ADULT TEACHING AND LEARNING
USER'S GUIDE

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PREFACE

This *User's Guide* is intended to serve as a tool for new and experienced faculty members as they reflect on their practice as instructors. Additionally, it provides detailed descriptions of each step of the ELM, and offers suggestions regarding how these can be implemented effectively in a US Army classroom.

Based on comments by participants in faculty development courses, it is clear that some confusion about the ELM exists among both new and experienced faculty. New instructors have difficulty realizing the flexibility inherent in the model; more experienced instructors tend to challenge the model, or at least components within the model, as rigid, overly simplistic, and not reflective of the dynamics within a modern, diverse classroom.

Since the early days, the use of the ELM has grown in its understanding about how the model can be used most effectively. What is presented here, we believe, is a more comprehensive and sophisticated interpretation of the ELM than was initially taught. As currently used, the ELM provides a sound basis for lesson design and development and serves as a common framework for lesson plan construction. While the model provides a structured method for writing lessons, it is a versatile teaching approach that accommodates a wide range of effective teaching techniques. The ELM provides a flexible framework for classroom management that is responsive to students' varied learning paths within a diverse classroom setting.

It is hoped that a periodic review of this *User's Guide* will help prevent the instructor from falling into bad habits and will trigger new ideas about how to conduct your own classes more effectively.

ABBREVIATIONS

AAR	After Action Review
AIS	Accountable Instructional System
ASAT	Army Systems Approach to Training
CE	Concrete Experience (a step of the ELM)
CGSC	U.S. Army Command and General Staff College
DAPS	Defense Automation Printing Service
DC	Deputy Commandant
ELM	Experiential Learning Model
ELO	Enabling Learning Objective
GNI	Generalize New Information (a step of the ELM)
ILE	Intermediate Level Education
IMS	International Military Student
IPR	In-progress Review
JPME	Joint Professional Military Education
P&P	Publish and Process (a step of the ELM)
PJE	Program for Joint Education
QAO	Quality Assurance Office
SME	Subject Matter Expert
TLO	Terminal Learning Objective

GLOSSARY

Action Statement. An element of the learning objective. The learning objective action statement specifies what a student is to be able to do as a result of the educational experience.

Advance Sheet. Derived from the lesson plan. The advance sheet provides the student with key information about the lesson scope, learning objectives, and study requirements. For CGSC courses, there are two types of *advance sheets*--block advance sheets and lesson advance sheets.

Affective Domain. One of three learning domains defined in Bloom's Taxonomy. The affective domain deals with the emotional, or feeling, aspect of learning and offers the means for the student to internalize the new material that the teacher is presenting. Without this internalization the new material does not become part of the student. The affective domain consists of five levels: receiving, responding, valuing, organization, and characterization of a value or value complex. The progression through these five levels is from simply being aware through an organized internalization of an attitude or value which becomes the defining characteristics of that person.

Analysis Phase. First phase of the Accountable Instructional System (AIS). The analysis phase is the critical link between identifying the educational requirements and developing the instruction. The phase begins with the learning objective action statement or given topic. In this phase, the lesson author must determine what to teach, how much to teach, the students' backgrounds, and the available resources.

Apply. Fifth and last step of the CGSC Experiential Learning Model; the *check on learning.* The *apply* is similar to the Assessment, in that it is linked to ELO standards; however, the *apply* should not be delayed. The *apply* serves as a means for the verification of students' achievement of the ELO standards before they leave the classroom. Instructors have significant latitude on how to accomplish this and may use such techniques as "muddiest point," "one-sentence summary," and other approaches. If the *apply* indicates that students are unclear about key aspects of the lesson content, the instructor can return to the *generalize new information* (GNI) step to readdress those key points and ensure the students are adequately prepared to complete any future assessments that may pertain to the lesson content.

Assessment. Measurement of student learning as defined in the Assessment Plan (Appendix A of the Lesson Plan). Assessment may be either formative or summative. Although similar to the *apply* step of the ELM, Assessment is more formal, and is mandated by the college. It may be delayed, as with a writing assignment due at a future time, or for a future exercise that serves as the means to assess the mastery of skills taught in the lesson. Assessment should not be confused with *evaluation*, which examines programs and courses—not students.

Cognitive Domain. One of three learning domains defined in Bloom's Taxonomy. The cognitive domain deals with the thinking aspect of learning: acquiring, recognizing, and manipulating facts, developing the intellectual skills to effectively breakdown these facts into their components, and to recognize the relationships of the components and how they are organized. The cognitive domain is described by six developmental levels: knowledge, comprehension, application, analysis, synthesis, and evaluation.

Concrete Experience (CE). First step of the CGSC Experiential Learning Model. The *concrete experience* serves as a trigger of past experience and knowledge, as a focusing mechanism for the lesson that follows, and as a support for the teaching of new content. The CE appeals to the student's affective domain behavior of "valuing" or higher while providing a common "experience" that is connected to the new lesson content.

Condition Statement. An element of the learning objective. The condition statement describes the learning environment. It states what will be provided (a scenario, small group), what will be denied (without references, closed-book), and the time constraints, if any.

Design Phase. Second phase of the Accountable Instructional System (AIS). The design phase uses the results of the analysis phase to help identify the lesson components. Topic lists are translated into realistic enabling learning objectives (ELOs) and standards that define the ELO action statement.

Develop Phase. Third phase of the Accountable Instructional System (AIS). In this phase, the ELO, standards, and lesson content outline are converted into an actual lesson plan and advance sheet.

Develop. Fourth step of the CGSC Experiential Learning Model. This step is student-centric. It provides students a final opportunity to express how the lesson content will be of value to them in the future.

Evaluation. Examination of the effectiveness of a course or program. Evaluation may be either formative or summative. Evaluation should not be confused with *assessment*, which measures the performance of students.

Evaluation Phase. Fifth phase of the Accountable Instructional System (AIS). Although depicted last in the AIS, this is actually a continuous process that consists of data collection and analysis to determine effectiveness and value of a course or program. It includes both formative and summative components. Summative evaluation may be internal (inside the schoolhouse) or external (outside the schoolhouse).

Experiential Learning Model (ELM). More precisely, the CGSC Experiential Learning Model. The ELM is based on the work of such prominent educational theorists as John Dewey, David Kolb, Jean Piaget, Kurt Lewin, and others and is the principle tool for the educational process at CGSC. The ELM also serves as a framework for planning the conduct of a lesson. It consists of five steps: *concrete experience* (CE), *publish and process* (P&P), *generalize new information* (GNI), *develop* (value), and *apply* (*check on learning*).

Formative Assessment/Evaluation. Conducted during the conduct of the lesson (assessment) or course (evaluation). Formative assessment or evaluation allows for intermediate feedback to permit the application of corrective action that will improve the final result. An example is a mid-term exam which can help students understand where they need to focus their efforts to improve their final grade.

Gap Analysis. A component of the Analysis Phase. Gap Analysis compares the desired educational outcome of the Topic Analysis with the student's pre-instruction foundational knowledge as determined within the Target Audience Analysis.

Generalize New Information (GNI). Third step of the CGSC Experiential Learning Model. The GNI is where the lesson content is taught. The content to be taught must focus on those aspects that are essential to achieve the learning objective standards. Both content and methodology must be considered during GNI to ensure achievement of the appropriate learning level. GNI can include a wide variety of techniques including lecture, discussion, demonstration, role-play, simulation, case study, and other approaches.

Goal Analysis. A component of the Analysis Phase. Goal analysis identifies the lesson goals and how the lesson supports the Block Terminal Learning Objective.

Implementation Phase. Fourth phase of the Accountable Instructional System (AIS). This phase has two distinct components. Component 1 ensures instructors understand the course vision,

content, delivery methodology and are ready to teach. Component 2 of the implementation phase is the actual conduct of the course.

Learning Level. An element of the learning objective based on Bloom's six cognitive domain levels of learning.

Learning Objective. A precise statement of the student's expected performance (action), the learning environment (condition), and the required specificity (standards) for student performance.

Lesson Plan. The author's means of communicating lesson intent to the instructors. The lesson plan organizes what is presented in the lesson as well as when and how it is to be presented.

Milestone Plan. A component of the Analysis Phase. The milestone plan defines deadlines associated with such aspects as obtaining copyrights and publication requirements and serves as a road map for managing the development process.

Publish and Process (P&P). Second step of the CGSC Experiential Learning Model. The *publish and process* step is the critical link between the *concrete experience* and the *generalize new information*. It consists of two distinct components: the "publish" surfaces the student reactions to the CE, reflecting their experience and knowledge of the topic while the "process" initiates a reconciliation of where the student is and, where the student should be at lesson end. The P&P may also reveal student bias and other preconceptions that must be dealt with if learning is to occur.

Resource Analysis. A component of the Analysis Phase in which the author identifies resources and constraints.

Standard. An element of the learning objective. The standards help to define the action statement by specifying what constitutes successful accomplishment of the learning objective. Standards provide the criteria used to measure if and how well the student mastered the task.

Summative Assessment/Evaluation. Conducted at the conclusion of the lesson (assessment) or course (evaluation). Summative assessment or evaluation does not allow for changes or corrective action to the current situation, but may inform future changes to assessment instruments or curriculum. An example is a final exam—students have no opportunity to improve their grades following this summative assessment.

Target Audience Analysis. A component of the Analysis Phase. Target audience analysis describes the adult learners and their existing experiences, knowledge, and abilities.

Topic Analysis. A component of the Analysis Phase. Topic analysis identifies the behaviors and abilities students must master to meet the educational outcome described by the ELO action statement or assigned topic for an elective.

CHAPTER 1—FOUNDATIONS OF ADULT LEARNING THEORY

The foundations of adult learning can be traced back to Plato, Socrates, and Aristotle, although the theory relating to adult learning is somewhat more contemporary. At one point in the development of learning theory it was either believed or assumed that all the learning that was possible in an individual's lifetime occurred by a certain age. That age may change a little, but for most people learning was considered over and done by the time they became adults. Higher education was reserved for the elite in society who were not required to work to earn a living, and being able to write one's name and do simple arithmetic was sufficient for life's challenges. We have certainly come a long way since that time.

The popular saying among trainers and educators is that we "Train for certainty, educate for uncertainty," which seems to ring true in most cases. Upon closer examination, however, it might be worthwhile to ask if we wouldn't also "educate for certainty" if we knew what we needed the education for? And don't we also "train for uncertainty" in a larger sense in many cases, such as battle drills, repetitive acts that may be required under unknown and uncertain conditions? In fact, it may be more accurate to say we train and educate for the same reason, an uncertain and possibly dangerous future. As Bertrand Russell, the noted British philosopher said, "The demand for certainty is one which is natural to man, but is nevertheless an intellectual vice."

