensures each learner is successful, and when they are successful then we are successful. It is a system that understands that if one student fails then we have all failed and quite simply, we don't want to fail.

This section will introduce the concept of intelligence and its relationship to learning, aging, and student success. It will then time discuss memory, cognition, and factors that stimulate and inhibit the brain from learning. From this the reader will then be introduced to a number of theories about learning followed by a section on different approaches to learning both in North America and other cultures in the world.

Intelligence and Aging

At this point we could go into an intense discussion of what intelligence is and what it measures. For example, we could discuss the findings of early researchers such as Spearman (1904, 1927) and Binet (1916) who attempted to understand intelligence. We could also discuss the controversy that arose over cries of racism and inferiority when the first massive use of intelligence tests was administered to men entering the U.S. army in World War One. We could also discuss more recently developed IQ tests such as the Wechsler Adult Intelligence Sale (WAIS III) which appears to assess verbal and reasoning ability related to formal schooling (Deary 2001; Sternberg et al., 2000). We could also discuss Gardner's theory of multiple intelligences which measures not only the standard academic ones such as linguistic, logical-math and spatial but also bodily-kinesthetic and music, two personal intelligences involving a fine-tuned understanding of oneself and other; and naturalist intelligence (Gardner 1993, 1999b). Unlike certain researchers which limited intelligence to more traditional academic abilities such as reading and math, Gardner proposed a much broader view. He further believed that an individual can be highly competent in one or more areas and less competent in others. This went against the notion that people should be given a simple I.Q. test and told they are overall highly intelligent or less intelligent as expressed by a single I.Q. score (Gardner 1999a). Gardner's work has been well received by educators at the primary, secondary and post-secondary levels. It has also been adopted by numerous corporations. One key statement made by Gardner relates to the world of work. In this regard he states, "*what is important is whether people can do the job, not what particular intelligences they happen to be applying*" (Gardner 1999b pg. 198).

In relation to this, Columbia College looked at the standardized student admission test which broadly measures an adult's academic abilities. However, it decided to create its own student application assessment tool for each program of study. To do this the College did an analysis of the academic requirements of each program and designed a tool to determine if the student demonstrated the necessary basic academic skills in high school math, English, science, etc.

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needed to be successful in the program. It then began using these tools to assess each program applicant.

Other researchers have also questioned the traditional view of intelligence which they refer to as "academic intelligence" and come up with a definition that includes problem solving in everyday life. They contend that the problems found in everyday life bear little resemblance to the formal knowledge and skills acquired in most classrooms (Sternberg et al., 2000 p. 32). These views strike home to faculty at Columbia College especially when the College's primary focus is on delivering occupationally focused programs and it wants to be recognized for its students' abilities to become effective practitioners after graduation. It is for this reason that Columbia College requires all students enrolled in professional programs to normally take one cooperative education course during each year of academic study. Its faculty also do their best to include relevant case studies within each course lesson where they vigorously attempt to connect academic knowledge and skills to every day work and life.

It is for this reason that the College maintains a low number of full-time academic faculty in each program of study and instead has chosen to hire a larger portion of highly qualified part-time core faculty who, for the most part, are active practitioners in the field. The College does its best to match the formal education and experiences of our faculty with the course(s) they are assigned to teach. For example, practicing lawyers, accountants, economists, and human resource specialists are assigned to related courses where their formal education and experience match the assigned course(s).

Aging and Activity

Although the average age of an adult learner at Columbia College is about 35 years old, our student body extends from about age 20 to 60 plus. So the natural question some learners may have is: does a 60 year old have the same capacity for learning as a 20 year old? Another more recent question is: does physical activity affect an individual's mental ability to learn?

Researchers have not conclusively agreed that our intellectual ability remains the same regardless of our age. However, this seems more due to such factors as agreeing on the definition of what intelligence is, agreeing on what constitutes aging, and agreeing on which tests actually measure intelligence. What they seem to agree on is that intelligence seems to remain stable throughout almost all of life and may actually increase in some functions. This seems to depend on a person's educational level, experiences in life, and health (Merriam, et al., 2007).

