EDUCATIONAL PROCESS

GOAL:

To gain a knowledge of the process of learning and teaching.

LEARNING OUTCOMES

After completing this module, participants will be able to:

a)　　(i)　　identify the differences between teacher directed and student directed learning

　　　　(ii)　　describe a variety of learning styles

　　　　(iii)　　describe a variety of teaching methods

b)　　(i)　　explain the way they learn best

　　　　(ii)　　explain the appropriate use of different teaching methods

c)　　(i)　　plan and apply teaching methods appropriate to the topic and to the participants

　　　　(ii)　　determine the effectiveness of their own teaching

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Page

WHAT TO DO

Step One   From Your Own Experience   3 hours

Consider the following definitions and your own experience to answer the questions below.

Informal Learning

The process whereby every person learns knowledge, skills and attitudes from daily living.

Non-Formal Learning

Any systematic, organised educational activity carried on outside the formal system to provide selected types of learning to particular subgroups of the population.

Formal Learning

The institutionalised, chronologically graded and hierarchical educational system e.g. school, university, polytechnic, theological college.

1   a)   quickly note down the things that come to mind as having been learnt by you under each of the above headings

       b)   In your current working with youth, which of these learning situations occur? Again, note down the things you would expect the people you are working with to learn in these different ways.

       c)   In the context of your whole church setting what type of learning situations occur?

       d)   Discuss your notes with your mentor. Ask them to consider a) b) c) above from their own experience and compare your answers. What are the differences and similarities?

       e)   Talk with the group of people you work with in you particular youth ministry. How do they understand their learning to have taken place?

       f)   Make a summary of your findings.

Step Two   Reading and Reflecting   6 hours

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2   Read the RESOURCE MATERIAL Pages 4 - 14

3	Find a way to describe the differences between teacher directed and student directed learning. (Refer particularly to Pages 6-8 and Pages 11-14 of the RESOURCE MATERIAL).

Note: You were introduced to some of these concepts in the beginning modules of the Diploma. The material included here seeks to expand and/or reinforce your learning.

Include these things in your response:

examples of each method of learning

from you own recent experience

comment on whether or not the method used best suited the situation and learning requirements/outcomes of the people involved

a brief statement on what you know of your own way/s of learning

4	Describe the methods and techniques that you have used to date in your youth work.

5	Look again at the RESOURCE MATERIAL Pages 6 & 7 and Kolb's learning styles. Reflect on the group of people you work with in Youth Ministry.

How will you:

assess the different learning styles among them?

ensure that you provide for a range of learning styles?

Discuss this with your mentor.

6	Choose two learning styles of people you work with in Youth Ministry. Find your own way to describe the things that help them to learn and the things that hinder their learning.

Give specific examples. (Approx length 1000 words or a 3-minute tape etc).

Step Three Action 6 hours

7	a)	Read the RESOURCE MATERIAL Pages 15-36

Taking into account what you have heard from the people you work with, what you have read in the RESOURCE MATERIAL **and** your own

learning experiences, plan **and run** a teaching session of approx 1 1/2 hours. (This may be with any group you work with).

> State your aim clearly. Explain how you have reached the aim i.e. how did you determine the need.

> Include a statement about the method you are choosing to use, giving reasons for choosing that particular method.

> Make reference to the preferred learning style/ styles of the people you are doing the session with.

> Include: copies of the resources i.e. photos/ drawings, tape, video, readings etc.

> - an outline of the actual steps you intend

> - an evaluation of the actual session.

b)   Describe yourself as teacher. Include information about your motivation, style and methods and a self-assessment of your effectiveness. You may choose to do this in writing or using other media - tape, video, art etc. Share this with your mentor and include some comment from them.

RESOURCE MATERIAL

INTRODUCTION

The Introductory Module of the Diploma in Youth Ministry contained material which set out the understandings of Adult Education upon which the Diploma has been based. It sought to explain some of the differences between teacher directed learning and student directed learning. Teacher directed learning is where the teacher/ lecturer/ leader is seen as the one with all the knowledge/ skill/wisdom (remember this person being described as 'the jug') who pours this into the student ('the cup'). This method of teaching usually requires that the student then shows (through an examination process) that they have learnt what is required by giving the facts back to the teacher in pretty much the same form that the teacher gave them to the student. Student directed learning is understood to involve the student in determining what they need to learn, taking into account what they already know and encouraging the student to actively participate in seeking out knowledge, practicing skills and acknowledging that learning is part of their experience of daily living. This method seeks to carefully integrate theory and practice and allows the learner a variety of ways of presenting their learning. This Diploma acknowledges that both methods have value in particular circumstances. It recognises that student directed learning has a particular contribution to make in the area of faith development and the formulation of values.

In Step One we looked at some of the situations or locations in which we learn - formal, non formal, informal. (Some researchers say as much as 80% of our total learning is in non-formal and informal situations). Another way of looking at learning is to look at it in these different ways:

1   Learning as a **product.** Here the emphasis is on outcomes. We would say - "by doing this I will be able to do this or know that". This is the traditional way of looking at learning.

2   Learning as a **process.** Here we seek to understand what is actually taking place during the learning experience. "As I did this, I found that these things became clear to me. I found that as a result of doing this, that happened."

3   Learning as a **function.** This is an organised and intentional way of testing ideas relevant to particular problems. "We have this problem, which of these solutions will solve it?"

Let's take an example and see how these different styles would apply.

You want the members of the group you are working with to be able to make clear decisions in their everyday life based on Christian values.

If you see learning as a **product**, you might choose particular bible passages that set out the Christian values, have the members of the group read them and then give your interpretation of them as it would apply in particular situations, e.g. The Good Samaritan - help your neighbour.

When you see learning as a **process** you would perhaps begin by talking with the members about the times they have had to make choices. How did they decide? What values were their decisions based on? What did they learn? Would they do it differently next time? What can the bible teach us about these things? How can we relate the situations of the biblical times to our present day situations?

And, learning as a **function?** You could present a series of situations and a number of possible solutions which could be "tested out" by the group. This would necessarily need to result in a "correct" solution for each situation.

Another way of looking at learning is to consider the difference between education and training. It is probably useful for you to think about which you believe you are involved in youth ministry or at least where your main emphasis is. Why? It would

seem to me that if you see your task primarily as 'training'; you will adopt teaching methods that will ensure that the people you work with **do** things in a particular way i.e. you will be concerned mostly with specific behaviours. On the other hand, if you see your task as education, you will be much more concerned with developing ideas, understanding, critical thinking, motivation, values which will hopefully result in a particular way of living. Here is one way of highlighting some of the differences between education and training.

Education	Training
broad	specific
theory (thinking)	practice (doing)
location - community based	location - institutions/ organisations
process oriented	outcomes oriented
lifelong	limited timespan
liberal/ general emphasis	vocational/ job emphasis
content	skills

Teacher Directed Learning

Let's look a little more closely at this notion of teacher- directed learning and consider the learning styles that are best served by this method. I have already briefly noted some of the characteristics.

David Kolb (*1991 - Revised 1994) Experiential learning: Experience as the source of learning and development. Englewood Cliff, NJ: Prentice-Hall)* in his book set out four different learning styles. From the descriptions given, two can clearly be seen as fitting a teacher- directed learning model. This is how they are described.

1   Abstract Conceptualisation (thinking)

Focuses on using logic, ideas and concepts.

Emphasises thinking.

Concerned with building general theories.

Uses a scientific approach to problems.

Good at systematic planning.

Good at manipulation of abstract symbols and quantitative analysis.

Value precision.

Like to analyse ideas.

Like the aesthetic quality of a neat conceptual system.

Learning is enhanced when:

        instructor uses case studies

        they can think alone

        theory readings are required

Learning is hindered when:

        group exercises are used

        simulations are used

        assignments require them to be self-directed or autonomous

        instructors give personalised feedback

        instructors are models of the profession

        asked to share personal feelings about the subject matter

        asked to participate in activities oriented toward experiencing being a professional in the field.

2   Reflective observation (watching).

Understanding the meaning of ideas and situations by carefully observing and impartially describing them.

Emphasise understanding.

Concern with what is true or how things happen.

Emphasis on reflection

Good at looking at things from different perspectives.

Appreciate different points of view.

Rely on own thoughts and feelings to form opinions.

Value patience, impartiality and considered, thoughtful judgement.

Learning is enhanced when:

>   teachers provide expert interpretations

>   teachers guide and limit discussions

>   output is judged by external criteria of field or discipline

>   Teachers lectured

Learning is hindered when:

>   assignments are task-oriented.

Student Directed Learning

Again, this method has been briefly described in the Introduction. You will recall that the Introductory Module talked of Frieire and Knowles as two of the people who have been at the forefront in developing this method of learning. The Diploma is based upon this method.

If we turn to Kolb again and look at two further learning styles.

3   Concrete Experience (feeling)

Being involved in experiences.

Dealing with immediate human situations in a personal way.

Emphasises feeling.

Concern with the uniqueness and complexity of present reality.

An intuitive, "artistic" approach.

Enjoy, and are good at, relating to others.

Function well in unstructured situations.

Has an open-minded approach to life.

Learning is enhanced when:

> feedback is personalised
>
> feelings are shared
>
> teachers are friendly helpers
>
> activities are oriented toward applying skills to real-life problems
>
> get peer feedback
>
> can be self -directed and autonomous

Learning is hindered when:

> there are theoretical reading assignments.

4   Active Experimentation (doing)

Focuses on actively influencing people and changing situations.

Emphasises practical applications.

Pragmatic concern with what works.

Emphasis on doing.

Enjoy, and are good at, getting things accomplished.

Willing to take some risk to achieve objectives.

Value having an influence on the environment around them.

Like to see results.

Learning is enhanced when:

> small group discussions are used
>
> projects are required
>
> they obtain peer feedback
>
> they have homework problems to do
>
> the instructor behaves as a model of the profession
>
> asked to judge one's work by oneself
>
> engaged in activities designed to apply skills to practical problems

Learning is hindered by:

> lectures
>
> teachers serving as taskmasters
>
> having their work evaluated as simply right or wrong.

You can see from the notes: "Learning enhanced when --" and "Learning hindered by --" that the two learning styles noted under this student directed learning section require active participation of the student not only in the learning experience itself but in deciding what needs to be learnt.

