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The philosophy Of Pedagogical Training The Adult Learner

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SUMMARY

This report described the many characteristics of adult learners and the adult learning process. Instructing adults is different from teaching children because the relationship of the, learner to the teacher is different, and because adults have more extensive: experience and a different orientation to learning. The adult learner is often insecure and fearful of failure. Therefore, the instructor should present opportunities for success and provide frequent reinforcement.

There are many ways in which individuals differ. These differences affect their aptitudes for learning, the methods or processes by which they learn, and their achievements. When instructing adults, always keep the individual differences and learning styles in mind to ensure you reach each learner Motivation is one of the most important determinants of learning. Some students are motivated by outside rewards or social approval. The adult learner tends to be motivated by the desire to perform on the job. The instructor can motivate the adult student, therefore, by emphasizing the relevance of what is learned to the student's job functions. The instructor's own enthusiasm and personal concern are also important motivational techniques.

Keywords: adult learners, experience, individual differences, learning styles, motivation

الملخص:

شرح هذا التقرير الخصائص العديدة للطلاب البالغين وعملية تعليمهم. تختلف عملية تعليم البالغين عن تعليم الأطفال لأن العلاقة بين الطالب والمعلم مختلفة ولأن لدى البالغين خبرة أوسع وتوجه مختلف بالنسبة للتعليم. يكون لدى الطالب البالغ على الأغلب شعور بعدم الأمن والخوف من الفشل لذلك يجب على المعلم تقديم فرص للنجاح وتكرار تقديم الدعم . هناك طرق عديدة من حيث اختلاف الأفراد. تؤثر هذه الفروقات على قابلية التعلم لديهم وعلى الطرق أو العمليات التي يتعلمون من خلالها وعلى إنجازاتهم. وعند تعليم البالغين، يجب أن تتذكر على الدوام الفروقات الفردية وأساليب التعليم لكي تتأكد من وصول المعلومات إلى كل طالب. يعتبر التحفيز أحد أهم المسائل المؤثرة في عملية التعليم. يتم تحفيز بعض الطلاب عن طريق مكافآت أو ثناء اجتماعي. ويميل الطالب البالغ إلى التحفيز عن طريق الرغبة في الأداء خلال الوظيفة. لذلك يمكن للمعلم أن يحفز الطالب البالغ بالتأكيد على ارتباط ما يتعلمه الطالب بمهام وظيفته. كما يعتبر حماس المعلم واهتمامه الشخصي تقنيات تحفيزية هامة.

الكلمات المفتاحية: المتعلمين الكبار ، الخبرة ، الاختلافات الفردية ، أساليب التعلم ، التحفيز

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INTRODUCTION

The most familiar model of the teacher-learner relationship is that of an adult passing knowledge to a child. The relationship of the teacher (the one who knows) to the learner (the one who desires to know) is usually closely linked in our minds to the relationship of the adult to the child. Therefore, many people associate this relationship with one of dependence. Pedagogy is a term derived from the Greek words *paed* (meaning child) and *agogus* (meaning leader). In the field of education, pedagogy has come to mean the art and science of teaching children. The pedagogical method of teaching has roots that may be traced from Greek times through the monastic tradition of the Middle Ages to the first universities established in Bologna and Paris in the 12th century, and thence to our modern educational system. Teachers in the early part of this century realized the limitations of the pedagogical approach when the students were adults. During the period 1929-1948, the *Journal of Adult Education* carried articles by teachers emphasizing differences between the methods appropriate for teaching adults from those used in teaching children. In 1950 Malcolm S. Knowles published a book called *Adult Education*, in which he listed a number of principles that applied to the teaching of adults. The term "andragogy" was introduced to mark the difference between teaching adults and teaching children. The term is derived from the Greek word *andros* (with the stem *andr-*) meaning "man, not boy", or adult. So andragogy is literally "the art and science of helping adults learn."

1.1 ADULT LEARNING CHARACTERISTICS

In his more recent book, *The Modern Practice of Adult Education: From Pedagogy to Andragogy*, Knowles compares the two models. The comparison is based on four main characteristics of the adult learner and his or her learning process. These are:

1. The learner's relationship to the instructor
2. The role of experience in learning new material
3. Readiness to learn
4. Orientation to learning

1.2 LEARNER/TEACHER RELATIONSHIP

The concept of the learner in relationship to the instructor in the pedagogic model is that of a student who is dependent on the teacher. The teacher is expected to decide what, when, how, and if the material is learned. Adults, in general, are not so dependent. They are used to being self-directing in everyday affairs and may be expected to assume a greater measure of responsibility for their own learning. The level of dependence of the adult learner will, however, vary based on age, experience, and objectives. The instructor should provide students with tools that enable them to take responsibility for their own learning. For example, the instructor may encourage students to develop their own structures for encoding newly learned material. The instructor should also keep them informed of the criteria by which their performance will be judged. Informing students of the objectives of instruction may do this [1].