This all seems to be good news for older adults attending Columbia College. What is even better news is the effects exercise has on the brain function and performance. In his 2008 book "Brain Rules", John Medina shared a number of more recent research findings. Put simply, if your lifestyle is more sedentary, then your brain tends to not function as well as others who are more physically active. In addition, the more you exercise, the lower your risk of heart attacks and strokes.

Medina, who is professor of bioengineering, further states that exercise dramatically improves long term memory, reasoning, attention problem solving, and so called fluid-intelligence (e.g., reasoning quickly, and abstract thinking) (pg. 14).

He went on to state that two to three periods a week of 45 minutes of aerobic strengthening exercises is more ideal but that simple daily walks are of definite value. Medina went on to state

that regular aerobic exercise reduces the odds of dementia by almost 50 percent and Alzheimer's by more than 60 percent (pg. 16).

These findings indicate that not only should our faculty and staff engage in regular physical exercise but so should our students. These activities may be as simple as regular daily walks but may also suggest that faculty may want to introduce a few minutes of exercise to each hour of class. The College may even want to set up regular classrooms with exercise bikes and have students slowly operate the bike while engaging in an academic lesson. Exercise will benefit faculty, staff, and students who engage in it.

Further, regular exercise will reduce student stress which will enable them to relax and focus on mental work more effectively. It will actually improve short and long term memory. It will even reduce depression and the likelihood of common colds which can interfere with learning. One study even showed that adults who were experiencing high stress actually performed 50 percent poorer on certain cognitive tests than adults with low stress (Medina, pg. 178). So how much better would students do on quizzes, final exams and National Exams if they learned to relax? How would this affect learning in a classroom, lab or workplace and what could we do to create a more relaxed and less stressful learning and working environment at Columbia College?

Memory and Learning

To assist adults in their ability to retain new knowledge, faculty members may engage in many different activities. These include things as simple as presenting new items on an overhead in the form of a chart, picture, or diagram (minimal written sentences). It may also be valuable to present a brief outline of the lesson on the whiteboard and then refer back to it and check it off as the lesson proceeds. Faculty may use mnemonics and rehearsal strategies as well but the best thing to do is give learners an opportunity to discuss and apply new knowledge as soon as possible. This will allow new items to sink more deeply into long-term memory. Learners should also be encouraged to take notes that are relevant to them for later review. Bee and Bjorklund (2004 pg. 145) found the activity of making lists while studying also improved recall.

It should always be kept in mind that the real purpose of education is not to repeat memorized facts on an exam in order to pass a course and then forget it, but it is to gain new knowledge, skills, and professional behaviour that will assist the learner to perform responsible function and activities in their life as professional members of society and members of the workforce. It should also be understood that the human mind does not remember lists for very long before the list is forgotten. However, it does well at remembering new items if it is given an opportunity to apply the new information to solve a problem (preferably a real problem). This may give learners an opportunity to relate new items to their memory of existing items and an opportunity to replace or fit new items into existing memory.

Over the years a number of tools have been developed to assist learners to understand their styles of learning with the intent of improving memory. These include the Allison and Hayes Cognitive Style Index, Apter's Motivational Style Profile, Vermont's Inventory of Learning Styles, Myers-Briggs' Type Indicator, and Kolb's Learning Style Inventory. However, it was reported by Cassidy (2004) and later by Della Porta (2006) that all of these instruments required further empirical work in order to meet tests of research reliability and validity.

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It should further be noted that a great deal has been written over the years about our brains being divided into two neat halves. Where the left brain is the seat of logic, the right brain holds our creative and artistic abilities. The reality is that this is simply a myth. The brain is a very complex and dynamic structure and like our fingerprints, no two brains are alike (Medina 2008).