Teaching - Learning

There is often a large gap between what is thought to be **taught** and what is **learnt.** In Teacher Directed Learning there is an assumption that the teacher teaches and the student learns. This distinction is not as sharp in Student Directed Learning as there is an acknowledgment that both teacher and student bring knowledge, skill and experience to the learning situation as well as gaining from it.

Theory - Method - Style - Technique

These terms seem, at times, to be used almost interchangeably and therefore can be quite confusing. In this particular module I have used them in the following way.

Theory - to describe the underlying reasons as to why we, in the field of education, choose a particular method of teaching. The theory is devised out of research done into **how** people learn **what.** It has often arisen out of a person's desire to know how we can best effect change in our society and acknowledges that education is never a neutral process. We either educate to **change** or to maintain the **status quo.** Because of this it is important that those of us involved in Youth Ministry have an understanding of **what** and the **how. What** we want to achieve and **how** we can best do that.

Out of a greater understanding of the **theory** of education we can be clearer that we are actually doing what we hope we are. Faith development, deals with the essence of people's lives and therefore we have a particular responsibility to ensure that we work in a way that is safe both for ourselves and those we are working with. Much of the reading on educational theory is quite complex in that it uses the "jargon" of the field just as do manuals on cars or playing golf! I have included a reading from *Rosemary Caffarella and Sharon Merriam from their book "Learning in Adulthood" (Jossey-Bass, San Francisco, 1991).*

Even if you are not familiar with the language used, I encourage you to read it through several times. I am sure you will begin to make links with your own practice and some of the other material in this module.

Method arises out of the particular underlying theory. In this module the two methods talked about are Teacher Directed and Student Directed learning. In the Introductory Module we talked about Andragogy and Pedagogy - two different ways of talking about method. They

do not exactly equate to the two names used in this module but could loosely describe the same thing:

Teacher Directed Learning - Pedagogy

Student Directed Learning - Andragogy.

Style is how I talk about the way a student learns. The style, or way of learning, will indicate what particular teaching method will most effectively meet the learning needs of the student. I used the work of David Kolb as a way of describing four different learning styles and the method that is appropriate to each style. (Have a look at the material on Pages 11-14 (This is another way of looking at this).

Techniques -is a word that is most often used interchangeably with method. It describes more specifically the actual way of teaching. You will be able to add to this list; lecture, group discussion, pyramid, brainstorm, experiment, reflection, assimilation exercises, instruction, repetition, creative writing, poetry, essay, art, craft, song, dance, video, role plays, fishbowl exercises ---

Look now at the table *(7.1). Four Orientations to Learning that is included on P22.* See if you can make some connections here with Kolb's learning styles - which styles would best suit each of these theories? What particular methods and specific techniques would **you** use to achieve the purpose of each?

Methods

Read the extracts on Pages 23-29. *Learning Through Discussion* by Andrew Northledge and *Using the Kolb Learning Cycle as a Design Tool* by Marilla D. Svinicki.

Here are two examples of how student needs might be met using a Student Directed approach. Others have already been listed in this module and you will have participated in many yourself as well as applying them in your own teaching sessions. What is more important than knowing **how** or **what** in using a variety of methods and/or techniques is the **why** and **when.**

For example, a discussion can be a very useful way of learning when people have knowledge and experience **on the given topic** that they are willing to share. However, it can just as easily become a sharing of ignorance and misinformation. This means that if you are introducing new or unfamiliar material to your group, it is more appropriate to begin with a lecture or instructional period **before** moving into discussion. The instruction itself can be done in a whole variety of ways of course:

story   pictures

video   cartoons

film   poetry

reading----

Another example: Often in our Youth Ministry we are concerned with understanding our own and other's value systems. It is possible to **tell** people about these but much more effective to experience them. This is where simulation exercises or role-plays can be much more effective. **A word of caution: These can be very powerful ways of interacting and care must always be exercised with a de-briefing time at the conclusion of the exercise.**

Take some time now to think through **why** and **when** you would use some of the different methods/techniques listed. Also take into account which learning style they would be appropriate to. How will you ensure that a teaching session caters for a variety of learning styles?

Planning and Evaluation

It is not the purpose of the module to focus on **planning** and **evaluation.** However, I wish to touch briefly on these matters knowing that they will be addressed in detail under the Management Topic - Planning. To this end I have included three handouts -

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location - community based

process oriented

lifelong

liberal/ general emphasis

content

Training

specific

practice (doing)

location - institutions/ organisations

outcomes oriented

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vocational/job emphasis

skills

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film poetry

reading----

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TYPE ONE LEARNERS

LIKE TO:

Integrate experience with Self.
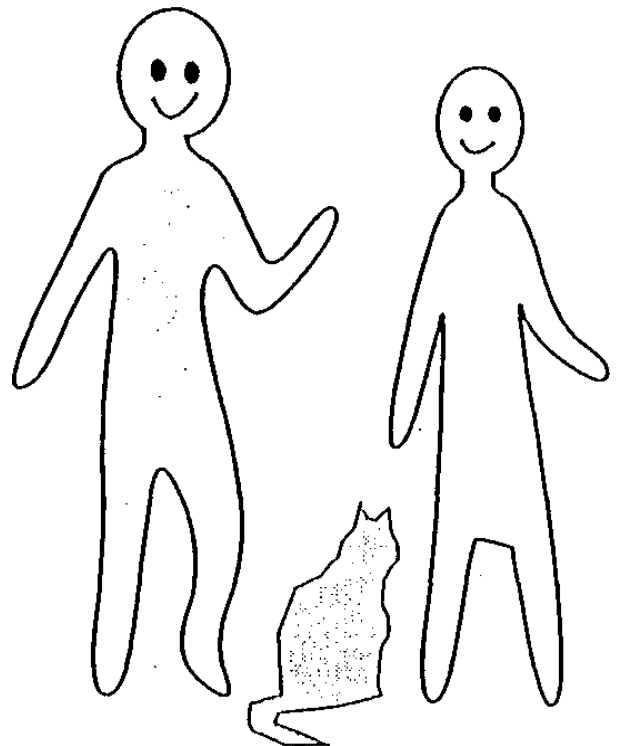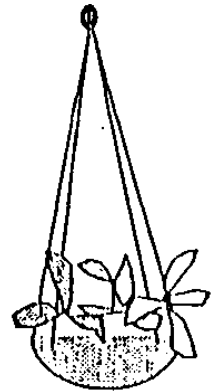
Listen and share ideas.

View from many perspectives.

Work for harmony.

Be personally involved.

Be innovative.

Clarify values.

FAVORITE QUESTION:
WHY?

TYPE ONE LEARNERS

DISLIKE:

Timed tests, pop quizzes.

No student interaction.
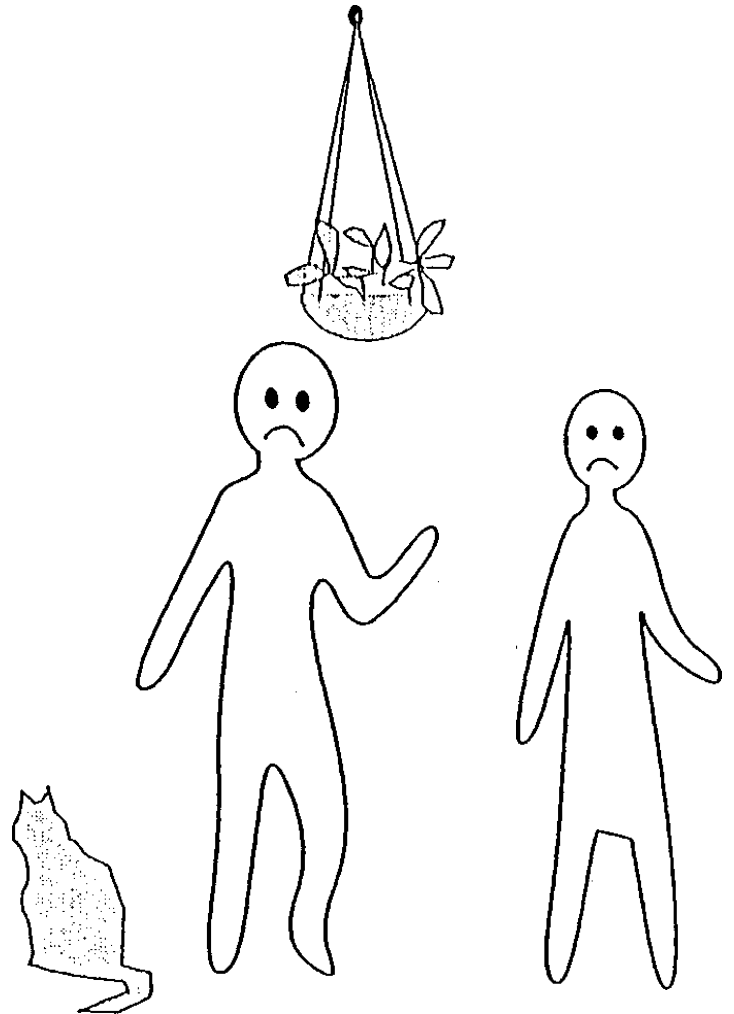
Insensitive teachers.

Individual work.

Skill development.

Lack of thinking time.

Coverage rather than depth.

Colorless environments.

TYPE TWO LEARNERS

LIKE TO:

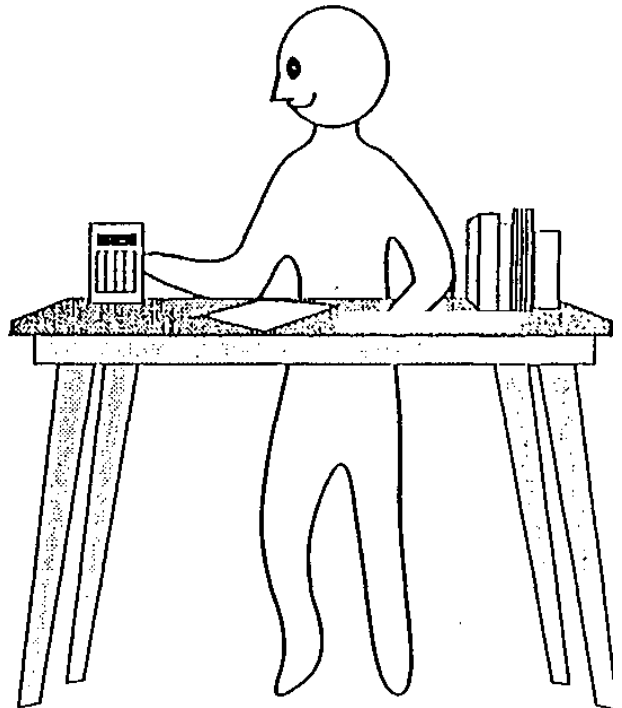Integrate observations into what is known.