Many adults enter a training situation convinced that their role as learners should be a passive one. Yet they may also feel that such a role is in conflict with their station as responsible adults. The instructor should try to counter this impression by his or her attitude to the students by encouraging active student participation in class and in the evaluation of their own performance. This will help students to value training as an adult activity.

1.3 EXPERIENCE

Experience is another factor that distinguishes the adult learner from the child. The typical student in school or college has a very limited range of experiences on which to draw. This student must accept the experiences of parents or teachers or be given the opportunity for new experiences of his or her own. It is often necessary in classroom presentations to re-create or simulate events to provide a base of experiences on which to build an understanding of concepts and principles [2].

An adult has been in the real world and has a reservoir of personal experience. This is brought to the class and can be drawn on by the instructor and other students. Classroom methods that may be used with adult learners to tap this pool of experience include discussion groups, projects, and problem-solving sessions. By using the experience of students, the instructor may also enhance the adult's sense of responsibility for his or her own learning.

1.4 READINESS TO LEARN

Adults also differ from children in their readiness to learn. With children, readiness to learn is, in part, a matter of developmental age. The material that children are ready to learn depends on the maturity of their reasoning processes and on their interests. Adults can be assumed to have reached a certain maturity in their reasoning ability, but their interests and motivation may vary depending on their age and the stage at which they are in their careers. In general, the young adult is keen to become technically competent on the job. At a later age, adults have greater interest in supervisory types of tasks. They may also have a greater fear of failure in mastering new technical skills.

1.5 ORIENTATION TO LEARNING

Another area of difference between adults and children is in their orientation to learning. Children learn, in part, because it is expected of them by the adult world. They do not expect to apply their learning immediately. Often they have to place faith in their teachers. Traditional school curricula capitalize on this in their subject-centered approach to the organization of the content of instruction [3].

Adults, on the other hand, usually desire to see the immediate relevance of what they are learning. The adult views education and training as a means of increasing competency and job skills. The goal of the adult student is to be able to use the knowledge, skill, or attitude learned today in everyday operations tomorrow. Adults are ready to learn if they experience a need to learn something in relation to their daily activities. What is learned should have some relationship to their real-life tasks or problems. It is important, then, that the instructor provides conditions, furnish tools, and present procedures which help the students discover their "need to know." This is an important factor in establishing of expectancy at the start of the learning process. This inclination of adults also leads to the typical preference of the adult learner for problem-centered or performance-oriented curricula. Hence, industrial training is normally centered around skill development and is performance oriented.

CHARACTERISTICS OF ADULT LEARNERS

There are different ways to define an adult. For present purposes, we are concerned with any employee who may take part in a training program. We are, therefore, concerned with high school graduates, probably nineteen years old or older. Because of changing job functions and the need for continued updating and re-qualification, employees may be sent for training at any time in their careers [4].

Although all the students are adults, there will be a wide range in their degree of maturity and corresponding variation in their approaches to learning. There are, however, certain characteristics common to the mature learner of which you should know about. These are:

- Experience
- Self-directing, autonomous
- Task-oriented
- Easily discouraged
- Anxious, cautious in new situations
- Lack of confidence in ability to learn
- Resistant to change
- Expectation of good instruction
- Lack of recent study experience

The previous section discussed some of the characteristics that distinguish adult learners from children. Adults like to be self-directing. They seek an immediate application for what they learn and they possess a reservoir of experiences that can assist the learning process or, in some cases, interfere with it. This section develops a concept of the adult learner from which other characteristics of importance in the instructional situation may be derived. The adult as a mature person has achieved a certain integration of the personality. Most adults have a sense of their own identity based on what they have achieved and experienced. They have mapped their paths in life and established value

systems that are used either implicitly or explicitly to guide decisions and actions. The achievements and experiences of the adult give a self-concept that is a source of confidence in handling familiar situations. This self-concept is essential to self-esteem. Typically, the adult will resent or reject anything that undermines the confidence derived from his or her achievements. Further, the adult who is faced with new situations unsupported by a reservoir of experience may feel anxiety and a considerable lack of confidence. Most adults are no longer prepared to experiment and risk failure as they were when they were children or young people. Failure is deeply threatening to the ego; most people seek an assurance of success.