Malcolm Knowles is often referred to as "The Father of Adult Education" for his work in adult education as a body of study separate from the teaching and learning of children. He is perhaps most well-known for his description of "andragogy," or teaching adults, as different from "pedagogy," or the teaching of children. His earliest works established a clear difference between the two, a position that evolved over several decades to the point where there are still two perspectives, but they are more similar than different. He is known for having said that "Adults are what they have done," which is to say that adults are defined by their experiences. One student asserted that Knowles's version is incomplete and offered a revision: "Adults are what they *think* they have done." This interpretation suggests that people's perceptions of themselves and their experiences may not be the same as an external observer's. Extending that idea, another student proposed a further refinement to the same quote: "Adults *think* they are what they *think* they have done," which calls into question the whole concept of reality versus perception. The key to Knowles's statement is that experience impacts who we are, whether that self-perception is accurate or not, which relates back to his original differentiation between teaching adults and teaching children. The main difference he described is that teaching children doesn't hinge as much on their previous experiences because they are too young to have much experiences upon which to base their future learning, unlike adults who have a lifetime (however long that may be) of experiences to which they can link.

Malcolm Knowles proposed a half-dozen "Assumptions about Adult Learning" that communicate his perspective on how adults learn. The first one is that "Adults are increasingly self-directing." In Knowles's view, adult learners are able to decide what they need to learn and will take appropriate action to learn it. They don't necessarily need to be motivated or told when they need to learn something; they can make that determination for themselves. Many would argue the validity of this assumption, saying that even adults sometimes need guidance and direction.

His second assumption is that the "Reservoir of prior experience provides a rich resource for adult learning." This is probably also arguable, depending on the individual and the nature of his or her experiences. Not all adults have had positive prior experiences, and in many cases prior experiences may be detrimental to or interfere with learning. Prior experiences may provide a rich resource, but to say they do in all cases may be an overstatement.

A third assumption addresses the degree to which adults are prepared to learn something: "Adults' readiness to learn is closely related to the developmental tasks of their social roles." This could relate to learning to drive a car sometime around age 16, learning to cook when moving away from home or getting married, or learning to fix a leaky pipe upon becoming a home-owner. Different social roles have different developmental tasks associated with them. The social role of a male spouse may not be to cook, but to mow the lawn, trim the trees, rake the leaves, and know what tools and equipment are required for those tasks.

Knowles's fourth assumption about adult learning is that "Adults are more problem centered than subject centered in learning," which is to say that adults learn something they need to know or understand in order to help solve a problem. An example would be taking a small engine repair class in the evening at the community college because an individual has a number of small engines he or she uses, such as a lawn mower, garden tiller, power washer, and so forth. A person doesn't learn about small engines simply for the sake of gaining knowledge about them, but rather because knowing more about small engines helps solve a problem he or she faces.

Motivation is a common theme in discussions of adult learning, and Knowles's fifth assumption addresses the strength of adult learners' motivation to learn in terms of its source. He says that "The most potent motivations are internal rather than external." Internal, or intrinsic motivation occurs when an activity meets an individual's need for competence and control, is interesting, and "likely to be performed for its own sake rather than as a means to an end" (Sansone & Harackiewicz, 2000, p. 444). In contrast, external or extrinsic motivation is involved when it is based on something external to the activity or the individual, such as a grade, an award, or the threat of punishment.

Knowles's final assumption is that "Adults need to know why they need to learn something." Adults are less likely to engage in a learning activity if they lack an understanding of why it is *important* for them to learn something. Using the small engine example, an individual who repeatedly experiences problems with one of many gas-powered devices would readily discern justification for learning how to repair and maintain them.

John Dewey, an American philosopher, psychologist, and educational reformer, wrote extensively about teaching, learning, and the influence of experience on those activities. Dewey said that education relies heavily on connections to past experience, and that "All genuine education comes about through experience" (Dewey, 1938, p. 25). He elaborated on the link between experience and learning when he said "The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative. Any experience is mis-educative that has the effect of arresting or distorting the growth of further experience." Many prominent leaders in adult education have highlighted the tremendous influence of experience in the educational process. They believe that education connects past experiences and prior knowledge through reflective judgment to construct new understanding of complex situations.

Teacher-centric, lecture-based transmission of information often misses the opportunity for students to use their own experience and knowledge to contribute to the synergy of collaborative, discussion-based approaches. Eduard Lindeman, a friend and colleague of John Dewey, wrote that "In an adult class the student's experience counts for as much as the teacher's knowledge." He also said that "if knowledge grows, it is because knowing was once a part of experiencing" in recognition of the importance he attributed to experience with respect to learning.

Any discussion of learning will eventually be reduced to its fundamental components of training and education. How they relate to each other and to the overarching topic of learning has innumerable perspectives. One perspective is that education focuses on teaching students "how to think,"—not "what to think." Benjamin S. Bloom, one of the authors of the renowned *Taxonomy of*

Educational Objectives, wrote that "One major purpose of education is to broaden the foundation on which judgments are based." Robert Kegan, a professor in Adult Learning and Professional Development at Harvard University, emphasized the developmental psychology associated with adult learning and adult learners: "While training increases the fund of knowledge, education leads us out of or liberates us from one construction or organization of mind in favor of a larger one."

Simple comparisons of training and education tend to contrast them from each other. For example, training focuses on "what to think," while education is more concerned with "how to think." Training is more teacher-centric; education is more student-centric. Training is usually lecture-based to facilitate and maximize the transmission of information; education is more often discussion-based, involving Socratic, collaborative discourse. Training is usually considered more short-term and perishable, and must be periodically repeated; education is "learning that sticks" (BG Cardon, Deputy Commandant CGSC, 2009), is enduring, and contributes to an individual's lifelong learning. It is sometimes said that "Training prepares for predictability and certainty that only exist in sterile training settings. Education prepares officers for the operational realities of ambiguity and uncertainty."

Daniel Pratt, a professor of adult and higher education at the University of British Columbia at Vancouver, says that training is "surface learning" appropriate for lower learning levels of Knowledge and Comprehension. He says that education promotes "deep learning" through the more complex thinking associated with higher levels of leaning of Analysis, Synthesis and Evaluation (Pratt, 1998).

Dr. Andres Fortino, Associate Provost for Corporate Graduate Programs at Polytechnic Institute of New York University, has examined some of the differences between training and education as they apply to the corporate world. In a paper he wrote contrasting training and education, he said,

> If the learner is looking to acquire new mindsets, analytical skills and new ways of thinking and looking at the world, education is the correct path . . . If the learner is looking to acquire some skills and knowledge and is willing to accept that the acquired knowledge will lose value quickly, . . . by all means training should be sought" (2008, p. 5).

In that same paper he further contrasted training and education:

> Education differs from training in the ease of acquisition and in the time it takes for the subject(s) one has learned to lose value. Training is easier to acquire . . . but loses its value relatively quickly. Education on the other hand is harder to acquire. (2008, p. 5)

Training rarely moves students above fundamental knowledge and comprehension levels. Education enables the higher learning levels (analysis, synthesis and evaluation) required for complex, critical and creative thinking. Levels of Synthesis and Evaluation are likely to be achieved in settings beyond the classroom, such as in the operational environment. These higher levels may not be achieved by all.

Figure 1 shows the relationship of training and education as it relates to Bloom's Taxonomy. To reach higher levels of learning, the emphasis must shift from training to education. Analysis and higher-order learning levels require critical reflection that is best enabled by collaborative learning methods. As depicted in Figure 1, training initially takes less time.

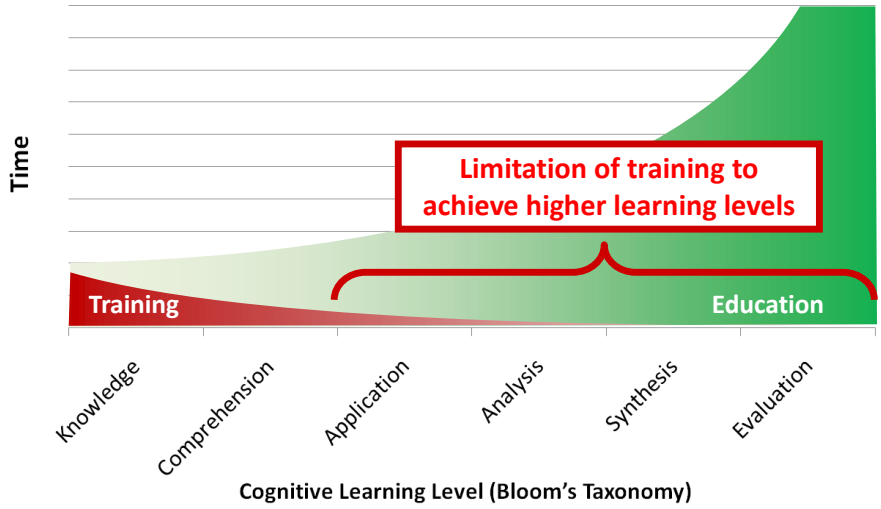


Figure 1. Relationship of Training and Education to Bloom's Taxonomy

Because learning achieved as a result of training tends to be perishable, training activities must be periodically repeated. Figure 2 illustrates the effect of repetitive training. Thus, in the long run, training may take just as much time as education, but without achieving higher learning levels. Education may be a more efficient means of instruction—because it is "learning that sticks," and a more effective means of instruction—because it enables higher cognitive levels of learning.

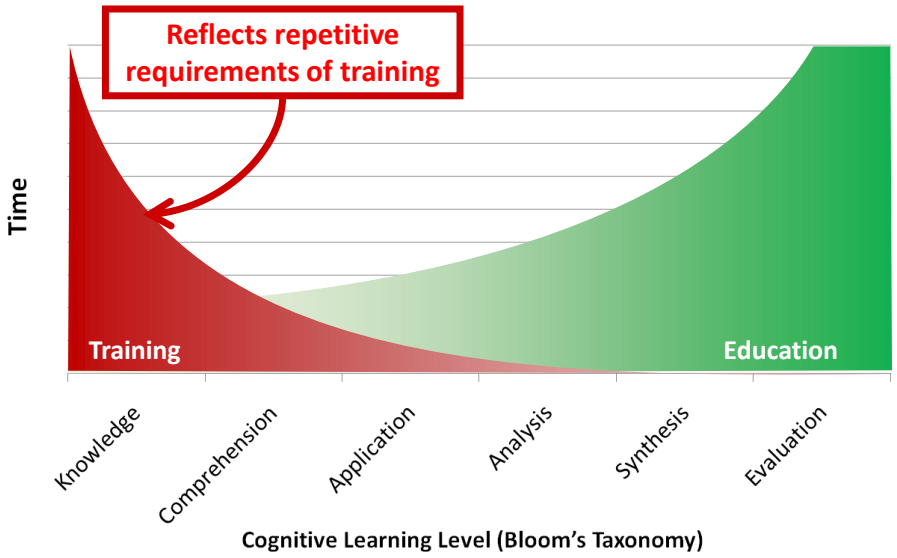


Figure 2. Effects of Repetitive Training

Finally, as shown in Figure 3, training tends to reinforce narrow perspectives and limited applications, while education supports achievement of desirable outcomes consistent with the the Army philosophy and values, e,g., Warrior Ethos, Agile and Adaptive Leaders, How to think vs What to think, and so forth.