Seek continuity.

Know what experts think.

Think through ideas.

Think linearly.

Work with detail.

Critique information and collect data.

FAVORITE QUESTION:

WHAT?

TYPE TWO LEARNERS
DISLIKE:

Information out of sequence.

Multiple authorities.

Pass/fail grading.

Criticism.

Group projects.

Disorganization.

Unknown expectations.

TYPE THREE LEARNERS

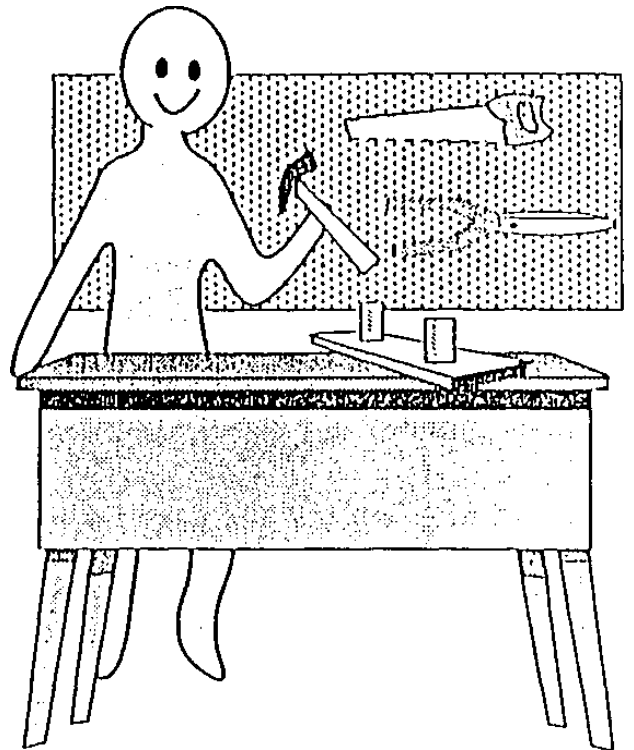# LIKE TO:

Integrate theory and practice.

Test theories and apply common sense,

Solve "down-to-earth problems".

Think strategically.

Use skills.

Know how things work.

FAVORITE QUESTION:

HOW DOES THIS WORK?

TYPE THREE LEARNERS

DISLIKE:

Reading from books.

Memorization.

Confined nature of lectures.

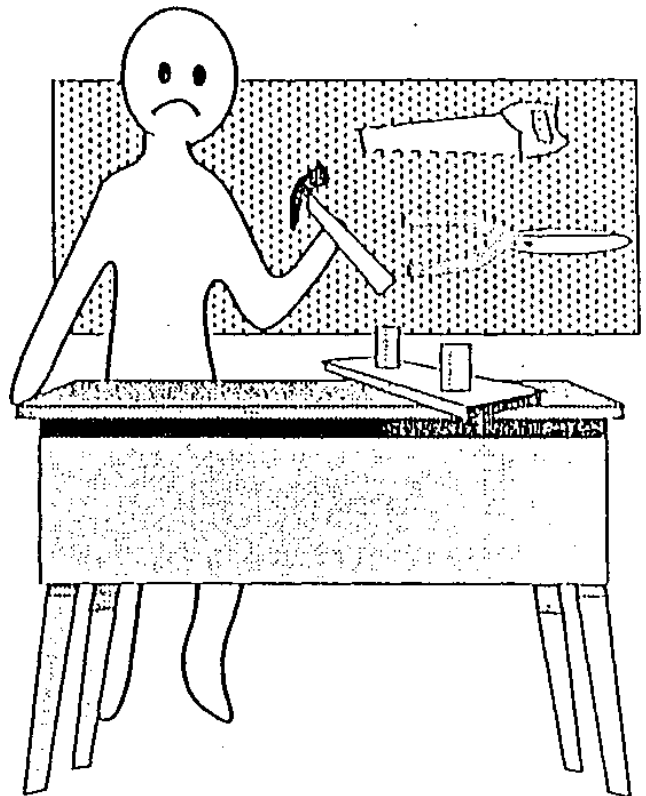Lack of application.

Restricted environments.

(3roup work.

Lack of hands-on work.

Labs that don't work.

Written assignments.

TYPE FOUR LEARNERS

LIKE TO:

Integrate experience and application.
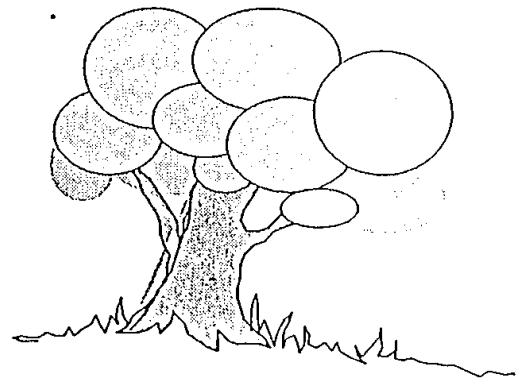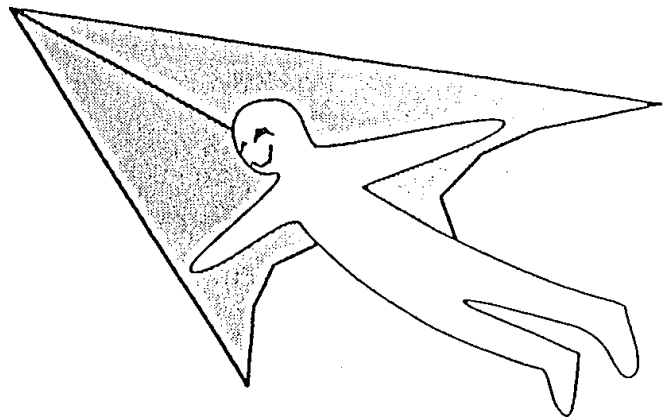
Learn by trial and error.

Discover new idea by themselves.

Get excited by new things.

Adapt to new situations.

Reach good conclusions by intuition Take risks.

FAVORITE QUESTION:

IF?

TYPE FOUR LEARNERS
DISLIKE:

Long lectures.
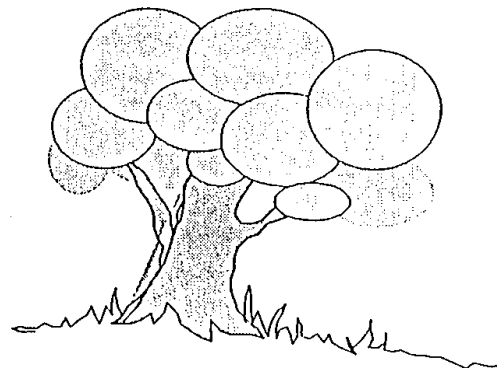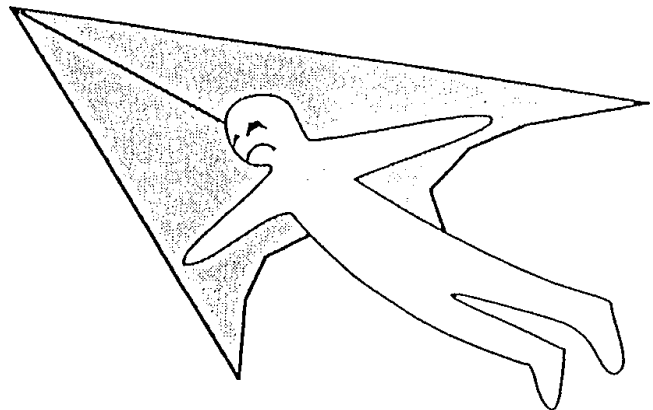
Teacher-oriented classrooms.

Standard routines.

Repetition and drill.

Assignments without options.

Knowledge for its own sake.

Source: **Learning in Adulthood**, Caffarella, Rosemary S & Merriam, Sharon B, Jossey-Bass, San Francisco, 1991.

Behaviorism is a well-known orientation to learning that encompasses a number of individual theories. Founded by John B. Watson in the early decades of the twentieth century, behaviorism loosely encompasses the work of such people as Thorn-dike, Tolman, Guthrie, Hull, and Skinner (Sahakian, 1984). What characterizes these investigators is their underlying assumptions about the process of learning. In essence, three basic assumptions are held to be true. First, observable behavior rather than <u>internal thought processes</u> is the focus of study; in particular, learning is manifested by a change in behavior. Second, the environment shapes one's behavior; what one learns is determined by the elements in the environment, not by the individual learner. And third, the principles of contiguity (how close in time two events must be for a bond to be formed) and reinforcement (any means of increasing the likelihood that an event will be repeated) are central to explaining the learning process (Grippin and Peters, 1984).

Edward L. Thorndike, a contemporary of Watson, is "perhaps the greatest learning theorist of all time" (Hergenhahn, 1988, p. 55). A prolific researcher and writer, "he did pioneer work not only in learning theory but also in the areas of educational practices, verbal behavior, comparative psychology, intelligence testing, the nature-nurture problem, transfer of training, and the application of quantitative measures to socio-psychological problems" (p. 55). His major contribution to understanding learning has come to be called connectionism, or the S-R theory of learning. Using animals in controlled experiments, Thorndike noted that through repeated trial-and-error learning, certain connections between sensory impressions or stimuli (S) and subsequent behavior or responses (R) arc strengthened or weakened by the consequences of behavior. Thorndike formulated three laws of learning to explain his findings. The Law of Effect states that learners will acquire and remember responses that lead to satisfying aftereffects. The Law of Exercise asserts that the repetition of a meaningful connection results in substantial learning. The Law of Readiness notes that if the organism is ready for the connection, learning is enhanced; if not, learning is inhibited (Hergenhahn, 1988). While these laws were modified by Thorndike himself and later researchers, they are nevertheless still applied widely in educational settings.