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Philosophers have been writing about learning theory since Plato and Aristotle. Plato believed that physical objects have corresponding abstract forms. He further believed that we can come to know them through introspection or self-analysis. Aristotle, on the other hand, believed that all one's knowledge comes through his/her senses. In the last century a number of learning theories have been developed. This section will introduce the five leading traditional learning theories that clearly present different assumptions about learning, beginning with the Behaviorist Orientation and concluding with the Constructivist Orientation.

Behaviorist Orientation

John B Watson developed the Behaviorist Theory. Contributors to this work included Thorndike, Tolman, Guthrie, Hull and Skinner (Ormrod 1995). These investigators basically held three basic assumptions about the process of learning. This first is that learning is evident through a change in behavior. Secondly, they believe that what an individual learns is a result of what they experienced in the environment around them. It is not a result of their own thinking. Finally, they believe that the shorter the time interval between two similar events, as well as any means that will increase the likelihood that an event will occur again (reinforcement), will increase learning (Grippin & Peters 1984).

Thorndike developed a concept he called connectionism or stimulus – response theory. This theory holds that learning will eventually occur when sufficient stimuli begin to consistently elicit the desired response. Pavlov added the concepts of reinforcement, conditional stimulus, and extinction to Thorndike's basic notion. Skinner contributed operant conditioning to this list of learning theories.

Behaviorist orientation is the philosophy that most underlines adult career education, technical and vocational education, and human resource development. For example, vocational education identifies memory skills needed to perform an occupation and then teaches those specific skills. Human resource development focuses on skills needed to improve performance. Competency-based instruction follows the behaviorist orientation.

Humanist Orientation

Humanists have the opposite view of behaviorists, in that they refuse to believe that behavior is simply predetermined by one's environment. Instead they believe that learners have the ability to choose their own destiny. They believe that learners are free to become what they choose to become and have the potential to grow and develop without external influences (Rogers, 1983; Maslow, 1970). These are among the tenets that most adult learning theory is based on.

Maslow is considered the founder of humanist theories. He believed the goal or purpose for humans to learn is self-actualization which is at the top of his list of what motivates learners. His hierarchy, describing why people are motivated to learn, is presented below, starting with the most primary motivation related to hunger and thirst.

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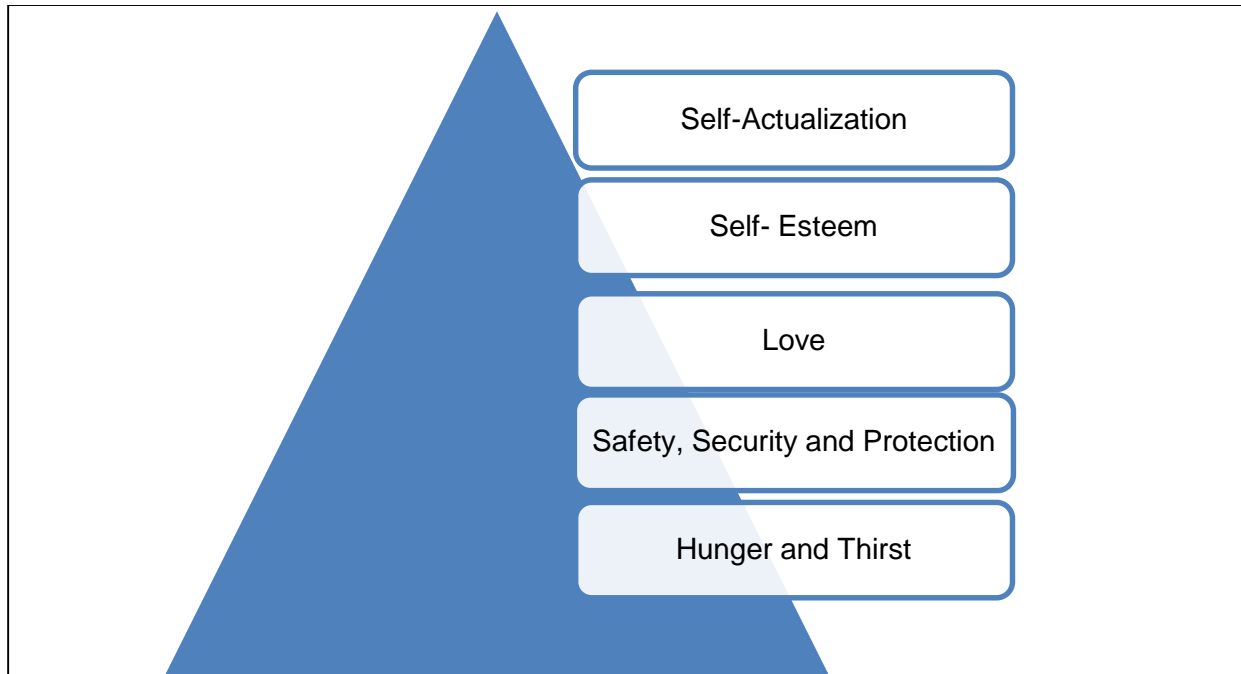Approved by: Tom Snell
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Figure 1: Maslow's Hierarchy of Needs