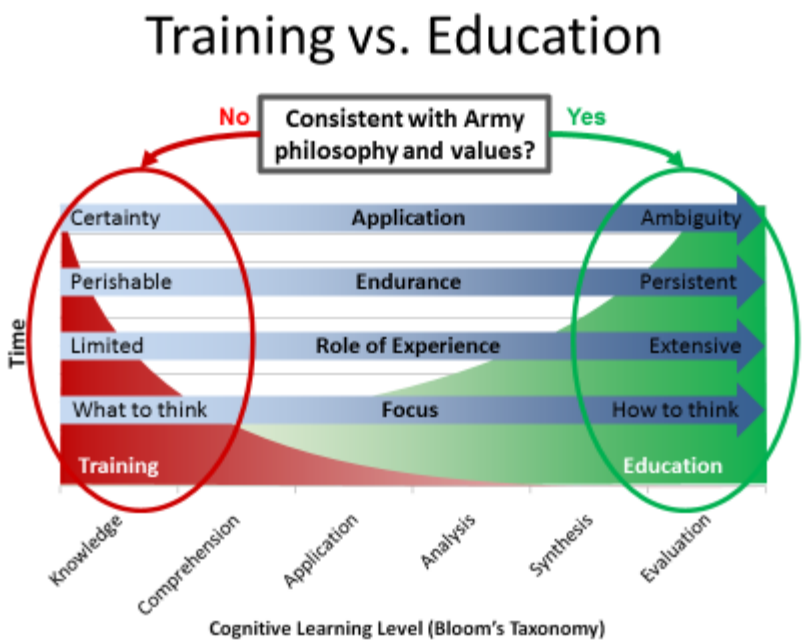


Figure 3. Consistency of Training and Education with US Army Philosophy and Values

CHAPTER 2—THE EXPERIENTIAL LEARNING MODEL (ELM)

The Experiential Learning Model (ELM) has evolved over the past decade or more into what we use today. The ELM shares key aspects with several other models proposed by various prominent 20th century adult educators and education theorists. This section describes the connections to these other interpretations of the learning process as it applies to how we teach in the Army.

David Kolb, a contemporary American educational theorist, said that "Learning is the process whereby knowledge is created through the transformation of experience." Along with a colleague, Ron Fry, he developed a model for the Experiential Learning Cycle comprising four elements: a concrete experience, observation and reflection on that experience (reflective observation), formation of abstract concepts based upon the reflection (abstract conceptualization), and then testing the new concepts (active experimentation). Kolb wrote that learning can begin with any of the four elements, but most often begins with the concrete experience.

The ELM is most often described as a variation of the four stages of Kolb's Experiential Learning Cycle. This is a useful comparison that facilitates correlation with Kolb's Learning Styles. Such a correlation helps highlight the value of the ELM as a means of meeting the learning needs of a group of adult learners with diverse learning preferences, particularly with respect to how they acquire and process new information in their individual learning endeavors.

Kolb's is not the only experiential model in use today. Other interpretations of the experiential learning process range from a 3-step version used in adventure education to Jarvis's 9-step model. In his model, Jarvis attempts to account for both the learning and non-learning roles of experience, and for both the reflective and non-reflective process of learning through experience. Kolb's model has also been criticized by some authors for its imperfect modeling of the learning process:

- It pays insufficient attention to the process of reflection (Boud, et al, 1983).
- The claims made for the four different learning styles are extravagant (Jarvis, 1987; Tennant, 1997).
- The model takes very little account of different cultural experiences/conditions (Anderson 1988).
- The idea of stages or steps does not sit well with the reality of thinking (Dewey, 1933).
- Empirical support for the model is weak (Jarvis, 1987; Tennant, 1997).
- The relationship of learning processes to knowledge is problematic (Jarvis, 1987).

However, as one of those critics acknowledged,

> The model provides an excellent framework for planning teaching and learning activities and it can be usefully employed as a guide for understanding learning difficulties, vocational counseling, academic advising and so on (Tennant, 1997).

Kolb's Experiential Learning Cycle is itself based on the work of other prominent authorities in adult education theory. Kolb drew heavily on the concepts presented by John Dewey, Kurt Lewin, and Jean Piaget to develop his model. Other interpretations of the experiential learning process have contributed to the current ELM construct. A comparison of these models is shown in Figure 4.

Dewey (1938)	Piaget (1950)	Lewin (1951)	Kolb (1984)	Pfeiffer & Jones (1975)	CGSC (1998)
1. Impulse	1. Concrete Phenomenalism	1. Concrete Experience (Unfreezing)	1. Concrete Experience	1. Experiencing	1. Concrete Experience
2. Observation	2. Internalized Reflection	2. Observations and reflections (Participant observation)	2. Reflective Observation	2. Publishing	2. Publish and Process
				3. Processing	
3. Knowledge	3. Abstract Constructionism	3. Formation of abstract concepts and generalizations (Cognitive aids)	3. Abstract Conceptual-ization	4. Generalizing	3. Generalize New Information
4. Judgment	4. Active Egocentrism	4. Testing implications of concepts in new situations (Feedback)	4. Active Experimentation	5. Applying	4. Develop
					5. Apply

Figure 4. Comparison of Experiential Learning Models

As Figure 5 illustrates, the Army ELM is very closely related to Kolb's ELM. Like Kolb, the Army interpretation recognizes that in class students may move through the separate elements of the model in a non-sequential manner. However, consistent with Tennant's view of the model as a "framework for planning teaching and learning activities," lesson plans are written to begin with the *concrete experience* and flow sequentially through the other steps of the ELM. Thus, the ELM provides a logical and organized plan for instructors to present instruction, while also giving them the latitude to adjust to students' in-class excursions that reflect the non-sequential reality of learning.

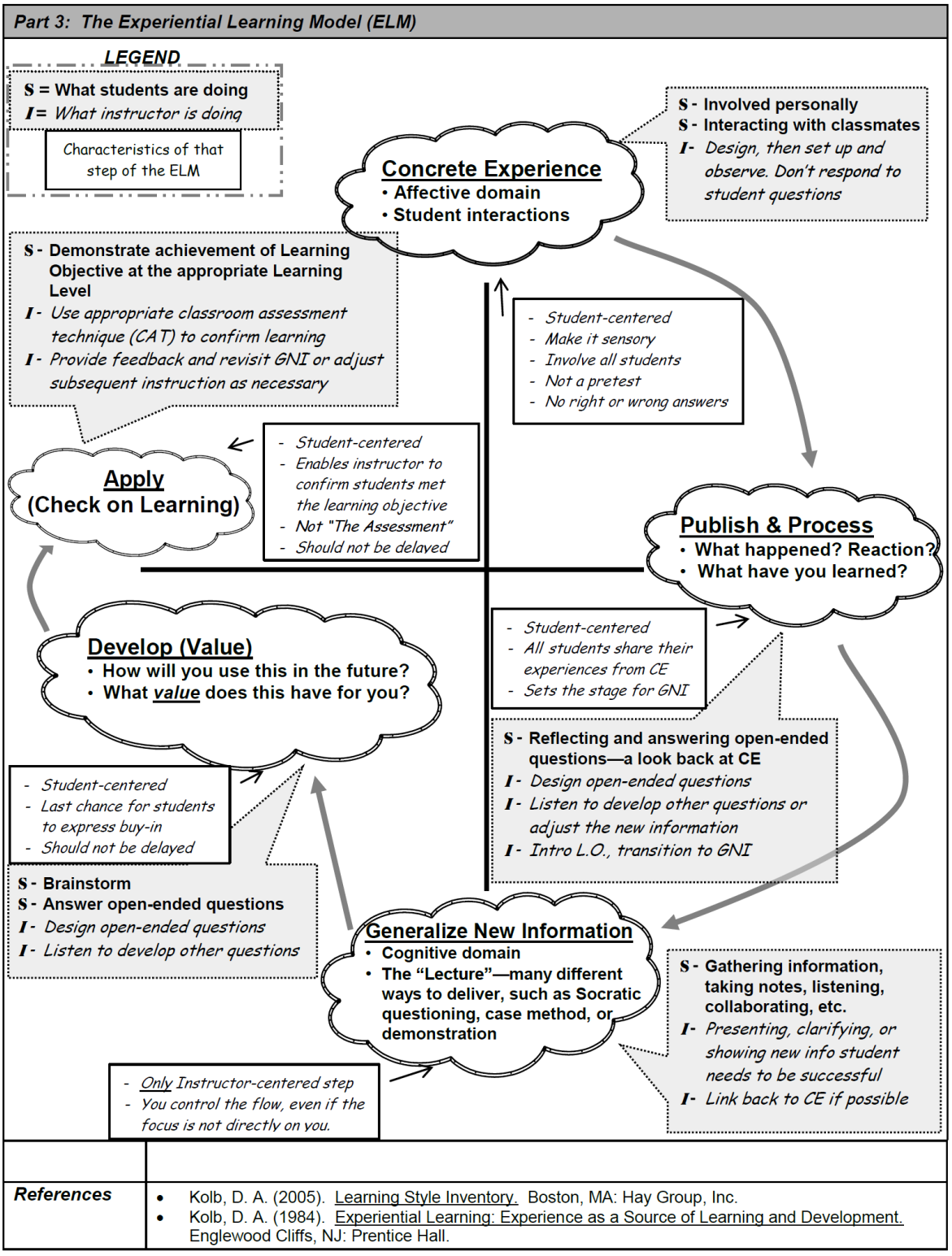


Figure 5. The Experiential Learning Model Job Aid

While it is clear that there are significant similarities among the various models that are the basis of the Army ELM, there are also some important nuances that must be appreciated to realize the full effectiveness of the model in the design and delivery of curriculum. Specifically, the interpretation

and application of the *concrete experience* within the model is much broader than described by other theorists. This makes the Army model more versatile and flexible than many faculty members realize.

In the Army model, the *concrete experience* may actually be a cognitive exercise in which the student recalls a past experience. Thus, it is the connection to past, present, or future (hypothesized) experience that form the basis of the learning event or activity. In fact, it may be through the creation or recollection of an imagined experience that the lesson is constructed. The key components of the *concrete experience* are that it is something that creates an affective learning opportunity, that it is the "hook" that piques a student's interest in learning the particular topic, and that it provides a touchstone for the cognitive content-focused portion of the lesson that is the *generalize new information* step.

THE EXPERIENTIAL LEARNING MODEL: A FIVE-STEP PROCESS

Concrete Experience

The *concrete experience*, or CE, serves as a trigger of past experience and knowledge, a focusing mechanism for the lesson that follows, and a support for the teaching of new content. The CE's role as a trigger is essential as it forces the student to connect the topic at hand with his or her understanding of it. This understanding is the result of experience, previous knowledge, and reflection on their intersection.

Secondly, the CE brings the topic into focus for the entire group. More importantly, the CE is the first opportunity to appeal to the student's affective domain behavior of "valuing," which is essential if the lesson content is to be internalized or learned.