Thorndike's connectionism became refined and expanded upon by his contemporaries and by those who followed. Pavlov, for example, working in Russia, added concepts of reinforce-ment, conditioned stimulus, and extinction to the basic notion of the stimulus-response connection. Guthrie stated that one law of learning based on contiguity is all that is needed to make learning comprehensible: "Whatever you do in the presence of a stimulus, you do again when that stimulus is re-presented" (Grip-pen and Peters, 1984, p. 61). Tolman introduced the notion that learning occurs in relation to purpose and that there are intervening variables between a stimulus and a response. Hull expanded Tolman's concept of intervening variables and proposed that a response depends on such factors as habit, strength, drive, and motivation. Important as the work of these researchers was (see

Hergenhahn, 1988, or Sahakian, 1984, for detailed discussions), behaviorism was most developed as a theory of learning by B. F. Skinner.

Skinner's major contribution to understanding learning is known as operant conditioning. Simply stated, operant conditioning means "reinforce what you want the individual to do again; ignore what you want the individual to stop doing" (Grip-pen and Peters, 1984, p. 65). Reinforcement is essential to understanding operant conditioning. If behavior is reinforced or rewarded, the response is more likely to occur again under like conditions. Behavior that is not reinforced is likely to become less frequent and may even disappear. Within this framework, even something as complex as personality can be explained by operant conditioning. Personality, according to Skinner, is a "repertoire of behavior imported by an organized set of contingencies"—in effect, a personal history of reinforcements (1974, p. 149). Skinner's research concentrated on positive and negative reinforcement schedules, the timing of reinforcements, and avoidance behavior. In essence, his work indicates that since all behavior is learned, behavior can be determined by arranging the contingencies of reinforcement in the learner's immediate environment. Behaviorists since Skinner have taken into account certain aspects of the human organism but still emphasize that it is environment which controls behavior, "not some mechanism within the individual" (Grippin and Peters, 1984, p. 71).

The behaviorist orientation to learning undermines much educational practice, including adult learning. Skinner in particular has addressed the application of his theory to educational issues. As he sees it, the ultimate goal of education is to bring about behavior that will ensure survival of the human species, societies, and individuals (Skinner, 1971). The teacher's role is to design an environment that elicits desired behavior toward meeting these goals and to extinguish behavior that is not desirable. Several educational practices can be traced to this type of learning. The systematic design of instruction, behavioral objectives, notions of the instructor's accountability, programmed instruction, computer-assisted instruction, competency-based education, and so on are solidly grounded in behavioral learning theory. Adult vocational and skills training—in which the learning task is broken into segments or tasks and there is a 'correct response,' which is rewarded" —in particular draws from behaviorism (Cross, 1981, p. 233). Thus the behavioral orientation to learning has had a profound effect on our educational system. It has also been challenged by theorists from two radically different perspectives: cognitivism and humanism.

The Cognitive Orientation

The earliest challenge to the behaviorists came in a publication in 1929 by Bode, a Gestalt psychologist. He criticized behaviorists for being too particularistic, too concerned with single events and actions, and too dependent on overt behavior to explain learning. Gestalt (a German word meaning pattern or shape) psychologists proposed looking at the whole rather than its parts, at patterns rather than isolated events. Through the research of Gestaltists Wertheimer, Kohler, Koffka, and later Lewin (Hergenhahn, 1988), Gestalt views of learning rivaled behaviorism by the mid-twentieth century. These views have been incorporated into what have come to be labeled as cognitive or information-processing learning theories.

Perception, insight, and meaning are key contributions to cognitivism from Gestalt learning theorists. According to cognitivists, "The human mind is not simply a passive exchange-terminal system where the stimuli arrive and the appropriate response leaves. Rather, the

thinking person interprets sensations and gives meaning to the events that impinge upon his consciousness" (Grippen and Peters, 1984, p. 76). Learning involves the reorganization of experiences in order to make sense of stimuli from the environment. Sometimes this sense comes through flashes of insight. Hergenhahn (1988, p. 252) summarizes the learning process according to Gestalt psychology: "Learning, to the Gestaltist, is a cognitive phenomenon. The organism 'comes to see' the solution after pondering a problem. The learner thinks about all the ingredients necessary to solve a problem and puts them together (cognitively) first one way and then another until the problem is solved. When the solution comes, it comes suddenly, that is, the organism gains an *insight* into the solution of a problem. The problem can exist in only two states: (a) unsolved and (b) solved; there is no state of partial solution in between." A major difference between Gestaltists and behaviorists, therefore, is the locus of control over the learning activity. For Gestaltists it lies with the individual learner; for behaviorists it lies with the environment. This shift to the in-dividual—and in particular to the learner's mental processes —is characteristic of cognitivist-oriented learning theories.

A cognitive psychologist who clarified the focus on internal cognitive processes was Jean Piaget (1966). Influenced by both the behaviorist and Gestalt schools of thought, Piaget pro-posed that one's internal cognitive structure changed partly as a result of maturational changes in the nervous system and partly as a result of the organism interacting with the environment and being exposed to an increasing number of experiences. His four-stage theory of cognitive development and its implications for adult learning are discussed more fully in Chapter Nine.

Currently, a number of research and theory-building efforts take as their starting point the mental processes involved in learning. These efforts include information processing theories, work on memory and metacognition, theories of transfer, mathematical learning theory models, the study of expertise, computer simulations, and artificial intelligence. Converging with cognitive learning theory are theories of instruction that attempt to unite what is known about learning with the best way to facilitate its occurrence. Ausubel, Bruner, and Gagne are good examples of how the understanding of mental processes can be linked to instruction.

Ausubel (1967) distinguishes between meaningful learning and rote learning. He suggests that learning is meaningful only when it can be related to concepts which already exist in a person's cognitive structure. Rote learning, on the other hand, does not become linked to a person's cognitive structure and hence is easily forgotten. Also unique is Ausubel's notion of "reception" learning. New knowledge is processed by the learner "only to the extent that more inclusive and appropriately relevant concepts are already available in the cognitive structure to serve a subsuming role or to provide definitional anchorage" (1967, p. 222). He suggests the use of "advance organizers" to prepare a person for new learning (1968). Ausubel's work can be seen as an antecedent to current research on schema theory wherein schemata —structures that organize the learner's world-view—in turn determine how new experiences are processed (Di Vesta, 1987; Greeno, 1980).

Ausubel emphasizes the importance of the learner's cognitive structure in new learning. Bruner, whose views are often contrasted with Ausubel's, emphasizes learning through discovery. Discovery is "in its essence a matter of rearranging or transforming evidence in such a way that one is enabled to go beyond the evidence so reassembled to additional new

insights" (Bruner, 1965, pp. 607-608). According to Knowles (1984), Bruner's instructional theory is based on a theory about the act of learning that involves "three almost simultaneous processes: (1) acquisition of new information . . . ; (2) transformation, or the process of manipulating knowledge to make it fit new tasks; and (3) evaluation, or checking whether the way we have manipulated information is adequate to the task" (p. 25).

Linking the acquisition and processing of knowledge to instruction has probably been most thoroughly developed by Gagne and Briggs (1979). They contend that there are eight different types of knowledge, each of which has appropriate instructional procedures. The eight types of learning are signal learning, stimulus-response, motor training, verbal association, discrimination learning, concept learning, rule learning, and problem solving (Gagne and Briggs, 1979). Kidd (1973, p. 182) points out that the work of Gagne and others has been an important influence on the "learning how to learn" concept. This concept has been explored in some depth by Smith (1982, 1987), who has been particularly interested in applying it to adult learning. According to Smith: "Learning how to learn involves possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters" (1982, p. 19). Three subconcepts are involved: learners' needs, a person's learning style, and training, which is organized activity, or instruction, to increase competence in learning. In addition to Smith's work on learning how to learn, the cognitive orientation can be seen in two other areas that have particular relevance for adult learning. First, interest in cognitive development in adulthood has been the subject of recent research (see Chapter Ten); second, the study of learning processes as a function of age (see Chapters Eight and Ten) draws from the cognitive focus on learning.

In summary, cognitively oriented explanations of learning encompass a wide range of topics. What unites these various approaches is the focus on internal mental processes that are within the learner's control. Di Vesta (1987, p. 229) has summarized recent directions in cognitive learning: "It is apparent that the current cognitive movement, rather than seeking the general all-encompassing laws for controlling and predicting behavior, as did the earlier grand theories of learning, is directed toward miniature models of specific facets of cognition, such as models of discourse analysis, models of comprehension, ways of aiding understanding and meaningful learning, the nature of the schemata, the memory system, the development of cognitive skills, and the like."

The Humanist Orientation

In contrast to behaviorist theories that concentrate on observable behavior shaped by environmental forces, as well as cognitivist theories that deal with the mental processing of information, humanist theories consider learning from the perspective of the human potential for growth. The shift to the study of the affective as well as cognitive dimensions of learning was in part informed by Freud's psychoanalytic approach to human behavior. Though most would not label Freud a learning theorist, aspects of his psychology such as the influence of the subconscious mind on behavior, as well as the concepts of anxiety, repression, defense mechanism, drives, and transference, have found their way into some learning theories. Sahakian (1984), in fact, makes the case for psychoanalytic therapy as a type of learning theory.

Despite Freud's focus on personality, humanists reject the view of human nature implied by both behaviorists and Freudian psychologists. Identifying their orientation as a "third force,"

humanists refuse to accept the notion that behavior is predetermined by either the environment or one's subconscious. Rather, human beings can control their own destiny; people are inherently good and will strive for a better world; people are free to act, and behavior is the consequence of human choice; people possess unlimited potential for growth and development (Rogers, 1983; Maslow, 1970). From a learning theory perspective, humanism emphasizes a person's perceptions that are centered in experience, as well as the freedom and responsibility to become what one is capable of becoming. These tenets underlie much of adult learning theory that stresses the self-directedness of adults and the value of experience in the learning process. Two psychologists who have contributed the most to our understanding of learning from this perspective are Abraham Maslow and Carl Rogers.