Sahakian (1984 p. 439) outlined a list of ten other learning goals that Maslow identified:

1. The discovery of a vocation or destiny
2. The knowledge or acquisition of a set of values
3. The realization of life as precious
4. The acquisition of peak experiences
5. A sense of accomplishment
6. The satisfaction of psychological needs
7. The refreshing of consciousness to an awareness of the beauty and wonder of life
8. The control of impulses
9. The grappling with the critical existential problems of life
10. Learning to choose discriminately

Carl Rogers (1983) developed a client-centered theory that is very similar to the principles of student-centered learning which Columbia College follows today. Client-centered theory is concerned with personal growth and development and has the following characteristics (pg. 20):

1. Personal involvement: The affective and cognitive aspects of a person should be involved in the learning event.
2. Self-initiated: A sense of discovery must come from within.
3. Pervasive: The learning "makes a difference in the behavior, the attitudes, perhaps even the personality of the learner."
4. Evaluated by the learner: The learner can best determine whether the experience is meeting a need.

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5. Essence is meaning: When experiential learning takes place, its meaning to the learner becomes incorporated into the total experience.

In closing, it should also be noted that Malcolm Knowles' andragogy theory (1968) and his view of self-directed learners (1975) are also grounded in humanist theory and are foundational to the design, development and delivery of all programs at Columbia College.

Knowles first advanced his theories in the late sixties. They consisted of four assumptions:

1. As a person matures, his or her self-concept moves from that of a dependent personality toward one of a self-directing human being.
2. An adult accumulates a growing reservoir of experience, which is a rich resource for learning.
3. The readiness of an adult to learn is closely related to the developmental tasks of his or her social role.
4. There is a change in time perspective as people mature – from future application of knowledge to immediacy of application. Thus, an adult is more problem centered than subject centered in learning. [Knowles, 1980, pp. 44-45]

Later Knowles introduced a fifth and sixth assumption:

1. The most potent motivations are internal rather than external (Knowles & Associates, 1984, p. 12).
2. Adults need to know why they need to learn something (Knowles, 1984).

Cognitive Orientation

A Gestalt Psychologist, Bode criticized the behaviorist theories as being too concerned with external forces to explain learning. Instead, Gestaltists view learning as looking at the whole rather than specific parts. They look for patterns as opposed to single isolated events (Hergenhahn and Olson, 2005). The Gestalt views have come to be known as cognitive (or information-processing) learning theories. Two key features of this orientation are that the human memory system activity processes information and that prior knowledge plays a critical role in learning. Cognitivists believe that one's perception and insight are critical to giving meaning to a subject. Humans don't simply respond to stimuli, they interpret their senses and reflect on their experiences. In essence they are primarily in control of what they learn. They will often reorganize an experience after reflection in order to make sense of it. They will 'come to see' a solution to a problem after cognitively thinking about all the factors associated with it and considering various solutions (Hergenhahn and Olson 2005, p. 273). This focus on the thought processes of the individual is central to the cognitive orientation and very important to faculty at Columbia College.