Finally, the CE supports the teaching of the new content by providing a common "experience" that is connected to the new content of the GNI. If the lesson is on decision making, then a CE of a poor decision could be used to illuminate proper decision making.

The CE that is capable of all this can be a single word, such as "torture," a short vignette, or short video clip. For the teacher, the CE marks not only the beginning of the lesson but the start of the "marketing campaign" to sell the new content to the student. If done properly, this effort can create a situation where the student "pulls" the content from the teacher instead of the teacher having to "push" the content to the student.

Publish and Process

The first component of the P&P, *publish*, solicits students' observations about what they observed in the CE, typically with a question like, "what did you see?" or "what happened?" Then, in the second component, students are asked to "process" their reactions to what they saw and how their views compared with those of their classmates. A simple question to initiate this affective processing is "what's your reaction?" In this *publish and process* students take the first step in their learning by connecting their experience and knowledge to the topic at hand. The desired and normally occurring situation is a "publish" that produces a wide variety of student observations. This is the foundation for the "process" component of the P&P. The "process" may very well be the most important aspect of the entire ELM process. It is here that the student begins a reconciliation of where he or she is and, if successful, where the he or she will be at lesson end. Not so obvious, but perhaps more important, is that this reconciliation has the potential to reveal student bias and other preconceptions that must be dealt with if learning is to occur. It is during this step that evidence of students' critical thinking skills should begin to emerge as they consider alternative points of view and examine their own assumptions and biases.

Generalize New Information

After the students have "published" and "processed," the teacher must assess where the students are, compared to where they must be at the end of the lesson to achieve the enabling learning objective, i.e., the "delta" between what they know and what they need to know. Additionally, the P&P may illuminate points that the instructor can make during GNI that will connect back to the CE and reinforce a sense of value in the lesson material. This sense of value should be initiated during the CE and P&P, reinforced during the GNI, and ultimately expressed by the students during the *develop* step of the ELM. Mastery of the content taught during the GNI is verified during the *apply* step.

Often, GNI is thought of as the "lecture" portion of the ELM. However, the specific teaching technique used can include lecture, discussion, role play, simulation, or any of several other delivery approaches. A common misconception voiced by those new to the ELM is that discussion is the principle content delivery method. The key is to use a technique that is appropriate to the content, learning domain and level, student prior knowledge and expertise, and time available.

Develop

This seems to be the most confusing ELM step for instructors, and often for students as well. Some confusion with the *develop* step of the ELM may result from the term also describing a step of the Accountable Instructional System or from a past expression of the ELM which named this step "Develop Courses of Action." In the ELM, a better word than *develop* might be *value*. Albeit a bit late, this step of the ELM serves to ensure that the student sees the relevance of the GNI just presented. This is not the place to *establish* value; instead, this is the opportunity for students to *express* their appreciation of the value that was initiated during the CE, and reinforced throughout the P&P and GNI. Evidence of the students' value for the knowledge should have been observed in student comments and participation throughout the first three steps of the ELM. For example, during GNI a student might say something like, "This is really going to be helpful to me in my next job as a planner," or "I can even use this process to negotiate a better deal on a new car." These are examples of unsolicited comments that complete the *develop* step, perhaps even before you reach that step of the ELM. The *develop* step also offers another opportunity for the instructor to observe the students' critical thinking skills as they formulate their expressions of the purpose of the learning and why it is significant to them.

Apply

The final step of the ELM is the *apply.* This is often referred to as the "assessment" or "test." It must be emphasized, however, that, while the *apply* may resemble a test, the focus of the apply is more to serve as a feedback tool for the instructor, a *check on learning* to confirm that he or she has adequately and successfully taught the lesson—it is a measure of the instructor's effectiveness. Also, this is a final check to ensure that the students understand the material. If there are still unanswered questions or confusion, the instructor can return to the GNI to fill in the holes before the students are dismissed, or at least can identify points that need to be reinforced in a subsequent lesson to ensure the students possess the knowledge they need. In contrast, an assessment or test is a *measure* of the students' mastery of skills or knowledge they will need. The assessment may be delayed to provide students time to complete a written assignment, a group exercise, or any number of other appropriate assessment instruments. However, the *apply* step should not be delayed since it enables the instructor to confirm that he or she has been successful in helping the students reach the enabling learning objective, at the prescribed learning level, and as defined by the standards. This may be accomplished using formal or informal classroom assessment techniques.

The *apply* step is often confused by instructors, as well as by lesson authors. Because of the similarity of the *apply* with the "test" or "assessment," the term "delayed apply" has come into common use. However, as previously discussed, these terms have very distinct meanings. In fact, they are even covered in separate paragraphs of the lesson plan. As the final step of the ELM, the *apply* is described in paragraph 6 of the lesson plan that describes the conduct of the lesson. The assessment or test is described in paragraph 7, Assessment, or in Appendix A if the assessment of learning is described in a separate appendix of the lesson plan, delineating the specific graded requirements, instruments, and weights for the lesson or block of instruction. In the "apply," the instructor has great latitude in how to determine whether he or she has successfully taught the lesson; in the assessment, the instructor may not deviate from the requirements set out in the assessment plan or prescribed by the school or organization.

As in the *develop* step, students may dip into the *apply* step before the previous steps have been fully completed. During a discussion-based GNI, for example, it is likely that students will demonstrate their understanding—or lack thereof—regarding the lesson content. Depending on the students' engagement in the discussion, it may not be necessary to conduct a detailed *apply* at the end of the lesson if they have clearly demonstrated achievement of the learning objectives during the *develop* step, but this step should be neither omitted nor delayed.

Classroom Assessments

A good resource for simple, informal in-class assessments is *Classroom Assessment Techniques: A Handbook for College Teachers* (Angelo and Cross, 1993). Examples of commonly-used classroom assessment techniques that are effective during the *apply* step as checks on learning are described below.

Purpose

Classroom assessment helps instructors obtain useful feedback on what, how much, and how well their students are learning. Through close observation of students in the process of learning, the collection of frequent feedback on students' learning, and the design of modest classroom experiments, instructors learn much about how their students learn and how they respond to particular teaching approaches. This information can be used to refocus teaching to help students make their learning more efficient and more effective.

There is no such thing as effective teaching in the absence of learning. Teaching without learning is just talking. Too often, students have not learned as much or as well as was expected, and there are gaps between what was taught and what has been learned. By the time an instructor notices these gaps in knowledge or understanding, it is frequently too late to remedy the problems.

To avoid unhappy surprises, instructors need better ways to monitor learning throughout the academic year; they need a continuous flow of accurate information on student learning. For example, if the goal is for students to learn points A through Z, an instructor first needs to know whether all students are really starting at point A and, as the course proceeds, whether they have reached intermediate points B, G, L, R, and so forth (Angelo and Cross, 1993, p. 3). It is not enough to test students when the lesson plan has arrived at a particular point. Classroom assessment is useful for determining how well students are learning at initial and intermediate points, and at all points in between. Instructors are better able to understand and promote learning, and increase their students' ability to become more effective, self-assessing, self-direct learners.

Characteristics

- **Learner-centered.** Focuses the attention on observing and improving learning, rather than on observing and improving teaching.

- **Teacher-directed.** Respects the autonomy, academic freedom, and professional judgment of instructors. The instructor decides what to assess, how to assess, and how to respond to the information gained through the assessment. (Angelo and Cross, 1993, p. 4)

- **Mutually beneficial.** Because it is focused on learning, classroom assessment requires the active participation of students. By cooperating in assessment, students reinforce their grasp of the course content and strengthen their own skills at self-assessment. Their motivation increases when they begin to realize their instructors are interested and invested in their success as learners.

Instructors sharpen their teaching focus by continually asking themselves three questions:

- "What are the essential skills and knowledge I am trying to teach?"
- "How can I find out whether students are learning them?"
- "How can I help students learn better?" (p. 5)

Seven basic assumptions of classroom assessment (Angelo and Cross, 1993)

1. The quality of student learning is directly, although not exclusively, related to the quality of teaching. Therefore, one of the most promising ways to improve learning is to improve teaching. (p. 7)

2. To improve their effectiveness, teachers need first to make their goals and objectives explicit and then to get specific, comprehensible feedback on the extent to which they are achieving those goals and objectives. (p. 8)

3. To improve their learning, students need to receive appropriate and focused feedback early and often; they also need to learn how to assess their own learning.

4. The type of assessment most likely to improve teaching and learning is that conducted by instructors to answers questions they themselves have formulated in response to issues or problems in their own teaching. (p. 9)

5. Systematic inquiry and intellectual challenge are powerful sources of motivation, growth, and renewal for instructors, and Classroom Assessment can provide such challenge.

6. Classroom assessment does not require specialized training; it can be carried out by dedicated instructors from all disciplines. (p. 10)

7. By collaborating with colleagues and actively involving students in Classroom Assessment efforts, instructors and students enhance learning and personal satisfaction.

Misconception/Preconception Check

The greatest obstacle to new learning is often not the students' lack of knowledge, but rather the existence of prior knowledge. It is often much harder for students to unlearn incorrect or incomplete knowledge than to master new knowledge (p. 132). Identify some of the most troublesome common misconceptions or preconceptions students bring to your course. Brainstorming may be a good technique to use (p. 135). Select a handful of these troublesome ideas and beliefs, and focus on them. Create a simple questionnaire to elicit information about students' ideas and beliefs in these areas. Have another instructor read the questions to ensure they are not patronizing, threatening, or obvious. Think through how you will respond to several likely outcomes; delete any questions you are not prepared to deal with. Explain rationale for CAT to students, reinforce anonymity, and explain how you plan to use their feedback. (p. 136)

This Classroom Assessment Technique is a quick way to uncover likely barriers to learning. Anonymity contributes to likelihood of students truthfully revealing their own ideas and beliefs. A disadvantage may be that students do not enjoy having their certainties questioned (p. 137).

Techniques

- **1-Minute Paper.** End class a few minutes early and ask students to respond to some variation on the following two questions: "What was the most important thing you learned during this class?" and "What important question remains unanswered?" Students write their responses on index cards or half-sheets of paper and hand them in. Minute Papers provide manageable amounts of timely and useful information from minimal investment of time and energy. They assess more than mere recall. To select the most important of significant information, students must first evaluate what they recall, and then self-assess by asking themselves how well they understand what they should have just learned. (p. 148)

- **Muddiest Point.** The simplest and most efficient Classroom Assessment Technique. Technique consists of asking students to jot down a quick response to one question: "What was the muddiest point in _____?" Focus might be a lecture, discussion, homework assignment, guest speaker, or some other learning activity. Instructors can use feedback on what students found least clear or most confusing to guide their teaching about what may require more emphasis or time. Students must employ some high-order thinking in order to identify what they do not understand and articulate those points quickly. (p. 154)

- **One-Sentence Summary**...Requires students to answer the questions "Who does what to whom, when, where, how, and why?" about a given topic, and then synthesize those answers into a single informative, grammatical, and long summary sentence. This CAT enables instructors to find out how concisely, completely, and creatively students can summarize a large amount of information on a given topic. An advantage is that it allows faculty to scan and compare response quickly and easily. It also gives students practice in "chunking" information – condensing it into smaller, interrelated bits that are more easily processed and recalled. (p. 183)

- **Critical Incident Questionnaire (CIQ)**. Brookfield (2006) describes another effective tool for classroom assessment. The Critical Incident Questionnaire (CIQ) is an instrument that helps find out how students are experiencing their learning and your teaching. It helps embed our teaching in accurate information about students' learning that can be solicited on a regular basis in an anonymous manner. It is a quick and revealing way to discover the effects an instructor's actions are having on students and to find out the emotional highs and lows of their learning. Using the CIQ provides a running commentary on the emotional tenor of each class an instructor teaches.