Maslow (1970), considered to be the founder of humanistic psychology, proposed a theory of human motivation based on a hierarchy of needs. At the lowest level of the hierarchy are physiological needs such as hunger and thirst, which must be attended to before one can deal with safety needs —those dealing with security and protection. The remaining levels involve belonging and love, self-esteem, and, finally, the need for self-actualization. This need can be seen in a person's desire to become all that he or she is capable of becoming. The motivation to learn is intrinsic; it emanates from the learner. For Maslow self-actualization is the goal of learning and educators should strive to bring this about. As Sahakian (1984) notes, learning from Maslow's point of view is itself "a form of self-actualization. Among the growth motivations was found the need for cognition, the desire to know and to understand. Learning is not only a form of psychotherapy . . . , but learning contributes to psychological health" (p. 4.'W). While self-actualization is the primary goal of learning, there are other goals (p. 439):

1. The discovery of a vocation or destiny

2. The knowledge or acquisition of a set of values

3. The realization of life as precious

4. The acquisition of peak experiences

5. A sense of accomplishment

6. The satisfaction of psychological needs

7. The refreshing of consciousness to an awareness of the beauty and wonder of life

8. The control of impulses

9. The grappling with the critical existential problems of life

10. Learning to choose judiciously

Another major figure writing from a humanist orientation is Carl Rogers. His book *Freedom to Learn for the 80's* (1983) lays out his theory of learning, which he sees as a similar process in both therapy and education. In fact, his "client-centered therapy" is often equated with student-centered learning. In both education and therapy, Rogers is concerned with significant learning that leads to personal growth and development. Such learning has the following characteristics (p. 20):

1. Personal involvement — the affective and cognitive aspects of a person should be involved in the learning event.

2. Self-initiated — a sense of discovery must come from within.

3. Pervasive —the learning makes a difference in the behavior, the attitudes, perhaps even the personality of the learner.

4. Evaluated by the learner—the learner can best determine whether the experience is meeting a need.

5. Essence is meaning—when experiential learning takes place, it's meaning to the learner becomes incorporated into the total experience.

Quite clearly, Rogers's principles of significant learning and Maslow's views have been integrated into much of adult learning. Knowles's theory of andragogy (see Chapter Thirteen) and much of the research and writing on self-directed learning (see Chapters Three and Eleven) arc grounded in humanistic learning theories. Moreover, humanistic theories have the potential for designing a true learning society, since "there is a natural tendency for people to learn and that learning will flourish if nourishing, encouraging environments are provided" (Cross, 1981, p. 228).

A Social Learning Orientation

The fourth and final set of learning theories to be discussed in this chapter draw from, yet differ significantly from, the behaviorist, cognitivist, and humanist orientations. Quite simply, social learning theory posits that people learn from observing other people. By definition, such observations take place in a social setting —hence the label "observational" or "social" learning (Lefrancois, 1982). Just *how* the learning occurs has been the subject of several investigations.

Miller and Bollard in the 1940s were the first to explore how people learn through observation. Drawing from stimulus-response and reinforcement theory, they argued that people do not learn from observation alone —rather, what has been observed must be imitated and reinforced. "If imitative responses were not made and reinforced, no learning would take place. For them, imitative learning was the result of observation, overt responding, and reinforcement" (Hergenhahn, 1988, p. 321). Their ideas were of course totally congruent with the behaviorist orientation to learning. Their main contribution was to demonstrate that "social-personality phenomena could be described and explained with the more objective and reliable concepts of a learning theory" (Phares, 1980, p. 412). Not until the 1960s, however, with the work of Bandura, did social learning theory break from a purely behaviorist orientation.

Bandura focused more on the cognitive processes involved in the observation than on the subsequent behavior. Central to his theory is the separation of observation from the act of imitation. One can learn from observation, he maintains, without having to imitate what was observed (Hergenhahn, 1988). In fact, the learning can be vicarious: "Virtually all learning phenomena resulting from direct experiences can occur on a vicarious basis through observation of other people's behavior and its consequences for the observer" (Bandura, 1976, p. 392). In addition to being cognitive and vicarious, Bandura's observational learning

is characterized by the concept of self-regulation. He contends that "persons can regulate their own behavior to some extent by visualizing self-generated consequences" (p. 392).

Observational learning is influenced by the four processes of attention, retention or memory, behavioral rehearsal, and motivation (Hergenhahn, 1988). Before something can be learned, the model must be attended to; some models are more likely than others to be attended to such as those thought to be competent, powerful, attractive, and so on. Information from an observation then needs to be retained or stored for future use: "Symbols retained from a modeling experience act as a template with which one's actions are compared. During this rehearsal process individuals observe their own behavior and compare it to their cognitive representation of the modeled experience" (Hergenhahn, 1988, p. 327). Finally, the modeled behavior is stored until a person is motivated to act upon it.

Bandura's theory has particular relevance to adult learning in that it accounts for both the learner and the environment in which he or she operates. Behavior is a function of the inter-action of the person with the environment. This is a reciprocal concept in that people influence their environment, which in turn influences the way they behave. This three-way interactive model is pictured by Bandura as a triangle (Bandura, 1986; Staddon, 1984). Learning is set solidly within a social context.

The importance of the social situation in learning has been further developed by Rotter (1954) whose theory includes strands from behaviorism, cognitivism, and personality theory. Rotter's theory is framed by seven propositions and attendant corollaries that delineate relationships among the concepts of behaviour, personality, experience, and environment. Rotter's theory assumes "that much of human behaviour takes place in a meaningful environment and is acquired through social interactions with other people" (Phares, 1980, p. 406). Key to understanding "which behaviour (once acquired) in the individual's repertoire will occur in a given situation" (p. 407) are the concepts of expectancy and reinforcement. Expectancy is the likelihood that a particular reinforcement will occur as the result of specific behaviour: "The way in which the person construes or psychologically defines the situation will affect the values of both reinforcement and expectancy thereby influencing the potential for any given behaviour to occur" (p. 408). Phares notes that research on the ways in which expectancies "generalize and change" has been a major contribution to our understanding of the learning process (p. 426).

Several useful concepts emerge from social learning theory. For example, the motivation to engage in adult learning activities might be partly explained by Rotter's (1954) notion that "people tend to ascribe their successes and failures to internal or external causes. Thus, there appear to be a personality type whose *locus of control (*Rotter's terminology) is external and another type that is more internally oriented" (Lefrancois, 1982, p. 266). Another connection to adult learning is the importance of context and the learner's interaction with the environment to explain behavior. That is, explanations of learning may need to focus on more than overt behavior, mental processes, or personality. Studying the interaction of all these factors may result in a more comprehensive explanation of how adults learn. Moreover, Bandura's work on observational learning and modeling provides insights into social role acquisition and the nature of mentoring, a topic recently explored in depth by Daloz (1986). 2

FOUR ORIENTATIONS TO LEARNING

Caferella, R S & Merriam, S B *Learning in Adulthood* (1991)

Aspect	*Behaviourist*	*Cognitivist*	*Humanist*	*Social Learning*
Learning Theorists	Thorndike, Pavlov, Watson, Guthrie, Hull, Tolman, Skinner	Koffka, Kohler, Lewin, Piaget, Ausubel, Bruner, Gagne	Maslow, Rogers	Bandura, Rotter
View of the learning process	Change in behavior	Internal mental process (including insight, information processing, memory, perception)	A personal act to fulfil potential	Interaction with and observation of others in a social context
Locus of learning	Stimuli in external environment	Internal cognitive structuring	Affective and cognitive needs	Interaction of person, behaviour and environment
Purpose of education	Produce behavioural change in desired direction	Develop capacity and skills to learn better	Become self-actualised, autonomous	Model new roles and behaviour
Teacher's role	Arranges environment to elicit desired response	Structures content of learning activity	Facilitates development of whole person	Models and guides new roles and behaviour
Manifestation in Adult Learning	Behavioural objectives Competency-based education Skill development and training	Cognitive development Intelligence, learning, and memory as function of age Learning how to learn	Andragogy Self-directed learning	Socialisation Social roles Mentoring Locus of control

USING THE KOLB LEARNING CYCLE AS A DESIGN TOOL

Marilla D. Svinicki, Center for Teaching Effectiveness, The University of Texas at Austin, in 398T Instructor Handbook

> "I'd like to use something besides lecturing, but I just can't ever think of anything to do that's different,"

> "My subject just doesn't lend itself to anything other than lecturing."

> "My students prefer me to lecture. That's how they learn best."

The prevalence of lecturing as the preferred teaching method in higher education flies in the face of much of what we know about how learning takes place. Even faculty who are aware of the desirability of active participation in learning and would like to get the students more involved find it hard to imagine how they could incorporate student activities into their classes. This is a natural outcome of the many years they have spent in classes where the professor spoke and the students wrote. And it's true that students have spent many years learning the skills which they need to learn from the lecture. And yet when students are asked about their preferences for teaching methods, many, if not most, indicate they would like to have an opportunity to participate more in classes (Trani, 1979). Recent work in collaborative learning supports this assertion with researchers finding better learning and motivation in classes where the students are actively involved.