Instructors should be aware of the anxieties of adult learners and avoid behavior that may be threatening or discouraging. The instructor should try to reduce the risk of failure in the learning situation and try to build the students' confidence in their ability to master the training objectives. Show respect for the achievements of the students and draw on their work experience frequently. When a student is having genuine difficulties in completing a training program, the instructor should provide whatever extra help may be needed, making sure to boost the student's confidence in other areas of achievement. Mature adults are self-directing and capable of accepting responsibility for their own actions. Adults set standards by which they evaluate their performance; they do not depend on external rules in the same way as children do. The instructor should create a situation whereby the students can indeed regulate their own learning. Communication of outcomes of instruction in the form of training objectives clearly contributes to such a result [5].

Mature people have learned to accept and live with their own limitations and imperfections and are, in general, more tolerant than many younger people of the occasional error that an instructor may make. Adults are usually able to see beyond the error to the underlying intention and quality of instruction. However, they will not be tolerant of the instructor who does not exercise responsibility as an adult, who comes to class unprepared, or who simply does not know his job. Students who are taken off the job and assigned to a training program to improve job performance expect to receive good instruction.

The question of an adult's ability to learn new concepts and skills has often been raised. The rapid change in job requirements and consequent need for job retraining of the adult worker in today's economy have led to a re-evaluation of former assumptions [6].

There is a wealth of evidence that older people can be trained and retrained. Their success depends on their motivation, good lesson preparation and presentation, and classroom interaction. With good instruction, the older student is as successful as the younger student. Table 2-1 summarizes major characteristics that are common to the adult learner and instructional techniques to address those characteristics.

Table 2-1: Instructional Techniques that Facilitate Adult Learning

TYPICAL CHARACTERISTICS OF ADULT LEARNERS	INSTRUCTOR'S RESPONSE
Possess Reservoirs of Experience	Encourage discussion and student contributions
Self-Directing, Autonomous	Allow students to participate in setting pace of instruction or evaluating own performance Share goals and objectives with students
Task-Oriented	Emphasize relevance of content to job; establish the need to know
Easily Discouraged, Fearful of Failure	Foster sense of achievement; discourage excessive competition
Anxious, Cautious in New Situations	Provide frequent reinforcement
Lack Confidence in Ability to Learn	Provide emotional support and encouragement Provide opportunity for early success Provide for overlearning; give plenty of practice Minimize distractions
Resistant to Change or Innovation	Stress "need to know" for any new material
Self-Esteem Based on Experience and Past Achievement	Respect student's age and experience
Expect Good Instruction	Come to class well-prepared
Lack Recent Study Experience	Be patient as students establish a learning pattern

1.6 THE LEARNING PROCESS IN ADULTS

This section returns about Gagné and Briggs' information processing model of the learning process to that model to see how each step in the process may be affected by the special characteristics of the adult learner [7]. The seven steps in the model and the special requirements of adults for each is shown in Table 2-2.

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Table 2-3: The Learning Process in Adults and Implications for Instruction

STEP IN THE LEARNING PROCESS	SPECIAL REQUIREMENTS OF ADULTS
Expectancy	Clearly state instructional objectives
Perception	Establish relevance of new learning to job tasks
	Allow for influence of past experience on perception of stimuli
Encoding	Allow for influence of existing cognitive structure on organization of new learning
Retrieval	Use range of cues to assist recall of stored knowledge
Performance	Require simple responses that will reinforce students confidence
Feedback	Allow students to judge adequacy of their own performance
Transfer	Show application of skill or concept in context in which it will be needed.

Expectancy

The adult learner's state of expectancy in relation to the learning of a given concept or skill will depend in part on perceived relevance to the job. Establishing the direct, practical importance of a given topic should therefore characterize adult instruction. The student's expectancy can be enhanced by clear communication of the learning objectives or criteria. This reinforces each individual's sense of responsibility for learning and provides a way to pace that learning.

Perception

The perception of a stimulus depends on the way in which the stimulus is presented and on the internal conditions in the learners. The previous experience of the adult learner will affect the perception of any stimulus. Because different students have had different experiences, they may be expected to respond differently to the same stimulus.