The CIQ is a single-page form handed out to students on a regular basis, typically at the end of the last class you have with them that week or at the end of a block or module. It comprises five questions, each of which asks students to write down some details about events or actions that happened in the class that week. Its purpose is not to ask students what they liked or didn't like about the class, although that information inevitably emerges. Instead, students are asked to focus on specific events and actions that were engaging, distancing, confusing, or helpful. Having this highly concrete information about particular events and actions is much more useful than reading general statements of preferences.

The CIQ takes about five minutes to complete, and students are told not to put their names on the form. If nothing comes to mind as a response to a particular question, they are told to leave the space blank. They are also told that at the next class meeting the group's responses will be shared.

Critical Incident Questionnaire (CIQ) advantages

- They alert us to problems before they become disasters.
- They encourage students to be reflective learners.
- They build a case for diversity in teaching.
- They build trust.
- They suggest possibilities for our development.
- They us model critical thinking. (pp. 41-52)

Common Myths of the Experiential Learning Model

- The ELM is a rigid, sequential process that must be followed in each class session or training activity.
- The *concrete experience* (CE) should not be directly related to the lesson content. Instead, it should serve as an analogy for the lesson.
- The *CE* must involve students in an active, hands-on experience.
- The *GNI* is the lecture portion of the ELM.
- The *apply* is the "test" and may be delayed.
- The ELM is incompatible with training, inquiry-based learning, or outcomes-based educational approaches.
- The ELM is not appropriate for topics in which students do not have a significant reservoir of experience.
- The instructor may conduct the ELM steps in any order.*

** There is ongoing discussion on this point; the deciding factor is usually the experience and skill of the instructor*.

CHAPTER 3—THE POWER OF CONCRETE EXPERIENCE

OVERVIEW

This chapter will describe how to enhance student learning through the use of a *concrete experience* that establishes a sound foundation on which new knowledge can be constructed. Used effectively, the *concrete experience* motivates students to learn, and provides a common reference to integrate and reconcile their diverse life experiences and perspectives. Additionally, it serves as a touchstone to connect new information to past experiences in a meaningful and enriching way that helps students achieve higher cognitive levels of learning and promotes longer-term retention of critical, life-or-death knowledge requirements for such audiences as medical professionals, emergency responders and the military.

THEORETICAL FOUNDATION

Numerous authorities have highlighted the significant role of experience in the education of adults. Lindeman (1961) Knowles (1970), and Mezirow (1981) underscored the influence of experience in adult learning. Kolb (1984) incorporated the perspectives of Dewey (1938), Piaget (1972), and Lewin (1952) into his experiential learning model. Jarvis (1987) offered a more comprehensive model that accommodated learning and non-learning effects of experience, as well as reflective and non-reflective aspects of experiential learning. The US Army recognizes the tremendous value of experiential learning to prepare officers for the complex and ambiguous challenges that face these officers in their future leadership roles. In graduate-level educational programs for intermediate and senior-level leaders, US Army schools, centers, and service colleges use an experiential learning model based on the Kolb model. The concrete experience begins the learning cycle by "unfreezing" students from their held perspectives (Lewin, 1952), providing an "impulse" to trigger learning (Dewey, 1938) and providing a basis for reflective observation (Dewey, 1938; Lewin, 1952; Piaget, 1972; and Kolb, 1984) on which new knowledge can be assimilated or accommodated (Piaget, 1972) into their meaning schemata.

Key Ideas

- A *concrete experience* contributes to student motivation to learn.
- A *concrete experience* provides a common reference to integrate and reconcile the diverse experiences and perspectives of students.
- A *concrete experience* serves as a touchstone to connect new information to past experiences.
- A *concrete experience* promotes learning at higher cognitive levels.
- A *concrete experience* helps improve retention of essential or critical knowledge.

EXAMPLES OF CONCRETE EXPERIENCES

A good *concrete experience* sets the stage for the students' learning by engaging them on an affective or emotional level. It provides a setting through which the student connects to a past, present, or anticipated future experience. It helps create a concrete connection with the lesson content, establishing a firm foundation on which to build abstract concepts involving higher-order cognitive learning levels. The *concrete experience* should provide students with an opportunity to personally and individually reflect on a situation or event. This could be a brief video clip, a picture, a practical exercise, a story, or a role play scenario.

Video Clip

Concrete experience for Media or Communications class: In the original *Bob Newhart Show*, psychologist Dr. Bob Hartley is interviewed for a television talk show. The talk show host, Ruth Corley, assures him that the interview will be painless and then introduces him:

"I'm with psychologist Dr. Robert Hartley. It's been said that today's psychologist is nothing more than a con man, a snake oil salesman peddling cures for everything from nail biting to a lousy love life and I agree. We'll ask Dr. Hartley to defend himself after this message."

The host then proceeds to attack Bob's credibility and asks questions for which Bob clearly was not prepared to answer: "How much do you make?" "Do you really cure anyone?" and "Who are your patients?"

Students easily connect with the experience of Dr. Hartley, perhaps recalling their own experiences in similar situations, or imagining themselves in similar situations in the future.

Picture

"A picture is worth a thousand words." Present a single image or a series of images that depict a situation that will evoke an affective or emotional response from student. While the image itself may not directly connect to the specific content in the lesson, the ideas or concepts that the image conjures for the students should connect logically to the lesson content. For example, an image of an aircraft accident could certainly be used to set the stage for a lesson on an aspect of aircraft maintenance; however, used creatively, it could also lead into a lesson on planning, or on leadership, or a number of other topic areas that, if executed poorly, could result in the image that the students are shown in the *concrete experience*.

After the students have been given time to internally process the *concrete experience*, having the group members share their perspectives can enhance the power of the *concrete experience* by causing students to reconcile their own views with those of their classmates.

Practical Exercise

Journalism 101 (Heath & Heath, 2008): On their first day in a high school journalism class, students were asked write the lead for a newspaper story based on the following facts:

Kenneth L. Peters, the principal of Beverly Hills High School, announced today that the entire high school faculty will travel to Sacramento next Thursday for a colloquium in new teaching methods. Among the speakers will be anthropologist Margaret Mead, college president Dr. Robert Maynard Hutchins, and California governor Edmund "Pat" Brown. (p. 75)

Students diligently worked on their stories to include all of the relevant facts as concisely as they could—who, what, where, when, and why. They then turned them in to the teacher who scanned through them, confirming that they had all missed the real lead: *"There will be no school next Thursday."* (p. 76)

In this *concrete experience*, students were exposed to a current experience that creates a personal sense of value for the lesson content that will follow.

Story

"A story is powerful because it provides the context missing from abstract prose" (Heath & Heath, 2008, p. 214). It can affectively engage the students in the learning by creating an unexpected concrete connection with the lesson content. A history professor might prime his or her students for a lesson addressing the Allies attack on Gallipoli during World War I. The professor might begin by having the students close their eyes and imagine that they are in one of the troop landing boats

making their way to shore as the barrage of enemy fire is already upon them. The professor could proceed to describe sounds of the artillery fire, the motion of the round-bottomed boat in the choppy seas, and the smells of the sweat and vomit that fills the cramped space.

The professor should allow the students sufficient time to contemplate their imagined world before asking them to comment on such things as what would the ANZAC soldiers be thinking, how would they be acting, and how would that affect their actions when they reached the beach.

Role-play scenario

Role-playing is an effective way to encourage or enable students to examine issues from other perspectives. As a *concrete experience*, a role-play can elevate the affective state of the students and can lead to higher-order critical thinking by forcing the students to examine a situation from a perspective different from their own. For example, students might be asked to role-play a counseling session or to participate in a mock interview. After they participate in the *concrete experience*, the instructor should allow the students time to reflect on what happened before asking them to share with their classmates. These scenarios can help students recognize the learning value of the lesson content that will follow and can increase their intrinsic motivation to learn.

CHAPTER 4—GENERALIZE NEW INFORMATION

INTRODUCTION

This chapter contains general descriptions of teaching methods that can be used to develop the *generalize new information* (GNI) step of the Experiential Learning Model. The definitions, uses, advantages, disadvantages, characteristics, and applications that should be considered when selecting or using these instructional delivery methods are detailed for each.

While the exact way each method is applied will vary somewhat with the subject matter, learning objectives, and target audience of different courses, it is the cognitive learning level that holds the most sway. Another less significant consideration in teaching method selection is variety. If the lesson under development falls in the middle of a week-long exercise, the author might consider a teaching method other than a practical exercise as he develops the GNI step of the ELM. The following are available to the lesson author for use in most steps of the ELM.

Each of these methods potentially supports all learning levels of the cognitive domain through their discovery of factual information, principles, recognition, discrimination, creation, and evaluation. They all offer a means for the internalization required for the affective domain in the exchange of ideas and the potential for changing attitudes necessary for *adjustment, the goal of all teaching.*

DISCUSSION METHOD

(Instructor/Group Directed)

> In debates we can win only by excluding other points of view whereas in discussions we can achieve only by inclusions.
>
> Eduard Lindeman, 1926
>
> At its best, discussion greatly expands our horizons and exposes us to whole new worlds of thought and imagining. It improves our thinking, sharpens our awareness, increases our sensitivity and heightens our appreciation for ambiguity and complexity.
>
> Stephen Brookfield, 2005

In their book, *Discussion as a way of teaching*, Brookfield and Preskill (2005) describe the purposes of discussion:

- To help participants reach a more critically informed understanding about the topic or topics under consideration;
- To enhance participants' self-awareness and their capacity for self-critique;
- To foster an appreciation among participants for the diversity of opinion that invariably emerges when viewpoints are exchanged openly and honestly; and
- To act as a catalyst to helping people take informed action in the world.

Discussion is an exploration of a specific topic by a sharing of ideas, opinions, and experiences of a group of students. The instructor does not present theory, principles, doctrine, or ways of handling problems, but serves as the catalyst and moderator. The role of the instructor is not to supply answers or information, but to help the group define problems and develop solutions by guiding the discussion so that it is constantly directed toward the course objectives. Kinds of discussions can range from the tightly-controlled to the uncontrolled problem-solving discussion.

Discussion uses learner's knowledge and attitude concerning a specific topic as a means to review, clarify, or summarize homework, case studies, or other work assignments. It also develops the learner's ability to learn deductively, encourages learning through group participation, stimulates interest and thinking, and prepares students for the application of theory or procedures to specific situations.