What is needed is a guide to help instructors break through their blind spot about active learning and become more creative in the design of their instruction. The purpose of this paper is to provide one possible guide to more interactive learning, the experiential learning model of David Kolb (1984). This model, which is shown in Figure 1, follows in the footsteps of such proponents of experience in learning as Dewey and Piaget. The circle of learning shown in Figure 1 indicates that learning passes through four phases over and over. It begins with an experience (concrete experience), something which happens to the learner and which is noticed and remarked upon. That experience is reflected upon (reflective observation) and compared with other similar experiences, while the learner looks for similarities and discrepancies. It may be compared with the experience of others as well. It is considered from many perspectives until a picture of the experience comes into focus. Then the learner builds a hypothesis to explain the experience, what caused it, what it signifies, how it will generalize (abstract conceptualization). This conceptualization is then used to make predictions about what will happen in future similar situations, some of which the learner actually seeks out as a test (active experimentation). The test then leads to more concrete experience on which to reflect in order to refine the conceptualization and lead to more testing and so on.
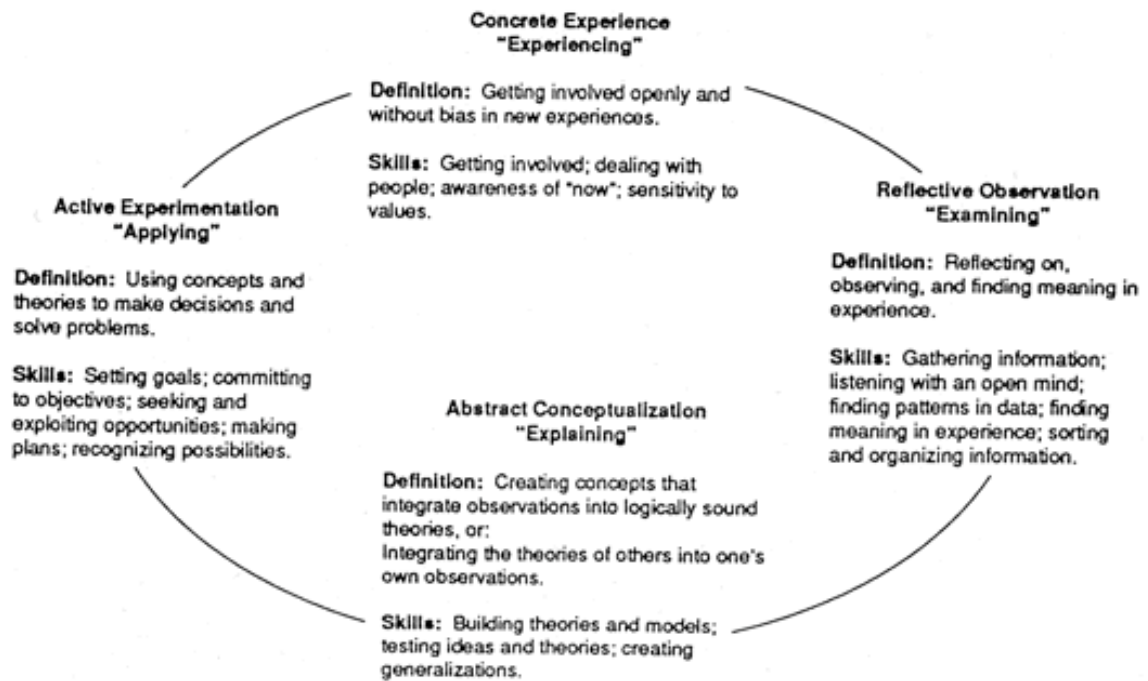
Concrete Experience
"Experiencing"

Definition: Getting involved openly and without bias in new experiences.

Skills: Getting involved; dealing with people; awareness of "now"; sensitivity to values.

Active Experimentation
"Applying"

Definition: Using concepts and theories to make decisions and solve problems.

Skills: Setting goals; committing to objectives; seeking and exploiting opportunities; making plans; recognizing possibilities.

Reflective Observation
"Examining"

Definition: Reflecting on, observing, and finding meaning in experience.

Skills: Gathering information; listening with an open mind; finding patterns in data; finding meaning in experience; sorting and organizing information.

Abstract Conceptualization
"Explaining"

Definition: Creating concepts that integrate observations into logically sound theories, or;
Integrating the theories of others into one's own observations.

Skills: Building theories and models; testing ideas and theories; creating generalizations.

Figure 1: The experiental learning cycle.

As one implication of this model, Kolb maintains that different individuals excel in different aspects of the cycle or show preferences for different learning activities. Some learners prefer to spend a lot of time exploring the environment and experiencing first hand; others prefer to manipulate data and spend their time reflecting on possible interpretations of it. Still others prefer the practical application of concepts to real life problems, and some just prefer to solve the problems regardless of the concepts which underlie the solutions. Thus, in a class of SO students an instructor may have a whole array of different preferences for learning activities running the gamut from active participation to quiet reflection. Really efficient learners are able to function in all types of learning activities, but we tend to show a preference for one over the others.

The question posed by such a situation is how an instructor is to satisfy all these different learners. Most instructors tend to go with the teaching method which most closely matches their own learning preferences. They have to work at adapting to different types of learners. In order to help these instructors see the possibilities, this paper proposes that the experiential learning cycle be used as a heuristic for considering alternative ways of integrating all types of learning into the instructional environment

Various activities support different phases of the cycle. For example, field trips and laboratory work are ways an instructor can give students the concrete experience portion of the learning cycle. The students then reflect on those experiences in laboratory notebooks, logs or narratives recounting what went on during the field trip. By comparing their experiences with those of the other students in discussions, students begin to make generalizations and speculations about those experiences and eventually draw some conclusions about what might be responsible for their observations. They can construct their own models as groups or receive information from the instructor in a lecture about

explanatory models and then go back to their notes or the laboratory to see if the models they have developed or heard about do, indeed, explain their observations.

Some of the possible instructional alternatives are laid out in Figure 2. An instructor seeking to vary his or her instructional options can select an activity from each of the four categories to take the students through the learning cycle. For example, a unit on aging and social policy might begin by having some students visit a variety of social welfare agencies which serve the elderly to gather information about services which are provided while another group of students spends time interviewing elderly citizens about their needs. The two groups then join forces to compare their findings and look for the correspondence between what needs were identified and what services were available; the instructor might then invite local policymakers to discuss the ways they determine which services to fund. After this discussion the students might spend some time trying to identify the variables which influence which needs actually get funded. Students would then return to their data to determine if the pattern of needs and funding matches the variables they have identified.
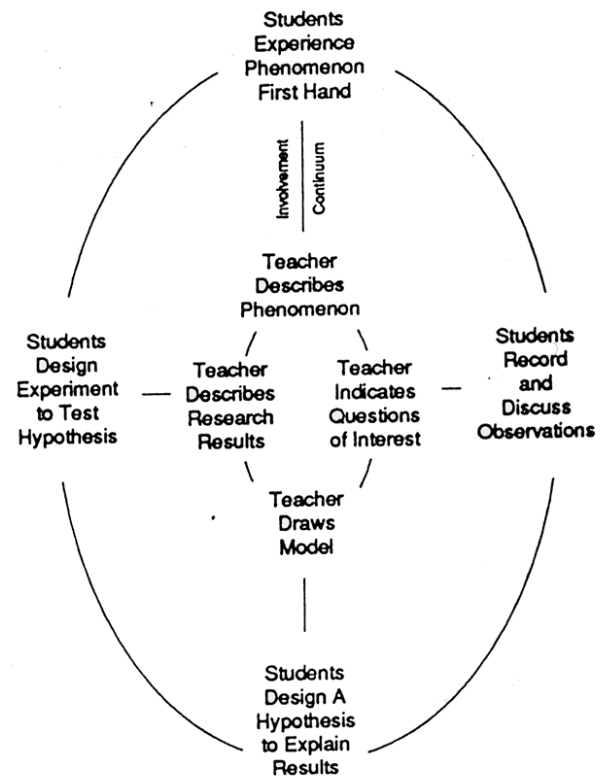
This cycle of experience-reflection-conceptualization-experimentation can be used in many different content areas. Some activities could be used for more than one purpose. For example, simulations can be both a source of concrete experience and a way to test hypotheses. In our example, the discussion was used both as a way of comparing and combining data during the reflection phase and as an occasion to produce potential models during the conceptualization phase for later testing. The distinguishing variable is what type of learning is being accomplished at any given point

To help clarify the fact that it is the student who is experiencing in the experiential learning cycle, we can modify the terms we use to focus more on the learner. Thus concrete experience becomes "experiencing;" reflective observation becomes "examining;" abstract conceptualization becomes "explaining;" and active experimentation becomes "applying." These terms are seen in Figure 1 below the more technical terms.

In using the cycle as an instructional design tool, some instructors may have difficulty in imagining how they could incorporate some of the phases into their teaching. For example, it's hard to experience history. Or is it? Perhaps one just needs to modify the notion of "experience" a little. A modification to the model which has been proposed by Svinicki and Dixon (1987) suggests that there are varying degrees at which a learner can directly experience a situation and that this might help solve some of the dilemmas faced in various disciplines.

To illustrate, consider the engineering professor who is trying to teach the students to understand orbital calculations. He certainly can't shoot them up in a space ship and have them practice calculating their orbits, but he could simulate the space shot on a computer. Or consider the history professor who wants the students to learn about the effects of media coverage on the public's reaction to a war. Starting a war would be impractical, but she can show newsreel footage and other media coverage from various periods and have the students react to the images they see. She can then have them read about public reactions to the various wars portrayed in the images they've seen.
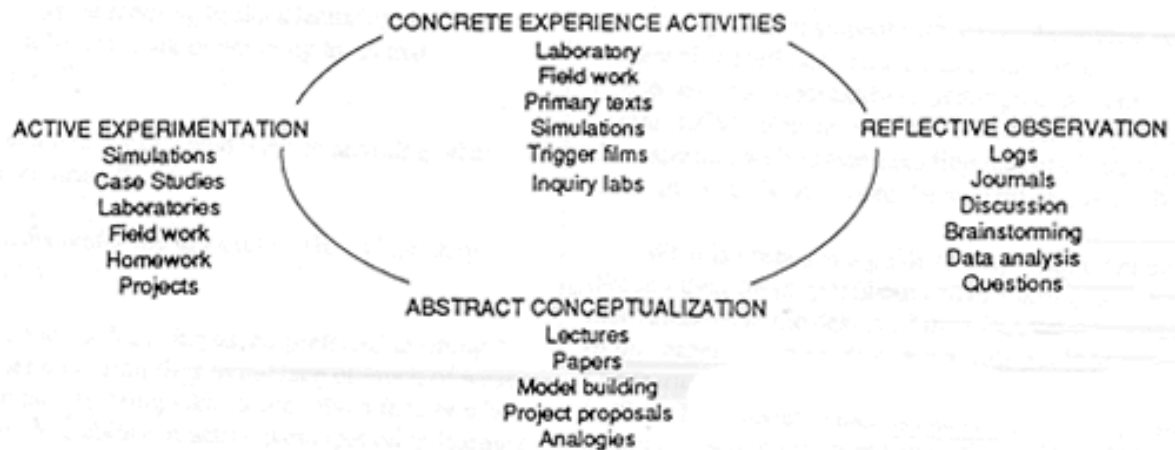

Figure 3. Examples of instructional activities for various cycle phases

In this modification of the learning cycle, Svinicki and Dixon have added a dimension of "directness" to the experience, as shown in Figure 2. Some learning activities involve real experience of a situation; some simulate the experience with varying degrees of veracity. These activities move from the student as actor (direct experience of the phenomenon) to student as observer (indirect experience of the phenomenon). At the outer edge of the figure, the student is totally engaged in the experience firsthand. At the middle, the student experiences the phenomenon only through the secondhand experience of a lecture in which the instructor uses examples to provide vicarious experience, rhetorical questions to simulate reflection, the body of the lecture to provide the model of conceptualization, and more examples which show how the model plays out in reality.