Encoding

In a similar way, the cognitive structure that exists in memory will vary from one adult student to another based on his or her earlier learning and experiences. The process of encoding new material depends on existing cognitive structures. The instructor may need to approach the same topic from different points of view in order to facilitate encoding by all students in a group.

Retrieval

The encoding process may involve retrieval of stored material so that new concepts can be related to existing ones. Retrieval from memory is also a necessary preliminary to performance. Because of different previous training experiences, the cues used to retrieve any given concept may vary substantially from one individual to another. The instructor may need to use a variety of cues in order to retrieve a given concept of skills.

Performance

The instructor may take account of the anxieties of adult students by requiring responses that are not overly challenging. The instructor's demands may increase as students acquire greater confidence.

Feedback

In providing feedback, the instructor should respect the adult student's sense of responsibility. Confronted with the instructor's response and the criterion level of performance, the student should be able to evaluate personal performance and, if necessary, correct it on subsequent occasions. The instructor should assist the student in the process, if necessary, so that the need for self-direction in training is satisfied.

Transfer

Transfer of learning may be promoted by applying the content of learning in a range of situations. The immediacy of application is very important to the adult learner. Therefore, in teaching adults, the instructor should include job-related applications of what has been learned. Each of the steps in the information-processing model of learning may take place in a slightly different way in the adult learner.

INDIVIDUAL DIFFERENCES

Learning is a process that is internal to the student. External conditions (including all the instructor's methods and techniques) can affect the learning process but they cannot guarantee its results. The internal conditions in the learner must also be right. The same set of external conditions may have different effects on different learners. For learning to take place, the external conditions must be adjusted to the internal conditions of the individual learners. Since individuals differ, these conditions may also differ. It is important for the instructor to be aware of these differences and the ways in which they may affect learning [9].

In the previous section, certain characteristics common to adult students were discussed. The variability that exists in any adult group was also emphasized. In this section, some of the differences among adults and the effects they may have on learning are discussed. However, it should be recognized that it is difficult to determine how and to what degree students differ. It is even more difficult to determine exactly how these differences affect their learning.

The term individual differences refer to the way students differ. The concern here is with differences that are great enough to affect students' performance on a learning task. By the time they reach adulthood, human beings have had many experiences that cause them to have different interests, knowledge, aptitudes, skills, attitudes, and motivations.

As a result of individual differences, students differ both in what they learn and in the levels of competence they can reach in a given period of time. Students also differ in the way in which they learn. As far as possible, instruction should be geared to each individual's capacity to learn. The instructor must listen to and try to understand each student. Some students will need greater guidance, encouragement, extra instruction, or more challenging assignments. To be truly effective, instructors must be responsive to individual differences [10]. Many differences in performance tend to disappear if students can learn at their own rates and in their own ways. This is especially true for older students.

It should be obvious that most organizations do not have enough training resources to present instruction exactly suited to the learning needs of each individual student.

Industrial training is usually geared to group training. But when possible, depending on the task to be learned and on available facilities and equipment, the instructor should take account of individual needs.

1.8 THE IMPORTANCE OF INDIVIDUAL DIFFERENCES

Learner characteristics may be grouped under three headings: physical, intellectual, and personal.

Physical Characteristics

Some physical characteristics may affect a learner's readiness to learn a particular task. For example, a student's height or muscular strength may affect his or her ability to perform some physical operation. Physical condition refers to the physical well-being of the student. Sickness or lack of sleep can affect student learning. The individual who does not eat correctly can be a problem. The typical case is the student who has only a cup of coffee for breakfast; about mid-morning he or she feels a hunger drive that detracts from the ability to learn [11].

Eyesight and hearing may also affect learning. Communication is a two-way process; there must be both a sender and receiver. If the receiver is malfunctioning, communication will suffer and learning will be minimized. Adults learn best when maximum use is made of different senses. This is one reason why audiovisual training aids are commonly used in the classroom. Most physical characteristics have little bearing on the ability of the learner to learn. However, the instructor should be aware that some physical differences do make a difference and should make adjustments when required. For example, a learner with impaired vision may need to sit close to the chalkboard [12].

Intellectual Characteristics

Intellectual characteristics are clearly important to learning, but careful distinctions should be made. In particular, a distinction should be made between aptitude and achievement.