This is a critical reason why Columbia College has adopted a facilitational model where faculty are constantly asking the learners questions regarding what they are thinking. We encourage them to make observations, question what they don't understand, share their feelings and contribute their own thoughts. We want students to be actively (mentally) engaged in the learning process not simply receptacles receiving information.

At Columbia our faculty wants learning to be meaningful to learners. Ausubel (1967) distinguished meaningful learning from rote learning. He states that meaningful learning occurs

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when something being learned can be connected to a concept which already exists in one's mind (cognitive structure). In contrast, rote learning is something that does not connect with an existing concept and is easily forgotten. Therefore, to make learning more meaningful, faculty at Columbia College tries to help learners to connect new concepts with knowledge, skills and experiences that currently exist with learners. To achieve this students are often engaged in case studies, activities, labs, or cooperative education experiences, where they have an opportunity to experience new knowledge through application, observation, discussion, reflection, synthesis, and evaluation (Bloom's Taxonomy).

Smith (1982, Smith and Associates 1990) explored in considerable depth the importance of "learning how to learn" and its relevance to adult learning. Smith contends that learning how to learn consists of possessing or, if needed, acquiring the knowledge and skills needed in order to be a more capable learner and therefore a more successful learner. Columbia College's faculty feels so strongly about the importance of these skills that it makes a free learning-to-learn course available to learners prior to starting their programs. This course is a required course in most programs at Columbia College.

Social Cognitive Orientation

Social Cognitivism posits that each of us learns from observing other people and therefore this occurs in a social environment. We acquire knowledge, skills, attitudes, and behaviors by observing and listening to others. We learn about the appropriate use of certain behaviors by watching others and deciding whether to model their behavior based on our expected outcome (Schunk, 1996 p. 102).

Bandura moved this theoretical orientation from a social context to a social cognitive context when he focused a lot more on the cognitive process than on just behavior. He contended that one can learn from behavior without initiating it (Lefrancois, 1999).

Bandura's views are of importance to adult learning and therefore Columbia College since it recognizes that the environment influences the learner and the learner influences the environment. In this regard social cognitive theory and behaviorist theory have some connectivity. Bandura (1986) sees learning as a three-way interactive model that includes the individual, the environment, and learning.

This is why Columbia College faculty encourages learners to share their thoughts with one another and work together in a collaborative manner. This collaborative interaction may occur while studying a case, sharing views, discussing solutions, and making decisions. It may occur in or out of the classroom, lab, tutorial, cooperative education placement, or in the community.

Constructivist Orientation

According to constructivist theory, learning is basically a process in which one constructs meaning from what one experiences. Some constructivists view learning as an individual process while others see it as a social process. Regardless of where one stands, all constructivists view learning as an active process where learners are engaged actively on their own or with others in learning as opposed to passively acting as a receptacle (e.g., sitting at a desk listening to a lecture). Consequently, learning is a result of collaborative and/or cooperative dialogue. "*One learns through engaging, incorporating, and critically exploring the*

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views of others, and new possibilities of interpretations are opened through the interaction" (Gergen 1995, p. 34).

Experiential learning and transformational learning are two examples of constructivist learning theories. Both are discussed in greater depth in this document. Other forms of constructivist learning include reflective practice, communities of practice, and situated learning.

Our faculty at Columbia College strongly supports the constructivist orientation as noted earlier. They are also supportive, in many respects, of the humanist, cognitivist, and social cognitive orientations. The behaviorist orientation receives support related to skill development and some elements of human resource training.

The following chart that compares the five learning orientations was presented by Merriam et al in *Learning in Adulthood* (2007).