To prepare for a discussion, ensure students have the required level of subject matter expertise in order for the method to be effective. Instructor preparation includes planning carefully and having a thorough knowledge of the subject matter. The instructor must also anticipate situations and problems that may arise during the discussion; must have some sort of timetable for effective utilization of time; and must have thoughtfully considered how to most effectively introduce material, provoke discussion, and guide thinking toward the planned conclusions as defined by the learning objectives.

Conference/Discussion Advantages

- Increases **students' interest** by offering an opportunity to express their own opinions.
- Pools the **knowledge and experience of the group,** and allows the instructor to make effective use of the groups' backgrounds.
- Increases **students' acceptance** and commitment by allowing the students to participate in developing the lesson and solving the problem.
- Enhances more **permanent learning** because of the increased participation and internalization.

Conference/Discussion Disadvantages

- Provides an opportunity for **domination** by a few students.
- Requires a **highly skilled instructor** to monitor and facilitate without dominating; someone who can draw out the experience of the students by asking probing questions; and someone who can keep the discussion on track.
- Requires **participation** by the students. This can backfire if the class is being given right after lunch.
- Degenerates, occasionally, into **polarization** of ideas and students.
- Bogs down, at times, on unimportant points or **diverts** attention from the main issue to be discussed.
- Consumes a significant amount of **time.**
- Limits the size of the group.

Characteristic of a Good Conference/Discussion

- Can use a method of recording the outcome of the group discussion (e.g., flip chart, recorder, chalkboard, computer, computer-generated graphics).
- Seats the group so that all group members can see each other.
- Keeps the group size between 10 to 25 participants for the most effective learning.
- Explains objectives and gives a well-prepared agenda to the group so that the session does not become a "bull session."

- Keeps the group on track, without stifling participation, by periodically paraphrasing good points and summarizing where the group has been and where it is headed.

CASE STUDY METHOD
(Instructor/Group Directed)

A Case Study is an oral, written, or computerized account of a realistic situation with sufficient detail to make it possible for the learners to determine, through analysis, the problems involved and produce possible solutions. There is no one right answer. The instructor plays an active but nondirective role in stimulating discussion and encouraging mature analysis. This method is useful in developing thinking, problem identification, and decision-making skills. It also provides realistic practical experience and assesses student learning while validating analytical knowledge and abilities.

Preparation includes students having a complete background reading in content area. It is helpful if they are required to submit a written case analysis prior to the case discussion.

Preparation for instructors include reading the case and preparing a case analysis prior to the class meeting, indicating references for use during class discussion. Instructors are more successful when they have previous experience using non-directive methods.

Case Study Advantages

- Emphasizes the **individual's role** in the learning situation by involving him/her in the process.
- Keep **interest levels high** because of student activity and relevancy to real-world situations. This may be a problem the student will encounter later.
- Blends well with other methods (e.g., lecture, discussion, or brainstorming).
- Helps to create **new and novel solutions** to old problems.

Case Study Disadvantages

- Takes **a large block of time** for the student to apply the knowledge and to formulate it into a solution.
- Demands much time to **write** because it can have so many variables and can become outdated easily.
- **Fosters timidity** and lack of confidence in an already timid and withdrawn student.

Characteristics of a Good Case Study

- The case study contains enough facts to be completed without making up information. The information is organized in such a way that the solution is not obvious. (Incomplete or incorrect information, extraneous or confusing information, and cute or funny names often detract from the effectiveness of a case.)
- The instructor links the case study to the "real world," thereby adding credibility and relevance to the case.
- The instructor works the case and becomes thoroughly prepared to answer any questions that arise.
- The instructor revises the case study periodically to keep it up-to-date with new procedures and techniques.

PRACTICAL EXERCISE METHOD
(Instructor/Group Directed)

The practical exercise (PE), through a short problem, skill, operation, or movement, focuses on a specific learning point. The method stresses joint effort and collective decision making in group problem-solving and research. Exercises that are assigned may be such that they can be completed within one class session, in which case they are selected so as to parallel or illustrate ongoing instruction. Alternatively, group exercises that require extensive work, and research may be assigned to extend over weeks or even a term. In either approach, all facts and information relevant to the problem must be available to students or accessible through research. PE is learning by doing.

There are four types of PEs:

- **Group performance-controlled exercises.** Students work together, step-by-step, at a fixed rate that the instructor sets.
- **Coach-pupil practical exercises.** Students pair up and perform alternately as instructor and student.
- **Independent exercises.** Students act and work by themselves.
- **Team practical exercises.** Group performs as a team.

The PE demonstrates newly learned procedures and principles prior to applying the knowledge in a more complex environment much like a *concrete experience* (CE); reinforces team skills; reinforces safety procedures; and gauges understanding of the concepts taught by the instructor.

Students do not require prior experience with the method or preparation. Instructor requirements include: content expertise (moderate knowledge of the content field and/or expert knowledge of information sources), experience (helpful but not essential) and method proficiency.

PE Advantages

- **Builds confidence** when the student can accomplish the task by helping to make the transition between conceptualization and application.
- **Actively involves** the participants.
- Enables **learning assessment.** The instructor can identify whether learning has occurred and pinpoint problem areas.
- Promotes **safety** because student performs the task in a controlled environment, which prevents accidents.

PE Disadvantages

- May require **tools and equipment** that are difficult or impossible to obtain.
- Requires **a large block of time** because of the various rates of completion and practice time necessary.
- May require **more instructors** to keep a constant check on the progress of each student, to give assistance when needed, and to evaluate the quality of the performance.

Characteristics of a good PE

- Limited to one concept or procedure. Keep it as simple as possible.
- Neither too long nor too complex.

- Validated ahead of time to assure it will produce the desired result.

ROLE-PLAY METHOD
(Instructor/Group Directed)

Role-Play is a method of portraying human interaction in imaginary situations in such a manner that elicits realistic behavior. A situation is presented to the group and some members are asked to assume roles and to enact the situation toward some resolution. Other students observe the behavior of the actors. The scene may be carried to a resolution or the instructor may stop it at some critical point. Following the scene, observations of the audience, as well as thoughts and feelings of the actors, are reported and discussed by the group. In this way, faulty diagnoses, alternative actions, and discrepancies between diagnoses and action can be identified. Alternative ways of handling the situation may be tried by replaying the scene.

Instructors must be thoroughly familiar with the situation and should prepare an analysis of possible responses prior to class. It is recommended that instructors practice role-play prior to class. They must be flexible and prepared to cope with unanticipated events and outcomes. Student preparation is not essential.

Role-Play can be useful in practicing skills learned, such as problem solving, counseling, and interviewing. It also promotes understanding of the viewpoints and feelings of other people, and encourages insight into attitudes and behaviors of themselves and others.

Role-Play Advantages

- Allows students to experiment with new learning and receive immediate feedback.
- Totally **involves** the student.
- Is relatively **easy** to develop.
- Provides some "real world" **experience** to the learning process.
- Is **economical** unless expensive equipment or costumes must be rented.

Role-Play Disadvantages

- Requires close monitoring by the instructor to ensure that the role-play is following a pattern **toward the objectives** of the lesson.
- Requires much **time.** Most role-plays are 7 to 10 minutes in duration with a critique that takes an additional 10 to 15 minutes.
- Requires the **concentration** and dedication of the students. The students must also understand the purpose of the role-play.

Characteristic of a Good Role-Play

- The instructor properly introduces the procedure and its objectives.
- The instructor introduces and explains the situation, careful to allow for the creative expression of the players.
- The instructor sets a climate in which the participants are comfortable enough to role-play and are not embarrassed or threatened.
- The instructor limits distractions that might break the concentration of the players.

GAMING METHOD
(Instructor/Group Directed)

Gaming is a structured competition between two or more participants in a game. Each game has its own set of rules. Subjects can range from strategy to finance. Its uses include developing leadership skills, improving technical performance, foster cooperation and teamwork, improving decision making ability, evaluating learning.

Prior experience with the method is not required of students, but students must know the game rules and procedures. Content knowledge is a requirement when it is a fundamental component of the game.

Instructors should practice the game prior to using it in class. They must know the game rules and procedures and have content knowledge when it is a component of the game.

Gaming Advantages

- **Motivates** participants to be highly involved.
- **Promotes interest** and application of the learned material as well as fun.
- In days or weeks, provides the experience that would take years to gain on the job.
- Involves participants in the game and causes them to undergo the stresses associated with real-world situations.
- Adapts, in an infinite **variety** of ways, to all types of learning from orientation to experiential.

Gaming Disadvantages

- Requires proper construction to avoid placing participants in a win/lose or lose/lose competition.
- Requires a significant amount of time.
- Requires considerable research to ensure that the **learning outcomes** are achieved.
- Becomes expensive if computers are used because the **cost** can far outweigh the benefits.

Characteristics of a Good Game

- Fun and accomplishes the objective of the lesson.
- Instructor with the sound understanding of the method and the skill of a facilitator to accomplish the discussion after the game.
- Absorbs the players, but not to the extent that they forget the objective of the game.
- Involves a set of structured decision making tasks typical of a real-life situation, and provides a systematic means of observing and evaluating participants.
- Comprises 1 to 20 participants. The larger number can be organized into teams.

BRAINSTORMING METHOD
(Instructor/Group Directed)

Brainstorming is a problem-solving or problem determining situation in which participants are given a scenario and asked to bring into the discussion any ideas that come to mind, no matter how outlandish. All ideas are gathered and recorded, *without assessment,* before any are discussed. Idea gathering is usually limited to 5 to 15 minutes, followed by a discussion of the presented ideas.

Normally, the instructor does not participate in the brainstorming session, but may serve as the recorder. Its uses include identifying a problem, developing novel or creative solution to problems, developing creativity, and stimulate participation by all group members.

Students must be familiar with the brainstorming rules and procedures. Content knowledge is required when content is an essential part of the brainstorm outcome. Instructors must be knowledgeable about brainstorming rules and procedures. The must have content knowledge when it is an essential part of the brainstorming activity.

Brainstorming Advantages

- Encourages problem identification and solutions.
- Breaks mind-sets and allows **new approaches**.
- Maintains interest because of the f**ast-moving pace** of the session.
- Develops valuable ideas.
- Encourages **participation** by all the group members because of the accepting atmosphere.

Brainstorming Disadvantages

- Requires **a skilled instructor** to keep the session moving, the ideas coming, and to refrain from judging group-member responses.
- Requires the participants' **understanding** of the process in order to maintain the productivity of the group.
- Requires a very **nonthreatening** environment.

Characteristics of a Good Brainstorming Session

- Group members are familiar enough with each other to create a trusting environment.
- Rules are well-explained to the group, and they understand the purpose and conduct of the session.
- Instructor is skilled in keeping the session moving and the ideas flowing.