- Aptitude refers to a student's potential to achieve in a given area. This potential, or built-in characteristic, can be developed through training and experience. Aptitude tests

attempt to predict or measure what the student will be able to do after appropriate educational experiences.

- Achievement refers to a student's actual level of performance as contrasted to ability or potential. It refers to what a student can do after education training. Intellectual characteristics may be divided into two groups: cognitive and psychomotor. These groups are shown in Table 3-1.

Table 3-1: Intellectual Characteristics

COGNITIVE CHARACTERISTICS	PSYCHOMOTOR CHARACTERISTICS
Verbal Ability	Mechanical Ability
Numerical Ability	Dexterity
Reasoning	Coordination
Memory	Reaction
Creativity	Spatial Ability

Cognitive Abilities

Cognitive abilities involve the use of the mind. They are sometimes grouped together under the general heading of intelligence. Describing the cognitive abilities shown in Table 3-1.

- Verbal ability refers to fluency with words, understanding of words, and the ability to speak and write. It concerns the ability to express one's self orally or in writing and the use of proper pronunciation and enunciation.
- Numerical ability concerns facility in performing mathematical operations and in solving problems using formulae and accepted constants.
- Reasoning refers to the ability to define a problem, develop a plan of action, solve the problem, and check the results.
- Memory involves the retention of information and the ability to recall stored information when necessary.
- Creativity involves showing flexibility and originality in solving problems.

Psychomotor Abilities

Psychomotor abilities involve coordination of physical activities. They depend on a combination of physical characteristics and intellectual characteristics.

- Mechanical ability involves skill in working with mechanical things. Most people take their cars to mechanics for a tune-up rather than doing it themselves. They recognize that a mechanic is more skilled at mechanical tasks associated with a car. However, one of these people may have skill in troubleshooting a computer, which the auto mechanic does not possess [13].
- Dexterity refers to the ability to move our fingers, hands, arms, and legs; some psychologists include the ability of the eyes to observe.
- Coordination concerns the ability to observe a situation, grasp the situation, and manipulate items smoothly and safely.
- Reaction is the ability to respond quickly to a change in a given situation.
- Spatial ability involves dealing with two or three-dimensional relationships. There are many students who see a cross-sectional view of a pump and cannot visualize the real article.

As skill develops, so do the abilities needed to solve the problems presented. These abilities will increase in different degrees in different fields.

1.9 PERSONAL CHARACTERISTICS

Students' personal characteristics and circumstances may affect their ability to learn. Interests, emotional state, motivation, interpersonal skills, and experiences are discussed under this heading.

Interests

Interests refer to such things as sports, hobbies, and group activities. A student who is a ham radio operator will probably give more attention to instruction that involves electronics than will a mechanic who does not have such a hobby and does not need the knowledge to perform on the job. If students are placed in training or jobs that involve their interests, they may enjoy the work more and perform better than if they have no interest in the subject. Interest may be fostered if the instructor informs the student that the information being presented will aid them in their jobs.

Emotional State

A student's emotional state is an important consideration. Family problems, financial problems, even car problems may cause distractions that interfere with the learning process. These are potential sources of stress that may affect ability to learn. Student's attitudes to the instructor and general satisfaction with the training program may also affect their learning.

Motivation

Motivation of the individual student includes fostering an attitude of wanting to learn. The student must possess the proper attitude and drive to achieve the objectives of the course.

Interpersonal Skills

Interpersonal skills involve a number of factors that determine how people relate to each other and who an individual finds socially attractive. The instructor who presents a class in a professional manner, displays knowledge of the instructional strategy, and indicates a high degree of expertise to the students, will gain the respect of students. The way in which a student relates to the instructor may affect the quality of learning from that instructor [14].

Students tend to form groups or cliques. In a mixed class comprised of many engineering disciplines, for example, the mechanics may tend to sit together, as will the electricians, electronics technicians, and other groups. These people have something in common. Students desire someone with whom to discuss the implications of the material presented for their own job tasks.

Experience

Experience is an important variable in the learning situation. New experiences are interpreted on the basis of past experience. The quality and amount of interaction between students and their environments influence the quality of learning.

An instructor can explain many new things by using illustrations drawn from the experiences of the students and relating these experiences to the new material. Resistance to the flow of electrical current through various gage wires can be likened to the resistance to the flow of water through different diameters of pipes. Describing carburetion as "the atomization of combustible material to facilitate combustion of ingredients" may be entirely correct, but few students will derive the full meaning from

this explanation. Instructors must select and present illustrations carefully so that all students understand the desired meaning.

