

Educational Ministry and Learning Styles

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Having been an educator for nine years, there is much that I still don't know about students and the ways that they learn. However, I do believe that having a Minister of Education who has a background in education can be extremely advantageous in many respects. Such a person is willing to try a variety of methods and styles in order to see that those youth in the ministry of the local church continue to remain in the church and become robust disciples of Jesus Christ.

Our church ministry dropout rate, once a student graduates from high school, is estimated to be as high as 80-90%. This is reprehensible at best, and borders on being almost unforgivable at its worst. This clearly indicates to me is that our youth aren't being taught the fundamentals of the faith, they are being deceived into believing lies from the evil one, and they really don't believe that the church is relevant to their everyday lives. Bottom line: this needs to stop immediately. It is possible to reverse the tide and onslaught that our youth are facing by employing a variety of teaching styles and methods that are relevant, cutting-edge, and innovative to where our students are today. I'm not saying is that we need to utilize flashy methods, catchy slogans, and resort to busting the budget in order to catch their interest. The world seems to have unlimited resources to throw at our youth, while the church will never have those kinds of finances.

I am saying is that it is possible to peak and maintain the interest of our youth in the things of God by creating a hunger and thirst for those things that truly matter long term. And eternity is long term because it lasts forever. What we want to do is to make a strong impact that our youth can carry with them as they become adults; it should be our desire that what they are taught will enable them to stand for the faith, do the work of the ministry, fulfill the Great Commission, and impact the world with a living, viable example of a thriving Christian. The world needs that right now, and there are crowns to be earned when we all stand before the Judgment Seat of Christ as Christians.

The school classroom and the church classroom, although different with respect to content, are very similar (in my opinion) with respect to methodology. Youth are being taught; however, there seems to be just one way that we teach in church. I think that much can be done to improve our proficiency in teaching techniques. That's where my background as an educator comes into play as a factor. I know that this is where God now wants me to use what I have learned in the school classroom for many years for the benefit of the church. I've known for over thirty years that God has wanted me to be in church ministry, but He has wanted me to learn about that fascinating creation called youth that makes up a great deal of a thriving, growing church. I know that He wants me to not only minister to them, but to their parents and the adult leaders as well.

Let's look at this intriguing area of teaching styles, methods, techniques, motivation, learning modes, and interests. Before we get into this area, I'd like to ask a question: in what way can I put these ideas to use in your church as your next Minister of Education? Just think about this for a moment: the possibilities are endless! Although these ideas are

primarily use within a school classroom setting, they are also easily adaptable to a Sunday School or youth ministry meeting too. Why? Because learning is going on there as well, just in a different setting.

Teaching Styles

- Direct Instruction
- Indirect Instruction
- Discussion
- Cooperative Learning
- Self-Directed Instruction

Direct Instruction

The traditional teacher-centered instruction technique is called direct instruction. The teacher provides the students with much of the information they need, often through lectures, explanations, examples, and problem solving. Most direct instruction techniques only allow for minimal student-teacher interaction, and need to be supplemented by review, practice, and group discussions.

The main strength of direct instruction is that it is efficient, especially in quickly providing information to the students. It is also an effective way to allow students to achieve mastery when learning fundamental facts, rules, formulas, or sequences.

However, direct instruction is not an effective way to teach higher-level thinking, analysis or evaluation. It cannot be used to teach material over a long period of time, or present additional details to students who have already mastered the basic concepts. When direct instruction repeats material that has already been covered, it becomes redundant and boring for the students. However, repetition helps students learn material thoroughly, so the review must become “creative redundancy”. Content needs to be repeated in novel ways to keep the students interested.

Indirect Instruction

The indirect approach to teaching presents students with instructional stimuli in the form of materials, objects, and events, and requires students to go beyond the basic information that they are given to make their own conclusions and generalizations. Indirect instruction allows teachers to engage their students in activities that require the students to learn independently.

Students take an active role in their learning by developing ideas, testing their own conclusions, and discussing their results. This allows students to independently discover patterns and relationships in their learning and knowledge. Students go beyond the basic problems presented to them, allowing them to develop advanced levels of thinking and analysis. Indirect instruction is most effective at teaching a process or method of learning, and allows for a dynamic teaching and learning environment.

Discussion

Discussion involves free, interactive dialogue between teachers and students. It is more than just a question-answer period, and requires the teacher to give control of the classroom to the students. The students guide the discussion, meaning that it may not always progress in the direction the teacher anticipated.

A successful discussion requires that all student responses and ideas be accepted and considered, even those that are immature or have not been thought out. Teachers and students need to be open-minded and willing to consider perspectives different from their own.