GUEST SPEAKER METHOD
(Instructor/Group Directed)

Experts are invited to speak on subjects appropriate to the program of learning. "Guest Speaker" is defined as a person who is not within the span of control of the commandant of the school. The instructor ensures that all speaker arrangements are made and that the speaker and the students understand procedures. Guest Speakers lend credibility to the curriculum, break the boredom of the same old faces, and bring in information that is not available from standard sources (such as latest techniques or what the job entails in the field).

Preparation is essentially the same for the student and the instructor: have content knowledge and information about the speaker.

Guest Speaker Advantages

- Provides **expertise**, not available within the school, in specific subject areas that are essential to the course of training and keyed to the school mission.
- Provides knowledge gained by **extensive experience** in a specific field of endeavor.
- Provides **up-to-date information** on new techniques, policy, doctrine, and practices.

- Influences **student motivation** by the presence of distinguished military or civilian dignitaries.

Guest Speaker Disadvantages

- Can add extra cost to course.
- Can be difficult to effect **coordination** with elements involved.
- Can be difficult to **control time elements** within the weekly class schedule.
- Takes control of lesson content away from the instructor.

Characteristics of a Good Guest Speaker

- The speaker is aware of the objectives and test questions, if any, related to the presentation.
- The speaker, after being briefed, understands what the school expects and information about the student audience.

LECTURE METHOD
(Instructor/Group Directed)

In his book *The Skillful Teacher*, Stephen Brookfield discusses how to "Lecture Creatively." He says the lecture is the "most frequently abused" method of teaching adults. Fortunately, this does not have to be the case. Lecturing as a method of teaching does not necessarily equate to mind-numbingly boring, although some lecturers seem to assume their right to do just that. The content and dynamism of the lecture and the teacher's approach to the learning objective can illuminate a subject even if a teacher lectures. The challenge teachers face is to make lectures as enlivening and critically stimulating as possible.

It is paramount for an instructor to be clear about why he or she chooses to lecture, and there are a handful of legitimate, acceptable reasons to lecture. For example, a lecture may be appropriate to establish the broad outlines of a body of material. A lecture may be an effective method to set guidelines for independent study. A teacher may use a lecture to model intellectual attitudes that are encouraged in students, or to set the moral culture for future discussions. A final reason to lecture may be simply to encourage the students' interest in a particular topic.

One of the keys to a successful lecture is to research the audience, the students who are about receive the benefit of the teacher's wisdom and oration. Target audience analysis doesn't have to be overly complicated, but it would be a mistake to deliver a lecture as if the audience were irrelevant. Their prior knowledge or experience, level of interest, and academic ability may all play a role in a teacher's creative lecture.

The instructor should think about how to lecture, how long to be the sole voice in the classroom, and how much time to allow before asking for feedback or response from the class. A lecture should be paced so that there are not long periods in which the only sound in the classroom is the teacher's voice. The average attention span for listening to an uninterrupted lecture is between 12 and 20 minutes; if a lecture is not punctuated with a break in the teacher's delivery after about 15 minutes, the students will begin to mentally wander. A creative lecturer will ask a question, elicit some response from the class, do whatever it takes to re-focus the students' minds on the themes to be addressed in the next portion of the lecture.

Without becoming overly dramatic or making students uncomfortable, a teacher should personalize the lecture as much as possible by drawing on examples from his or her own life that illustrate key points. Personalizing lectures serves three functions: (1) It helps provide familiar, accessible points of entry to what may be complex ideas; (2) It captures the attention of the class to see a possibly

remote figure speaking in a personally revealing way; and (3) It helps to create a sense of authenticity by speaking publicly about aspects of the teacher's life outside the role as an educator.

Feel free to use notes when lecturing; one or two pages should suffice. A lecture is not the same as unplanned, extemporaneous talking, even though it often may seem that way. Skeleton notes are carefully drawn up and depict an ordered and systematic progression of ideas. It communicates to the students that the teacher has thought about the path along which they are about to be taken. Many teachers use their slides as skeleton notes, a series of brief, perhaps bullet phrases that spark the next key thought or concept to be addressed. Skeleton notes have the advantage of allowing freedom to digress and to include personal anecdotes when they seem appropriate.

A creative lecture should include visual aids. Visual aids should supplement and add to the lecture, but not serve as a replacement for subject matter knowledge and effective public speaking skills. A picture, chart, or map may help the teacher illustrate a particular point in a way that no manner of description can ever achieve. A list of key points on a slide may help the students keep track of where the teacher is, what key point he or she is making, and how many more remain to be addressed.

In the lecture method, the instructor presents a formal or informal discourse such as a series of events, facts, concepts, or principles; explores a problem; or explains relationships. Students mainly listen and absorb the material that is directed toward them. A lecture informs. The instructor has information that he wishes to give verbally to the students. It may be used to orient students to policies, rules, procedures, purposes, or resources; introduce a subject; give directions on procedures; set the stage for a demonstration, exercise, or performance; illustrate situations; or review material.

Preparation for the lecture method includes students having knowledge of the content area or topic. The instructor must rehearse lectures and be knowledgeable about the content area or topic.

Lecture Advantages

- Saves **time** because large amounts of information from many sources can be presented in a short period.
- Permits **flexibility of class size.** The size of the class is limited only by the size of the facility. A lecture can be presented to 2 or 200.
- Permits **flexibility of space.** The area in which a lecture is presented is limited only by the number of students who hear the speaker.
- Permits **adaptability.** A lecture can easily be adapted to the needs of a specific group. The sequence, vocabulary, and examples can be altered to the appropriate educational level, training, and past experience of the group.
- Permits **versatility.** The lecture can be used for a variety of subjects, at any point in the course of training, and with any other method.
- Permits **control** over content and sequence. It can be presented within tight time constraints and with few distractions from the unnecessary material that can intrude when the instructor does not have direct control.

Lecture Disadvantages

- Involves only **one-way communication.** There is very little feedback in the lecture format. The instructor prepares and presents the information with little input from the students. This is the flipside of the control over content and sequence.

- Inhibits the **teaching of skill objectives**. Because it involves only one-way communication from the instructor to the student, it is ineffective in the teaching of a skill, especially a psychomotor skill.
- Inhibits the **use of all the senses** but hearing. Students become easily bored with a lecture because it appeals only to their sense of hearing. There usually is little visual stimulation, and no speaking participation.
- Inhibits **student participation.** Because the student is only required to listen, he/she assumes a passive attitude, which leads to mental distractions and inefficiency.
- Depends on the **instructor's skills** for its effectiveness.

Characteristics of a Good Lecture

- Instructor has good speaking skills.
- Keyed to the adult attention span. Usually no more than 20 minutes of uninterrupted speech and includes questions, supporting media, etc., before another lecture session begins.
- Organized with an introduction, body, and conclusion. The contents are organized to address the clearly stated objectives.
- Accompanied by media (when appropriate).
- Everyone can hear the lecture.
- Instructor provides opportunities for student questions.
- The use of an agenda or outline for the audience to use to make notes enhances the lecture.

STUDY ASSIGNMENT METHOD
(Student Directed)

In the Study Assignment method, the instructor assigns readings in books, periodicals, manuals, or handouts. This method has two basic forms: (1) independent study in which the student carries out the assignment without an instructor or direct guidance, and (2) supervised study in which the student carries out the assignment with an instructor available for guidance and assistance. Uses include the following: orient students to a topic prior to classroom or laboratory work; set the stage for a lecture, demonstration, or discussion; provide for or capitalize on individual differences in ability, background, or experience through individualized assignments; review material covered in class or give the practice essential for the development of skills and problem solving abilities; and provide enrichment material.

Students must know timelines, assistance they can receive, and course procedures and requirements. Instructors must clearly define process and procedures to students.

Study Assignment Advantages

- Increases the **coverage** of material.
- Reduces classroom **time**.
- **Improves learning** because the student can practice on his/her own time to master the skill.
- Permits **individualized attention** with the supervised version.

- Reduces intermediary **interpretation** because the student can go directly to the source of the material.

Study Assignment Disadvantages

- Requires careful planning and follow-up.
- Poses an evaluation challenge because it is difficult to pinpoint a specific element that caused confusion or errors.
- Permits the **practice of errors** because if not corrected immediately, the student will continue as if right.
- Produces **nonstandard results** because of the variations in reading ability and motivation.

Characteristics of a Good Study Assignment

- Instructor plans and assigns work in such a way that the objectives are clear, the instructions lucid, and the motivation present.
- Instructor follows up on the assignment. Nothing will curb motivation faster than if the instructor makes an assignment then never discusses or collects it for grading or correction.
- Assignment provides, if possible, the means of practicing the knowledge or testing comprehension of the assigned material. For example, after a reading assignment, the student must answer questions.
- Instructor provides feedback as soon as possible on the assignment. It can be either in class or on the paper to be handed back. The assignment should be returned to the student at the next class, if not before.

CHAPTER 5—BLOOM'S TAXONOMY

Objectives are the cornerstones of learning. Objectives are developed for all levels of instruction where measurement of learning is required.

LEARNING DOMAINS

One of the most common ways to categorize types of learning is the following learning domains:

Cognitive Domain: The cognitive domain refers to intellectual skills. Intellectual skills consist of discrimination, concept, rule-using, and problem-solving capabilities. Educational environments commonly focus on intellectual skills.

Psychomotor Domain: The psychomotor domain refers to motor skills learning.

Affective Domain: The affective domain concentrates on emotions, beliefs, attitudes, values, and feelings.

RELATIONSHIP BETWEEN LEARNING DOMAINS AND LEVELS OF LEARNING

Each of the learning domains is broken down into identifiable levels that progress from the lowest level through increasingly more complex levels, and finally to the highest complexity level. For the cognitive domain (the focus of CGSC learning), Bloom, in his book *Taxonomy of Educational Objectives, Handbook I: Cognitive Domain,* identified six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. The progression is from the simple recall or recognition of facts at the lowest level, through increasingly more complex and abstract mental levels, to the highest order that is classified as evaluation. The affective domain is also divided into levels of learning that progress from receiving at the lowest level to characterizing by value or value complex at the highest level.

RELATIONSHIP BETWEEN LEARNING OBJECTIVE ACTION VERB AND LEVEL OF LEARNING

Certain words tend to imply certain types of behavior. "Name," for instance, requires the student to recall the name of a person, place, or thing. "Describe" requires the student to not only know what the PPT is, but go one step higher and give examples of the PPT. "Give examples" requires a higher level of cognition on the part of the student and thus has elevated the learning level.

Select the appropriate action verb for each objective being taught. The action verb tells what behavior the student is expected to achieve. Although action verbs are an indication of the level of learning expected, look at the total behavioral statement (action statement, condition, and standard) in order to accurately determine the learning objective level.

COGNITIVE DOMAIN

(Levels of Learning with Related Action Verbs)

The cognitive domain deals with acquiring, recognizing, and manipulating facts, developing the intellectual skills to effectively breakdown these facts into their components, and to recognize the relationships of the components and how they are organized. These developmental levels are knowledge, comprehension, application, analysis, synthesis, and evaluation.