Previous training also forms part of a student's experience. The ability to learn new material depends on the acquisition of prerequisite concepts and skills. Instructors can apply this principle in the introduction to a lesson by reviewing previous instruction to ensure that prerequisites are met. Previous training may also interfere with learning as when students compare earlier training with that now being presented [15].

Personal circumstances also affect student's ability to learn. These include life events, such as marriage or the birth of a child. They also include disrupting events such as an accident or a burglary. The instructor should get to know the students and become aware of such circumstances that may affect their performance.

LEARNING STYLE

It has been established that different people learn in different ways or possess different styles. Learning style refers to the methods by which different individuals process information in order to learn. The concept of learning style is different from those of either aptitude or achievement. It is not always easy to determine how any given individual learns or what an instructor can do to facilitate his or her particular style of learning. However, it is important for the instructor to realize that differences exist and to vary their methods of instruction to provide for the many different learning styles represented in any given class. There are many ways in which learning styles may be categorized. In this section, some of the main variables associated with learning style are discussed briefly [16].

1.10 PERCEPTUAL PREFERENCES

An early step in the Gagné-Briggs model of learning is that of selective perception. There are different modes of perception, of which the most important are:

1. Visual or Spatial: Seeing.
2. Auditory or Verbal: Hearing.
3. Kinesthetic or Psychomotor: Doing or Feeling.

Some people have a preference for one mode of perception. In other words, they learn better if the content is presented in one mode rather than another or if there is an emphasis on one mode rather than the others.

For example, some students learn best if they listen attentively to what the instructor says without taking notes. Others prefer the instructor to write the principal points on the chalkboard and to write their own notes for future reference. Some students can learn the main features of a bearing or other piece of equipment through studying pictures or by examining the real object. For others, handling and using the equipment is essential to learning. To meet the learning needs of a class of students, the instructor should use all three perceptual modes [17].

1.11 FIELD INDEPENDENCE VERSUS FIELD DEPENDENCE

This difference in learning styles is related to the way different students focus on the stimulus object or what is presented by the instructor. Field dependent students are influenced by everything surrounding the object, that is, by the total field or environment. Field-independent students are better able to abstract particular features from the background field. This difference could be important. For example, in studying the diagram for a plant system, field dependent students would have difficulty in focusing on one particular component or flow path. They would be influenced by the myriad details surrounding them. Field-independent students would be better able to focus their attention.

In dealing with a class of students with different characteristics, the instructor should anticipate the difficulties of the field-dependent learner. All irrelevant details should be removed from diagrams of transparencies in the first instance to assist students in focusing on essentials. The details can be added later. A related trait is the tendency of individuals to be distracted in the presence of conflicting stimuli. Some learners are relatively unaffected by outside disturbances whereas others are easily distracted. Reduce outside distractions to a minimum in a classroom situation. Keep any training aids that are not in use out of sight and minimize the noise level.

1.12 CONCEPT FORMATION STRATEGIES: CONCRETE AND ABSTRACT THINKERS

Learners differ in the ways in which they form concepts. Some are capable of abstract thinking, whereas others require concrete images to learn. In learning technical or scientific subjects, there are those who prefer abstract mathematical explanations, others who can best handle mechanical or physical explanations, and still others who prefer explanations to be based on more familiar analogies.

In discussing the fission process, for example, there are many different approaches that can be used. Some students may respond best to the concrete physical image of the liquid drop model. For other students, a physical explanation of fission based on "competition" between the Coulombic force and the nuclear force may be more convincing. Other students may find an abstract discussion based on the binding energy curve and energy

equations to be the most coherent and convincing. In the long run, students may be able to handle all of these approaches, but many will retain a preference for one or the other.

1.13 GLOBAL VERSUS ANALYTICAL STYLES

Some students are more analytic than others; some are more capable of global thinking and intuition. When confronted with a problem, some individuals tend to analyse the problem into its components, carefully select a method of approach, and work systematically toward a solution. Such people are sometimes said to be left-brain dominated since it is the left hemisphere of the brain that normally controls these systematic, analytic modes of thinking. In studying scientific and technical subjects and performing routine operations, this type of approach is generally required. Other learners, when confronted with a problem, tend to look at the problem as a whole. Their first tendency is to jump to a conclusion, to hypothesize, or to follow their hunches. They look at the "big picture" before the details. Technical training does not usually involve this type of thinking. However, imaginative and intuitive qualities may, in fact, be extremely important on the job when a response is required quickly in an emergency and there is little time to work out the details. In scientific research, the intuitive leap is often as important as attention to detail.