Of course, Kolb would favor instructional methods which are at the edge of the figure and involve the student directly. But it is possible that, indeed, some content does not lend itself to direct involvement for whatever reason: safety, practicality, liability, and so on. Nevertheless, the use of the cycle to stimulate our thinking as instructors on what *might* be possible increases the probability that we will take the next step and expand our instructional options.

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THE PYRAMID TECHNIQUE

or Learning through Discussion (Andrew Northedge)

Step 1	Individual work (3-5 mins)	• focuses student on topic • reduces pressure later on • reminds each student that s/he has a contribution to make
Step 2	Work in pairs (3-5 mins)	• reduces nervousness • builds contact within the group • balances out vocal/nonvocal students • involves everyone • creates a good working atmosphere
Step 3	Small groups (3/4) (10-20 mins)	• a more free-ranging discussion can take place • individual has support of partner • bulk of productive discussion takes place • students learn from each other
Step 4	Whole group (plenary) (15-20 mins)	• shares ideas around • builds group cohesion • students can direct questions to the tutor

Why do I think this is such a good technique?

• it empowers students by affirming what they each know and what they collectively know (I have found again and again that all the textbook strategies will arise from the group, usually expressed in much more interesting ways and backed up by personal experience.)

•it is an open-ended process which avoids the orthodoxy of right answers and instead focuses on better ones, and the range of better ones.

• it is student-centered yet the role of the teacher as guide/facilitator/resource person is also important

• everyone gets a chance to talk and in some quite non-threatening contexts e.g. pairs

• students are explicitly encouraged to work on problems cooperatively, which encourages a sense of interdependence rather than individualism and competition

• it encourages the student to critically reflect on her/his own shortcomings as a student in a context where at the same time s/he can pick up ideas that peers have found successful

LEARNING THROUGH DISCUSSION

Andrew Northedge

The basic structure I have adopted for a ninety-minute session has tended to take the following form:

		Approximate time
Step 1	Individual work	Five minutes
Step 2	Work in pairs	Ten to fifteen minutes
Step 3	Small groups (four to six members)	Thirty to forty-five minutes
Step 4	Reporting back to the whole group	Thirty to forty-five minutes

Individual work

One of the intrinsic problems of group discussions is the multiplicity of demands made on the students. Each student is involved simultaneously in:

a) listening to the discussion

b) thinking about what has been said and formulating points of his own

c) finding suitable entry points for his contributions

d) attempting to maintain an overall picture of where the discussion is heading (and if necessary intervening to change its direction).

Under this pressure, and because discussions tend to gain rapid momentum in unexpected directions, students often forget points they had originally intended to make. A very narrow perspective on a topic is frequently drawn by one or perhaps two students and, although several alternative points of view could have been contributed by other group members, the process of following the thoughts of the dominant members drives these alternative views to the back of the minds of the other members or makes the views seem irrelevant in the light of the perspective which has been imposed. Indeed many of the less confident students are only too ready to believe that they have nothing relevant to contribute to the discussion.

For this reason I have asked students to begin each session working individually, writing notes of two or three main points they wish to raise. The aim is firstly to draw the students' attention away from the problems of a day's work towards the subject for discussion, so that the early minutes of the session are not spent vaguely fumbling to recall the main points of the material. The second aim is to remind the students that they each have their own points to make on the subject matter and to provide written evidence of this to refer to when alternative points of view seem overwhelming.

Working in Pairs

The second stage, 'working in pairs', is particularly useful during early meetings. Many students, although they may speak in a larger group, are actually very nervous when they do so and are careful to conceal any views on which they think they might be attacked. Others become increasingly tense as they wait for an opportunity to speak until they eventually lose all confidence in the possible value of their ideas. Talking in pairs eliminates the 'public speaking' element of discussion groups and reduces the students' understandable tendency to 'paper over the cracks' in their understanding of the material. A one-to-one discussion is quite different in its psychological implications from any larger group. As soon as the group size is raised to three there is the possibility of one student being 'wrong[1], or in other words, out-weighed by numbers. Also it is harder for a shy student to pursue a theme, since the others may take the discussion in a different direction. In fact it is quite easy for the shy student to revert to his usual 'safe' role as 'one of the quiet ones' or 'one of the less knowledgeable ones'.

In a one-to-one discussion even the shyest students are virtually compelled to speak, if only in response at first to the ideas of the other. Equally the more dominant students become aware that their partners have not contributed and may spontaneously attempt to elicit their ideas. In this way the less vocal students gain confidence through practice in articulating their ideas and in many instances through receiving support for them. Indeed this stage of discussion can be revealing both to the less forceful students in finding that their ideas are acceptable to another and to the more vocal students in finding that the quieter students have more to offer than is often apparent. For this last reason and to avoid the formation of cliques, I have attempted to prevent students from pairing up with a partner from a previous session.

From the point of view of the group as a whole the stage of working in pairs has the advantage of involving everyone immediately from the beginning of the session and of creating a buzz of conversation so that the atmosphere of the room is one of activity and exchange of ideas rather than of awkward silences.

Small groups

It is at the third stage that the bulk of productive discussion takes place. Ideally it involves pairings of the existing pairs but where overall numbers, or the arrival of latecomers, do not permit this, groups of five or six may be formed. As a result of the increase in group size the discussion will tend to be more free-ranging than in the pairs, but, in contrast with the usual group situation, the more nervous students have the support of a partner in expressing the points they have agreed between them. Having tried an idea out (for example querying the meaning of .a statement) and having found that at least one other person is willing to support

it greatly increases the confidence of the shyer students. Where the group contains only four students there is the added advantage that neither pair can be 'outnumbered'.

Provided that all members are participating, a group of four is quite large enough to generate a wide range of ideas and is small enough to give all members an opportunity to speak. Where several of these small groups are working in the same room there is the additional benefit that the room is seldom silent so that gaps in the discussion are not so noticeable. Indeed, a group member may overhear a useful new theme from one of the other groups.

Reporting Back

The final stage of bringing the groups together for a general reporting session tends to be closer to the traditional tutorial situation, since there are too many participants for a free discussion. (In any group larger than about six, some students tend to slip back into a passive role). The aims of this stage are firstly to give a purpose to the earlier discussion,' secondly to allow the different groups to become aware of aspects of the topic which they have left uncovered, thirdly to give an opportunity for students to direct questions at the counsellor (or tutor) and finally to foster cohesiveness within the whole group.

These sessions require considerable skill of the counsellor, if the earlier 'open' atmosphere is not to be lost. The counsellor can help to make coherent sense of the various contributions by making notes of points on a blackboard and summarizing at the end. (Taking one point from each group in turn tends to be fairer in terms of time allocation than dealing with the entire report from one group before moving to the next).

The length of time needed for this final stage depends on the subject-matter. If most of the students are having difficulty and feel the need for expert advice this stage can be extended and the earlier stages used for the formulation of questions which the students wish to put. Where, on the other hand, a reasonable proportion of the students have grasped the material well enough to be able to explain it to the others, the final stage can be a brief summary.

Benefits of small groupings

My own experience of introducing this approach after initially trying the Learning Thru Discussion approach has been that:

a) students said they enjoyed the discussions more

b) the amount of participation from the quieter students was markedly increased

c) the quality of the arguments improved considerably.

Formality, competitiveness, and hostility were less noticeable than previously and the differing abilities and needs of the students were more easily accommodated. Misunderstandings of terminology and ideas were more easily cleared up and red herrings were sooner trapped. The system appeared to adapt quite easily to changing membership from session to session and, particularly importantly, the effect of certain students who had been notably dogmatic and overbearing in larger groups were neutralized or at worst shared out between different groups of students from one week to the next.

In addition I found that as a group leader I was under much less stress than I had been in the Learning Thru Discussion groups. I imposed my ideas much less on the students. I had time to spare to deal with other matters and I enjoyed myself much more.

EVALUATING PROGRAM IMPACT

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Margaret E. Holt *Assistant Professor Adult Education University of Georgia*

Adult educators subscribe to the importance of evaluation as a step in the process of planning and conducting educational programs. Many evaluation methods are limited to "satisfaction indexes!" "Satisfaction indexes" serve to suggest to what degree the participants felt they achieved the objectives of the program — the assumption being that: (1) the participants were aware of the objectives, and (2) that the participants understood the objectives to be learning. As used in this chapter, learning refers to what the participant should know, be able to do, or have an attitude about at the end of the educational program. Information from "satisfaction indexes" is useful to provide directions for future programs, but unfortunately, participant satisfaction has tended to be the evaluative norm. Stephen Brookfield observes:

> More often than not, the programmer writes a brief report made up of a number of personal, mainly intuitive observations about the beneficial outcomes of the activity... Such observations are, however, inevitably open to accusations or distortion, subjectivity, and personal bias. Moreover, if the criteria used for making evaluative judgements regarding the success or achievements of a program are entirely personal, they are likely to have limited replicability.[1]

They are also not likely to be adequate in areas of adult education that require an index of satisfaction, an index of learning, and an index of impact on job performance. The failure of many adult educators to provide substantive data reflecting the impact of continuing education programs on participant learning and performance has caused many sponsors to question the validity of such experiences. In an era of increasing accountability, adult educators must apply more rigorous evaluative study of their programs. The purpose of this chapter is to encourage adult educators, particularly those involved in programs with individuals who need to improve performance, to consider supplemental evaluation methods. An equally important purpose of this chapter is to provide useful suggestions for conducting evaluation that measures impact on learning and performance.