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Table 1: Five Orientations to Learning

Aspect	Behaviorist	Humanist	Cognitivist	Social Cognitive	Constructivist
Learning theorists	Guthrie, Hull, Pavlov, Skinner, Thorndike, Tolman, Watson	Maslow, Rogers	Ausubel, Bruner, Gagne, Koffka, Kohler, Lewin, Piaget	Bandura, Rotter	Candy, Dewey, Lave, Piaget, Rogoff, von Glaserfeld, Vygotsky
View of the learning process	Change in behavior	A personal act to fulfill development	Information processing (including insight, memory, perception, metacognition)	Interaction with and observation of others in a social context	Construction of meaning from experience
Locus of learning	Stimuli in external environment	Affective and developmental needs	Internal cognitive structure	Interaction of person, behavior, environment	Individual and social construction of knowledge
Purpose of learning	To produce behavioral change in desired direction	To become self-actualized, mature, autonomous	To develop capacity and skills to learn better	To learn new roles and behaviors	To construct knowledge
Instructor's role	Arrange environment to elicit desired response	Facilitate development of whole person	Structure content of learning activity	Model and guide new roles and behaviors	Facilitate and negotiate meaning-making with learner
Manifestation in adult learning	• Behavioral objectives • Accountability • Performance improvement • Skill development • HRD and training	• Andragogy • Self-directed learning • Cognitive development • Transformational learning	• Learning how to learn • Social role acquisition • Intelligence, learning, and memory as related to age	• Socialization • Self-directed learning • Locus of control • Mentoring	• Experiential learning • Transformational learning • Reflective practice • Communities of practice • Situated learning

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Experiential Learning

Many educators have emphasized the significant value that is derived by the learner when they have an opportunity to personally experience something. Learning by experience tends to engage learners not only mentally but also physically and emotionally. We tend to construct meaning from our experiences individually as well as collaboratively with others. The more real life the situation the more meaningful the learning. Learning that is more meaningful is reflected upon more deeply, it changes ones views and behaviors, and it is retained by the learner for a longer period of time. To go further, John Dewey (1938) postulated that "*all genuine education comes about through experience*" (p. 13).

Kolb and Kolb (2005) studied, among others, the writing of John Dewey, Jean Piaget, and Carl Rogers and developed six propositions of experiential learning. First, they stated that "*learning is best conceived as a process, not in terms of outcomes*" (p. 194). Second, "*learning is relearning*" (p. 194). This requires getting students to share and discuss their current views and then, if needed, modify them. Third, learners need to move between dialectically "*opposing modes of reflection and action and feeling and thinking*" (p. 194). Fourth is the fact that learning is holistic and not just mental. The fifth proposition states that learning consists of interactions between each learner and his/her surrounding (environment). Sixth is the fact that learning is by nature constructivist.

Faculty Role

Experiential learning is a critical underpinning at Columbia College where faculty are referred to as facilitators and not instructors. This is because their job is to help students understand a subject and related concepts by interacting, experiencing, and ideally emotionally feeling what they are learning. Ideally, this is done best by experiencing it in action. It is not done by listening, writing notes and repeating what was stated in a lecture. Our faculty want students to discuss what they are experiencing with others. They want students to take the time to reflect on what they are experiencing in a trusting and open environment. Our faculty also act as catalysts who involve students in role-playing, simulations, demonstrations, presentations, debates, discussions, and many problem-based activities, often associated with solving cases (case study) or dilemmas. By actively engaging learners to use as many of their six senses as possible we are creating a holistic environment that fosters greater breadth and depth of learning and therefore greater value and meaning. Our faculty also act as coaches and mentors. Whereas coaching is normally associated with learning specific skills, mentoring typically tends to be guiding (Fenwick, 2003 p. 117). When faculty are not engaging in personal interactions with learners, they may be found cheering them on and celebrating their successes. Our faculty also take on the role of evaluator and assessor. Whereas, evaluation may include quizzes, tests, exams, demonstrations, and reporting; assessment may include portfolios, presentations, journals, learner self-analysis, and peer evaluation.

Our faculty may assist a group of learners involved in cooperative education (or professional practice) to discuss what they are being challenged by and collectively come up with relevant solutions. Fenwick (2003) refers to this as a community of practice. Through community of practice our faculty are able to help students who become stuck or immobilized to move forward.