In the classroom, the instructor can respect and foster both types of thinking by using different strategies in presenting information and solving problems. In some instances, it may be preferable to start with a "big picture" approach to a system, component, or physical process. In other cases, the instructor may use a more detailed analytic approach.

1.14 STRUCTURED VERSUS UNSTRUCTURED LEARNING

Learners differ in the extent to which they depend on the instructor to provide structure. Some learners need a very structured environment with carefully organized content, explicit instructions, and well-defined assignments. Such a learner relies heavily on the instructor to tell him or her what to do and when. Other learners are much more capable of structuring their own learning. They diagnose their own difficulties and seek help when needed. These learners seek guidance from the instructor, but not direction. The earlier discussion of the adult learner suggested that the mature adult tends to require less

structure than his younger colleague does. The instructor should foster this tendency but should be aware that there may be some students in the class who require structured support and be ready to provide it. Yet the instructor should be wary of frustrating the more mature learner through using a heavily instructor-centered approach to classroom instruction.

Motivation initiates, drives and directs behaviour. Motivating students to learn is a major concern in any training situation. Usually it is the instructor who has the prime responsibility for stimulating motivation in the students. Each instructor must present instruction that is relevant and meaningful. The instructor must harness the motivation of the student to the learning task at hand. But, if the student is not motivated to learn, or does not desire to learn, it is highly unlikely that the student will ever attain mastery of the subject or task despite the instructor's best efforts [18].

1.15 EFFECTS OF MOTIVATION

Motivation affects students in a number of ways. There are four effects with which instructors should be familiar:

1. Motivation energizes students. If the instructor can get the students to participate in the presentation, they become involved and concerned. Participation sustains their effort and keeps them striving for achievement; it fosters persistence.
2. Motivation, is goal-directed. If presented with an attainable terminal learning objective, (i.e., a goal), the student will strive to complete the task and to achieve the desired objective.
3. Motivation is selective. It tends to determine priorities. The student wants to know how the information will be of benefit in the performance of his or her job.
4. Motivation channels student behaviour. It causes the student to determine the organization of the task so that a plan of action can be formulated. If the student is motivated there will be more vigor and effort put into the learning situation.

Students must be informed of the objectives of the instruction and the nature of the achievement expected of them at the completion of the instruction. The primary effect of providing students with an expectancy of the learning outcome (objective) is to enable them to match their own performance with the level of performance that the instructor has specified, and, thus, to direct their own behaviour to the required goal [19].

As motivational intensity increases, there tends to be a corresponding increase in anxiety and tension. These two feelings can have a detrimental effect on learning. It has been proven that there is an optimum level of anxiety that is beneficial to the learning process. Neither individuals who are highly anxious nor those who are apathetic (low anxiety) perform as well as those in the moderate range. Performance is usually more efficient when there is a median level of anxiety or tension. The instructor should keep in mind that older students tend to be more anxious than younger students are.

1.16 TYPES OF MOTIVATION

There are different types of motivation that predominate at different stages of life depending on the needs of the individual. As individuals mature, their needs tend to change; the sources of motivation change accordingly. Psychological needs such as those for food and shelter are an important source of motivation, but these do not usually affect motivation to learn directly. An important source of motivation for children at school is the need for social approval. Children seek the recognition of classmates, teachers, and parents. They act so as to avoid disapproval as much as possible. They seek to establish their position among their peers. Motivation, in this case, is based upon a need for approval. Continued motivation depends on obtaining continued reinforcement. The motivation is said to be extrinsic to the task since it is not derived from the task itself but from the reward or reinforcement that follows [20].

The need for self-esteem is a higher-order need that usually develops later. This is the need the individuals to respect their own personal value and to feel that they are worthy members of a group.

Consider the case of a young woman who joins a volunteer rescue squad. What is the incentive that compels her to donate many hours to first aid training, emergency medical technician training, or cardiac pulmonary resuscitation training? She has to sacrifice most of her leisure hours to spend time in training and answering emergency calls. The answer is a desire to serve. Her rewards consist of a feeling of satisfaction that she is being useful to society. There are no monetary rewards. The rewards that motivate the young woman have been internalized, and are based on the increased value that she attaches to herself:

her self-esteem. The social approval that the work attracts is probably secondary to her own feelings of self-satisfaction.