1. **Knowledge.** The recall/remembering of previously learned materials (facts or theories) in essentially the same form as taught.

   Example: The student will list the steps of the Military Decision Making Process (MDMP).

Action Verbs			
Arrange	Define	Identify	Label
List	Match	Name	Recall
Reproduce	Select	State	

2. **Comprehension.** Seeing relationships, concepts, and abstractions beyond the simple remembering of the material.

   Example: The student will explain the step of the MDMP.

Action Verbs			
Classify	Convert	Defend	Describe
Discuss	Distinguish	Estimate	Explain
Generalize	Locate	Outline	Paraphrase
Relate	Summarize		

3. **Application.** The ability to use the appropriate learned material in new and concrete situations.

   Example: Given a situation the student produce a decision using the MDMP.

Action Verbs			
Calculate	Change	Construct	Demonstrate
Develop	Employ	Manipulate	Modify
Operate	Organize	Predict	Produce
Restructure	Sketch	Solve	Use

4. **Analysis.** The ability to break down material into its constituent parts and determine how the parts relate to one another and the overall structure and purpose.

   Example: The student will examine the MDMP.

Action Verbs			
Compare	Contrast	Diagram	Differentiate
Disassemble	Examine	Illustrate	Interpret
Investigate	Separate		

5. **Synthesis.** The ability to put parts together to form *new* patterns or structures, such as a unique set of abstract relations used as a scheme for classifying information.

   Example: Using the product of the analysis learning level, other previous learning, and experience; the student will design a new decision making process.

Action Verbs			
Combine	Compose	Create	Derive
Design	Devise	Extend	Formulate
Fuse	Generate		

6. **Evaluation.** The ability to judge, using internal standards and external criteria, the value of material for a given purpose. Learning in this area is the highest in the cognitive hierarch because it involves elements of all the other categories, plus conscious value judgments based on clearly defined criteria.

   Example: Using the MDMP and other available processes, the student will judge the effectiveness of the new process created in the synthesis learning level.

Action Verbs			
Appraise	Assess	Criticize	Decide
Judge	Justify	Rate	Validate

For the lesson author, the cognitive domain serves as a controlling mechanism for the entire lesson. In using the learning levels discussed above, the lesson author not only sets the intellectual depth for the content to be taught but also establishes student assessment of learning requirements as well. The learning level of content taught must match the learning level of the assessment. Another less obvious cognitive domain controlling feature is the matter of time required to teach the class. What is possible at the knowledge level in two hours is quite impossible at the analysis level given a similar time constraint. A final controlling aspect is that the learning level of the lesson also defines success. If the content requires an analysis of MDMP, then *all* students must be able to accomplish this when their learning is assessed.

AFFECTIVE DOMAIN
(Levels of Learning)

For the affective domain, Krathwohl, Bloom, and Masia, in their book *Taxonomy of Educational Objectives, Handbook II: Affective Domain* identified five levels: receiving, responding, valuing, organization, and characterization of a value or value complex. The progression among these five levels is from simply being aware through an organized internalization of an attitude or value which becomes the defining characteristics of that person.

1. **Receiving (Attending).** The getting, holding, and directing of the student's attention, from the simple awareness that a thing exists to selective attention on the part of the learner. Receiving (by the student) has three levels: *Awareness, willingness to receive,* and *controlled or selected attention.*

Awareness:	Observes, with increasing recognition, the differences in . . . Awareness of the attitudes of others Recognizes the nuances of the written or spoken word Recognizes nonverbal behaviors
Willingness to receive:	Listens to other points of view Attends to the surroundings Accepts differences in cultures
Controlled or selected attention:	Listens to and remembers Preference for . . . Keeps informed on . . .

2. **Responding.** The learner not only attends to a particular phenomenon, but also reacts to it in some way, such as reading the assignment or reading for enjoyment. The instructional objectives relate to "interests." The three levels of responding are *acquiescence in responding, willingness to respond,* and *satisfaction in responding.*

Acquiescence in responding:	Willingness to comply Observes the rules
Willingness to respond:	Voluntarily reads Responds with active interest Participates actively in . . .
Satisfaction in responding:	Finds pleasure in . . . Discovers many new areas or ways of . . .

3. **Valuing.** The worth or value a learner attaches to a particular object, phenomenon, or behavior, ranging from acceptance of a value to commitment. Instructional objectives relate to "attitudes" and "appreciation." The three levels of valuing are *acceptance of a value, preference for a value,* and *commitment or conviction.*

Acceptance of a value:	Feels as a member of a group Continuing desire to develop the ability to . .
Preference for a value:	Encourages other to . . . Assumes an active role in . . . Initiates group action for the improvement of . . .
Commitment or conviction:	Loyalty to . . . Faith in the methods of . . . Devotion to . . .

4. **Organization.** The bringing together of different values, resolving conflicts between them, and beginning to build an internally consistent value system. Instructional objectives relate to a "philosophy of life." The two levels of organization are *conceptualization of a value* and *organization of a value system.*

Conceptualization of a value:	Attempts to identify the characteristics of . . . Synthesizes the basic assumptions of . . . Symbolic or abstract thought is shown by . . .
Organization of a value system:	Weighs alternatives between . . . Develops techniques for resolving disparate values . . .

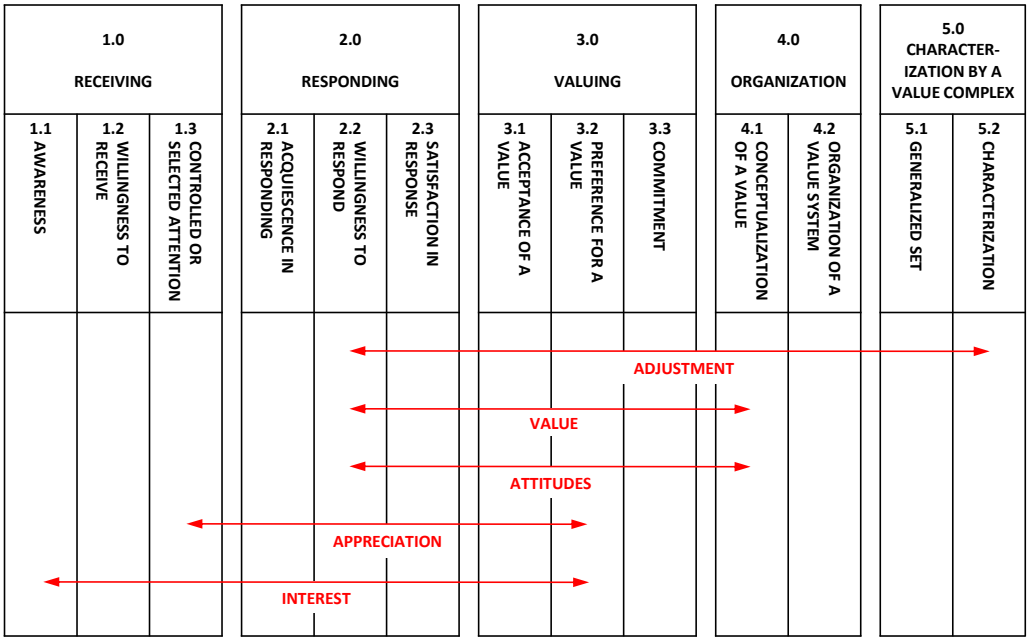
5. **Characterizing by a Value or Value Complex.** Pervasive, consistent, and predictable behavior (lifestyle) developing from a value system which controls behavior for a significant period of time. Instructional objectives focus on personal, social, and emotional adjustments are in this category. The two levels are *generalized set* and *characterization.*

Generalized set:	Readiness to revise judgments Willingness to change opinion when facts and conclusions indicate . . .
Characterization:	Develops a consistent philosophy of . . . Develops behaviors based on ethical principles consistent with . . .

THE RELATIONSHIP OF THE AFFECTIVE DOMAIN STRUCTURE AND COMMON AFFECTIVE TERMS

The foregoing offers a foundational summary for the use of the affective domain in lesson authoring. Why should the lesson author care about the affective domain? Simply put, an examination of the affective domain may be more important to the lesson author than a similar treatment of the cogitative domain. This is because the affective domain offers the means for the student to internalize the new material that the teacher is presenting. Without this internalization the new material does not become part of the student. This can only be accomplished through Bloom's development of a "value complex" to guide the student's behavior or, similarly, Piaget's modification of the student's "organization" though accommodation and/or assimilation of the new material. In the end internalization is key as it is both a destination and journey of student learning.

As shown in Figure 7, Krathwohl, Bloom, and Masia add terms that represent student reaction-to-content, or behavior, that a teacher might see in the classroom. These terms that represent student behavior are interest, appreciation, attitude, value, and adjustment, and they offer the teacher a sense of student location in the *internalization* process. They are defined by the range of objectives that they cover and move from simple to complex, as well as from concrete to abstract (Krathwohl, 1964). Less obvious is the movement of emotions in the continuum, which are low at either end of the continuum and peak near the center. The center of the continuum offers the greatest opportunity for an emotional response to learning, with the terms like satisfaction, acceptance, preference, and commitment.



The range of meaning typical of commonly used affective terms measured against the *Taxonomy* continuum.
(Krathwohl, D.R., Bloom, B.S., Masia, B.B. (1964) *Taxonomy of Educational Objectives*. White Plains, NY: Longman Inc.)

Figure 5. Affective Terms for the Internalization Process

Using the work of Kelman (1958) to analyze Figure A-1, the lower region of the continuum represent compliance that is manifested in the behaviors of interest and appreciation that span from "awareness of receiving" to possibly "acquiescing in responding." The mid-range of the continuum, which Kelman might call identification, covers the behaviors of attitudes, values, and adjustment that span from "willingness to respond" to "commitment to a value." The highest region of the continuum, which Kelman might characterize as internalization, primarily focuses on the behavior of adjustment that spans from "conception of a value" to "characterization by a value complex."

On the other hand, Krathwohl, Bloom, & Masia have expanded their version of internalization to include Kelman's three. As stated above there are sufficient linkages between the two works to make them mutually supporting. In the final analysis, without some achievement of internalization learning does not occur. What could be more important?

The lesson author's role in the *process of internalization* is tied to his use of the ELM in the lesson plan. Think of the *concrete experience* and the *publish and process* as the marketing plan of the lesson plan to be developed. The *concrete experience,* which must support the *generalize new information*, primarily acts as a trigger to ignite the student's past experiences of the lesson topic. The *publish and process* then gets these experiences into the open and allows, or in some cases forces, student reconciliation of all views present. If done properly these first two steps of the ELM will move the student through the "interest" and "appreciation" phases of the internalization process (Figure 7). With the integration of the content of the *generalize new information* step of the ELM into the discussion, the student potentially moves into the attitudes" and "value" phases of the internalization process. The *develop* step of the ELM serves to strengthen "value" phase and prepares the student for the "adjustment" phase of the internalization process. The *apply* phase of the ELM serves the teacher as a means to determine if the student is sufficiently prepared to embark on the "adjustment" journey necessary for the internalization that produces true learning.

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