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There are times when faculty at Columbia assist students who are encountering unconscious blocks to learning (Dirkx, 2001a, 2001b). Faculty do this by encouraging students to pay close attention to dreams, behaviors, and unusual images that come to their minds. Faculty listen and compassionately try to help them deal with their emotions.

Our faculty also try to assist learners whose development is being impeded by the effects of power or abusive relationships in their lives. This is often a most delicate and challenging situation as it may be culturally, religiously, or familial based. Students are often referred to experts in the field when these situations are experienced.

Faculty Procedures

Most of the experiential learning literature focuses on procedures that practitioners use. This section describes two of them in more detail: reflective practice and cognitive apprentice.

First, reflective practice allows individuals to draw conclusions or make decisions from complex or murky situations that are based on prior knowledge and experience. "*Reflective practice is a deliberate pause to assume an open perspective, to allow for higher-level thinking processes. Practitioners use these processes for examining beliefs, goals, and practices, to gain new or deeper understandings that lead to actions that improve learning for students. Actions may involve changes in behavior, skills, attitudes, or perspectives within an individual, partner, small group, or school*" (York-Barr, Sommers, Ghere, & Montie, 2001, p. 6). Quite clearly the expected result of reflection is to gain better understanding and insight, and as a result, make a more effective decision that will lead to a successful conclusion.

York-Barr et al. (2001) developed a four stage process to guide the development of reflection. First, an individual must select an event and ask "what happened". Second, the individual needs to analyze and interpret the event. For example they need to ask why things happen the way they did. Why did they and others act the way they did? Did other previous experiences affect their or my behavior? Did the context of the event have an effect on the outcome? Third, individuals need to try to make sense of what they experienced (the event). To do this they need to ask the following types of questions. Exactly what did they learn from the event? What could they do differently or better that would improve the outcome? How could this affect their future situation, relationship, outcome? Forth, individuals need to think about the implications for the future. In this regard they need to ask such questions as what are they going to think about and do the next time the event occurs. What could they do to ensure they handle this type of event more effectively in the future?

The other procedure that is most relevant to faculty at Columbia College is the cognitive apprenticeship method. "Cognitive apprenticeship methods try to enculturate [learners] into authentic practices through activity and social interaction in a way similar to that evident – and evidently successful – in craft apprenticeship" (Brown, Collins, & Duguid, 1989, p. 37). As a result of the cognitive aspect of an apprenticeship (for example, a cooperative education field placement), learners are expected to think in much different ways about what they are learning or skills they are developing. According to Fenwick (2003), learners are treated as "independent reflective contractors of knowledge" (p. 152).

Brandt, Farmer, and Buckmaster (1993) developed a five phase model of cognitive apprenticeship (see Table 2).

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Table 2: Cognitive Apprenticeship Phases

	Role of Model	Role of Learner	Key Concepts
Phase 1: Modeling	Model real-life activity that learner wants to perform satisfactorily. Model states aloud the essence of the activity. He or she can include tricks of the trade.	Observe performance of total activity, not merely the individual steps. Develop a mental model of what the real thing looks like.	Articulation, domain-specific heuristics
Phase 2: Approximating	Provide coaching to the learner. Provide support when needed.	Approximate doing the real thing and articulate its essence. Reflect on the model's performance. Use self-monitoring and self-correction.	Scaffolding, coaching
Phase 3: Fading	Decrease coaching and scaffolding.	Continue to approximate the real thing. Operate in increasingly complex, risky, or ill-defined situations. Work individually or in groups.	Fading
Phase 4: Self-directed learning	Provide assistance only when requested.	Practice doing the real thing alone. Do so within specified limits acceptable to profession and society.	Self-directed learning
Phase 5: Generalizing	Discuss the generalizability of what has been learned.	Discuss the generalizability of what has been learned.	Generalizability

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1 Brandt, Farmer, & Buckmaster, 1993, p. 71.