Later in life, motivation may be based on the desire to master a particular skill. Motivation involves task mastery and achievement. There is desire to learn in order to function effectively. During this period in life, the goal is to complete tasks accurately and completely. This drive is sometimes called achievement motivation. Motivation is intrinsic to the task, because mastery of the task itself brings satisfaction. The task is perceived as being meaningful, important, and enjoyable in and of itself.

At other times, a desire to proceed beyond mere task mastery may be a motivating force, based on a person's desire for greater improvement and development of his or her abilities. This drive towards self-actualization is often considered the highest form of motivation.

Consider the young person working in a power plant whose position requires knowledge of mathematics up to and including trigonometry. After completing the scheduled course presented by the utility, he or she enrolls in a college algebra or calculus course at a local community college. This individual desires to advance beyond the required level. This requires a clear definition of individual goals and a desire for self-improvement. It is a fact of human nature that human beings have a need to explore and master their environment, and to respond to life's challenges just because they are there.

1.17 TECHNIQUES TO STIMULATE MOTIVATION

Following are some of the techniques that instructors can use to motivate students.

Show a Need

It cannot be assumed that students will recognize the importance of learning the lessons presented in a training program. Many important things may seem unrelated to the work of the student when he or she first hears of them. Instruction must include valid reasons for learning and an explanation of how the things taught will be used. The instructor should show how the material to be learned could be of personal benefit. The "reason for study" is included in the introduction of a lesson for this reason.

Develop an Intent to Learn

Before instruction is presented, the student must be made to realize that he or she is responsible for learning. It is not enough that the students are physically present for training; they must be mentally prepared to learn. The instructor must check class progress frequently and insist that each person apply himself or herself. A student learns more when made to feel responsible for learning and given regular feedback about progress.

Maintain Interest

Interest is essential if attention is to be gained and held. The use of personal persuasion and enthusiasm, examples, and illustrations will keep interest high. Varying the medium of instruction is also a useful means of retaining the interest and attention of students. The more interesting the material can be made for the students, the more readily they will learn it. The instructor, however, must keep in mind that, his or her responsibility is to teach, not to entertain.

Encourage Early Success

Early success motivates students. Success tends to drive an individual to further effort and additional successes. For most people, achievement brings a certain amount of pleasure and satisfaction, and stimulation toward greater activity. During the early stages of a training program, instructors should have students work at an activity that they can complete successfully, since success breeds success. On the other hand, poor training methods and lack of success can affect motivation in a negative way.

Give Recognition and Credit

Recognition and credit respond to the individual's need for social approval. They may also contribute to the development of self-esteem. Instructors should try to appeal to students' pride and should avoid doing anything that will make a person lose self-esteem. Students should be given every possible opportunity to demonstrate what they know. Being courteous to the members of the class is another way the instructor can satisfy the individual's desire to be recognized because it indicates that he or she respects the dignity of each student. Some of the things to avoid are embarrassing a person who is slow in learning, criticizing a person unnecessarily, or ridiculing a person's race, religion, or ability.

Avoid Emotional Responses

Avoid feelings and emotional responses that interfere with efficient learning. Students who are angry, resentful, embarrassed, frightened, or otherwise emotionally upset think about the source of their disturbances rather than the subject being taught.

Use Praise and Avoid Blame

Praise, as a reward for work well done, can be a powerful incentive to further effort. On the other hand, the use of blame or other form of punishment is very difficult to handle effectively and should be avoided. A student can resent criticism to the extent that it harms his or her learning. If a student's efforts are not satisfactory and correction is needed, it should be offered in a constructive way. Instructors should mention the good points of the student's work and not dwell entirely on the mistakes. This can be done by starting with a favourable comment and leading into suggestions for improvement. If feelings of accomplishment and personal growth result from the act of learning, the student will be motivated to further learning efforts.

Be Professional

Instructors, in their own conduct and in the importance that they attach to doing a good job, act as role models for students. Their motivation to instruct will lead to student's motivation to learn. On the other hand, dissatisfaction with the instructor's style of instructing, poor training facilities, priorities that place the security or status of the student in jeopardy, inefficient training administration, and poor interpersonal relationships in the instructional situation can all lead to an undesirable increase in anxiety and a loss of motivation.

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