Impact Evaluation — Evaluation of the impact of an educational program refers lo (he assessment of the degree the participant has reached the predetermined learning objectives and the job performance criteria. Impact evaluation includes an assessment of participants prior to an educational experience; an assessment of participants change in knowledge, skill or attitude immediately after the educational experience; and a similar assessment after a predetermined time lapse following the program.

To many readers, impact evaluation is not new because the steps noted above follow closely the Tylcrian model of developing specific learning objectives and determining whether the

participants achieved those objectives. Those readers aware of the work of Kirkpatrick should also be familiar with impact evaluation; for example, he emphasizes these questions:

Was productivity increased?   Was quality improved?   Were costs reduced?

Was morale improved?   Was turnover reduced?   Were accidents prevented?[6]

Focusing more specifically on the learner, impact evaluation would seek to provide the answer to these questions:

> Did participants like the program?

> Did participants learn the concepts, principles and/or skills?

> Are participants using the concepts, principles and/or skills on the job?

> Has the change in participant performance changed the organization?

While the concept of impact evaluation may be familiar, its use in adult education has been limited. Reasons for the absence of a more aggressive use of impact evaluation are the time commitment (six months to a year), and lack of financial resources and staff. Perhaps another reason, not always voiced, is the paucity of guidelines and methods for conducting impact evaluation.

Impact evaluation adds significantly to the time for bringing a program to completion; it usually demands more staff and additional funding. But, all three of those variables can be accommodated with appropriate planning by committing to impact evaluation and building it into the planning and implementation processes.

GUIDELINES AND METHODS FOR CONDUCTING IMPACT EVALUATION:

1. Is it likely that the program will be repeated or modified for follow-up? There is not much value in preparing and conducting an impact study of a program that will not be repeated or complemented by future programs. A key purpose of an impact study is to learn from mistakes and make adjustments to improve future programs.

2. Two unavoidable administrative decisions concern funding and personnel. Impact studies can involve considerable costs as well as demand the expertise to plan, direct, and manage such studies.

3. Is an impact study a requirement of sponsors and/or funders? If so, special guidelines and monies may be predetermined by outside organizations.

4. Arc the program participants likely to remain in their positions over a period of time to allow an impact study?

5. Responding to the following questions should provide additional guidelines:

> a. What is the purpose of the impact study?

> b. For whom is the study being conducted?

> c. Who should conduct the study?

> d. What information is needed from the impact study?

> e. How much detailed information is needed?

> f. What are the potential consequences of the impact study findings?

g. When should and can impact be measured?

h. When arc the findings needed?

i. What methods for evaluating are most feasible and appropriate?[5]

How do you measure impact?

Assuming that an impact evaluation is chosen as the appropriate measure of a program's outcome, a decision must then be made relative to the methods of implementation. The following list represents the most commonly used methods reported in the literature:

1. mailed questionnaires

2. person-to-person interviews

3. telephone interviews

4. written reports by instructors

5. performance observations

6. cognitive tests

7. audit ratings by clients, or trained auditors

8. case studies

9. simulations

10. documentary records

11. action plan reviews

A critical element for all of those methods is the type of question(s) asked in follow-up studies. Three months after the program the following questions were found useful in gathering program impact data from participants:

1. List any particular ideas or insights presented in the program that stuck in your mind?

2. In what ways has the program had a direct impact on your thinking?

3. If you took notes during the program, what have you done with them since?

4. Did you receive any handouts in the program? If so, what have you done with them?

5. Did your supervisor encourage you to attend the program?

6. In what ways has he or she supported you in using the information learned?

7. What teaching methods were used by your instructor?

8. Were these methods best suited for helping you to learn? If not, explain and suggest what would have been better for you.

9. If your learning expectations were not met, can you explain why?

Participants should be advised during the program to anticipate future contact for opinions and questions. These questions illustrate types of follow-up inquiries which may aid adult educators in obtaining some measure of learning impact.

PROGRAM CONSIDERATIONS FOR IMPACT EVALUATION

1. Planner(s) should have a definitive understanding of the characteristics of the participants. Cervero has conducted preliminary studies to determine the effectiveness of continuing education in the work place.[2] In particular, his work is designed to examine the components of a framework linking continuing professional education and performance. The components of the framework include personal characteristics, plans to implement goals, the educational program, and the social system of the participant. While he cautions that his findings are preliminary, Cervero found that participant characteristics command the greatest percentage of variance in the framework. He is careful to remind adult educators that the degree of program planner's control over these components varies. He suggests, "these [personal] characteristics are generally not controlled by program planners!"[3]

Among the participant characteristics found to be an important element in program impact are the intelligence and developmental level of participants. Positive impact results from programs in which content is relevant to both characteristics.

Another participant characteristic relevant to program impact is the attitude of the participant toward the change in performance proposed in the educational experience. If the new performance can be presented so as to answer the following questions affirmatively, the participant is more likely to employ it in his or her work setting:

a. Is the performance stated clearly and precisely?

b. Is the performance congruent with the participant's philosophical positions?

c. Is the effort in time and energy worth the anticipated results in the work setting?

2. **Planner(s) should build a "learning transfer" or change segment into the program.** If program developers and sponsors desire that program content be transferred from the program site to a post-program setting, they should consider designing a specific program component for directing such application. The emphasis of this aspect is to develop an "expectation" that what is learned in the educational experience will be applied by the participant. Simple and useful ways to foster learning transfer include publication of conference objectives and intended program outcomes that anticipate back-home implementation of program learning, encouragement throughout the learning experience to "try this procedure in your work setting," illustrating the benefits of a new performance, and providing emotional and social support for practice sessions in the learning experience.

3. A third aspect of program development is to use a variety of methods in training and instruction involving practice. Research on impact studies points to a need to provide a greater variety of teaching methods. Such teaching methods as case study, simulation, games, demonstrations, role play, and sociodrama enhance learning and performance. Grabowski provides a summary rationale for offering practice in an educational experience: Provide learners with continuing opportunities for practice and feedback, thereby enabling them to improve performance beyond specific educational activities... Include opportunities

to develop and practice strategies that alternate between new ideas (theory, knowledge, and skills) and action tasks (actual performance) in the educational program.[4]

4. A fourth aspect necessary in the program development process involves follow-up supervised instruction and encouragement. It could be advantageous for trainers and programmers to advise participants during a program that they intend to periodically contact them following their formal continuing education to determine if they need help implementing the knowledge and/or skills presented during the program.

Equally necessary is the presence of a supportive supervisor and colleagues in the source environment. Both should serve to provide an enthusiastic affirmation of new techniques learned by the participant, thereby reinforcing learning transfer to the work setting.

5. Program impact is also enhanced by matching time frames to volume of program content.

Sparks' review of the research on effective staff development is helpful in demonstrating the importance of the relationship between scheduling and content.[7] He found that the majority of research on instructional improvement indicates that single session inservice programs are largely ineffective. Inservice programs spaced over time have greater impact because they provide the participant the opportunity for "mutual adaptation" — the time to integrate new content with existing ideas and practices; and because such programs provide for "concerns adoption" — the opportunity for teachers to deal with both personal and student concerns that are raised by the new content. Ideally, Sparks found small "chunks" of content presented over one to two weeks to be better than one short session or one long session with several agenda.

In addition to findings related to scheduling and content, Sparks discovered a generic format that promotes program impact. The following steps comprise the format:

> a. Diagnosing and prescribing. This is basically a needs assessment and/or a pre-test. This step provides a profile of learning and performance expected levels.

> b. Giving information and demonstrating. Participants are introduced to the content.

> c. Discussing application. Participants engage in purposeful conversation, attempting to integrate content with the work environment.

> d. Practicing and giving feedback. Through role-playing, peer observation or a number of other methods, participants work with the content and receive constructive evaluation for improvement.

> e. Coaching. Participants receive assistance with transfer skills from the program to the work setting.

6. A sixth aspect for building program impact is to assess the availability of materials, products, or equipment to implement new skills in the work setting.

With continuous development of new technology, it is important to plan programs in which new equipment and products can be demonstrated. However, it should be considered that participants may be returning to settings where the new technology is not available.

7. The final aspect for promoting program impact is to find trained observers for follow-up evaluations. Although requiring additional time and funds, this aspect raises the

quality of follow-up impact data. Having on-site observers to chart and/or analyze actions in the work setting provides a primary source of the effect of a program on performance. Observers may need to attend a training session to learn about and practice their role. A representative sample of participants will provide adequate work-setting performance data.

SUMMARY

Philosophically and pragmatically, most adult educators agree that evaluation is a critical component of the program development process.

In a period when accountability is a priority in decision-making over resources, particularly in continuing professional education, more substantive evaluation methods must be found and used. Impact evaluation, determining the level of change in participant learning and performance, is one alternative with the potential for addressing the accountability question, as well as the larger question of the educational impact of programs. Further, impact evaluations demonstrate a commitment to the principle of focusing on the learner.

Six guidelines, to assist program planners in conducting impact evaluations, have been presented. Of the several methods available for conducting impact evaluation, no one has priority over the other. The essential question is what fits with the program. Suggestions are included for maximizing both pre- and post-program data generation regarding learning and performance.

Equally important in the implementation of impact evaluation is whether or not certain aspects of program development are employed in planning and conducting an educational experience. The program planner should: know the nature of the participants, stimulate an expectation of learning transfer, provide for a variety of instructional techniques and practices, arrange for follow-up instruction and encouragement, correlate agenda time frames to program content, ensure that the appropriate resources are in the participant's source environment, and provide for trained observers in the source environment.

Impact evaluation, although not new and not the only alternative, is a viable method to complement participant satisfaction indexes.

NINE EXEMPLARY TEACHING PRINCIPLES

1 Learn to know your students.

2 Use students' experience as class content.

3 Tie theory to practice.

4 Provide a climate conducive to learning.

5 Offer a variety of formats.

6 Offer a variety of techniques.

7 Provide students feedback on their progress.

8 Help students to acquire resources.

9 Be available to students for out-of-class contacts.

PLANNING A TEACHING SESSION

1 Decide what are the **aims** of your session.

2 Assess the knowledge, skills and attitudes of participants.

3 Consider the time available and **limit the content** appropriately.

4 Decide on the essential **learnings** you would like the participants to gain.

5 Structure the session in a way that will help participants learn.

6 Prepare materials etc.

7 Present the session.

8 Get feedback from participants.