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In phase one the model demonstrates the activity to the apprentice (student). In phase two the learner attempts to perform the activity while the model provides feedback, support and encouragement. In phase three, the model clearly removes supports while learner works in less defined situations. In phase four the learner performs his/her specified duties independently and only receives support from the model when requested. Finally, in phase five the generalizability of the skills are reviewed and the learner is encouraged to apply them in other situations or environments.

Columbia College has added a sixth phase to this model. It is an evaluations phase. During this phase various stakeholders (including the employer and student) are normally asked to provide written feedback to the apprenticeship (lab, simulative experience, or cooperative education). Faculty members may also discuss these apprenticeships in class as students are moving through each stage of development.

Learning from Story Telling, Narratives, Journals, and Role Playing

A narrative is basically a story. It is "the oldest and most natural form of sense making" (Jonassen & Hernandez-Serrano, 2002, p. 66). It is a tool that helps the writer make sense of what he/she has observed or experienced. Narrative learning is like spiritual learning in that it is nonscientific. "Narrative knowing … is concerned more with human meaning than with discrete facts, more with coherence than with logic, more with sequences than with categories, and more with understanding than with predictability and control" (Rossiter 2005, p. 419). Narratives may be divided into four types. They include cultural, familial, individual and organizational.

A journal is a form of narrative (Kerka, 2002, p. 1). A diary may be considered a more structured form of a journal (Rosenwald 1993). Kerka (2000, p. 1) provided the following assumptions about journal writing from an educational perspective:

- Articulating connections between new and existing knowledge improves learning.

- Writing about learning is a way of demonstrating what has been learned.

- Journal writing accentuates favorable learning conditions – it demands time and space for reflection, encourages independent thought and ownership, enables expression of feelings, and provides a place to work with ill-structured problems.

- Reflection encourages deep rather than surface learning.

Storytelling is another form of narrative. It is a valuable way to help others learn. Students may engage in storytelling as might faculty. In Columbia's multicultural classrooms it can be a most valuable method of making learning meaningful. It is argued by Jonassen and Hernandez-Serrano (2002) that stories presented in the form of case studies are a valuable facilitational technique. Baumgartner & Merriam (1999) state that storytelling may be modified and come in many forms such as role-playing, critical incidents, case studies, and examples from work. Faculty at Columbia College will often share stories from their professional experience and use them to help students better understand a concept or theory. This is one of the reasons why Columbia College attempts to employ primarily part-time core faculty who are current practitioners. Jonassen and Hernandez-Serrano (2002) cite several studies that speak to the value of this practice. They state that "*stories can function as a substitute for direct experience, which novice problem solvers do not possess. Supporting learning with stories can help students to gain experience vicariously*" (p. 69).

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Students may also learn from the experiences of other students. A student's life experience can often become a valuable learning experience. It becomes a valuable way to understand by seeing a situation from another person's perspective.

Sometimes the only way to help an individual to understand or learn from a situation is to engage him/her in role reversal, where he/she is asked to try to see a situation from another perspective. Often faculty at Columbia will set up a role playing situation and have students take the role opposite their own view. This experience often forces them to see a situation from a perspective they had not considered and as a result changes their minds or at least affects strongly held views. Once they complete the role play situation they are often asked to share how it affected them personally and their views regarding the topic at hand.

In one form of role playing or role reversal students will be asked to take on the role of the facilitator and to present a specific topic to a group of students. For example, in a lab one student may be asked to present a newly acquired technique or procedure while other students will ask questions for understanding and clarity. Once concluded they may be asked to rate the presenter informally or by using a structured evaluation tool. In some cases students will be divided into smaller groups and take turns playing the role of presenter. Once this exercise is completed the class facilitator will ask the class what they learned from the situation and how it could have been improved. By getting students to take on a more formal evaluative role in the classroom, Columbia's faculty help students to grow mentally and see things from many perspectives. They learn that teaching and/or evaluating others requires them to better know and understand the subject matter themselves. A group of learners, who are told that they may be asked to present a specific topic to another group of learners in class, will take a whole different view of their work assignment than one who expects to simply write a quiz and participate in one or more case study discussions.

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