Cooperative Learning

Cooperative learning is a technique that encourages collaboration, competition, and independence. Teachers encourage independence among the students in terms of achieving their learning goals, and interdependence through interaction.

One strength of cooperative learning is its social nature. Students are encouraged to interact and share with one another, which helps reduce the students' desire to talk or gossip with one another about unrelated topics. With interaction constantly occurring, a cooperative learning classroom tends to be somewhat noisy, but classroom management is easier.

Cooperative learning helps students develop conceptual reasoning and problem-solving skills. It also helps create a warmer relationship among students and a positive attitude towards the subject matter.

Self-Directed Instruction

Students need to be encouraged to actively participate in their own learning process through self-directed instruction. Without taking a role in their own learning, students become too dependent on their teachers and fall behind in independent thought, reasoning, critical-thinking and problem-solving abilities.

Metacognitive strategies - mental processes students use to understand and remember information - are often used in self-directed instruction. Students often model their strategies after those of a teacher who taught by explaining the reasoning involved and then focused the class on applying that reasoning to a variety of problems.

Self-directed instruction teaches students to take learning into their own hands, apply their knowledge to real-world problems, monitor their own achievement, and go beyond the material that is presented to them. Predicting, questioning, summarizing, and clarifying are four important activities that shift the responsibility of the learning to the students.

Teaching Methods

- Rote Learning
- Guided Problem-Solving

- Diagnostic Teaching

Just like there are many ways people learn, there are many different teaching methods. When deciding which teaching method to use, the teacher needs to consider what learning goal the students are trying to achieve. Not all learning goals can be achieved using the same teaching method. The three most common teaching methods are rote learning, guided problem-solving, and diagnostic teaching.

Rote Learning

Rote learning is memorizing something by heart or exactly as it was presented to the student in the textbook or teacher's lecture. Common applications of rote learning are spelling lists, mathematical rules, historical dates, and chemical formulas. After the students have memorized the given material, they are tested by repeating the material exactly as it was originally given to them. Rote learning is well suited for foreign language vocabulary, history, and spelling tests.

Guided Problem-Solving

Guided problem-solving is the method used when teachers try to help students become skilled at solving problems. In the guided approach, the teacher first explains the general concept, and then how to attack that specific type of problem. The teacher demonstrates each step of the solution, and then gives the students similar problems to try on their own. This allows the students to apply the concepts they were initially taught to similar as well as slightly different problems. Guided problem-solving is well suited for the math and science areas.

Diagnostic Teaching

Diagnostic teaching involves first presenting the students with problems that they are to solve using any method they can. No lecture or explanation is given until after the students have been given adequate time to work on the problems. Once the problems have been solved, the teacher will ask the students to explain how they arrived at their answers. The teacher will then go through the steps required to solve the problem, showing the students which steps they did right and wrong, explaining how to correct any mistakes they may have made.

Teaching Techniques

- Lecture and Discussion Methods
- Games and Simulations
- Computer Assisted Instruction
- Visual and Observational Media
- Reading-Writing Media

Teaching techniques are the ways in which the information to be learned is presented. Teaching techniques vary in terms of the medium (textbook, video, computer, etc), structure of the program, how the teacher operates, and how progress is monitored and tested.

Several questions should be asked before selecting a teaching technique. Does the technique allow adjustment according to the needs of different students? Does it encourage the students to become actively involved with the learning? Does it adequately cover the material so that all the students learn it? Does it adequately monitor the students' progress? Does it permit extra assistance to students who require it? Does it allow an adequate amount of time to practice and integrate the skills?

The teaching resources best suited to the students, such as the latest technology, may not be available to the teacher. Teachers must find the best techniques to teach the students using the resources available to them.

Lecture and Discussion Methods

One of the most common teaching techniques is the lecture method. It is the most economical method of transmitting knowledge, but it does not necessarily hold the student's attention or permit active participation. However, lectures can be effective, if supported by texts and other references. About ninety percent of post-secondary instruction uses the lecture method, but it is significantly less common in primary and secondary schools. At these levels, discussion sessions are more effective in stimulating the students' interests and assessing their understanding of the material.

The discussion method is favored in secondary schools, particularly in the social sciences. Discussion not only helps teach material, but it also develops the thinking process, promotes a positive attitude towards learning, and develops interpersonal skills. Group discussions foster interaction between students whose skills, attitudes, and interests differ, and allow the students to use democratic leadership skills to lead the direction of their discussion and participation. In this manner, discussion sessions help students extend their knowledge through higher-level independent thought.

Games and Simulations

Because games and simulations are fun, teachers have sought to use them as an effective way to foster learning. Card and board games are popular to help teach basic skills, while simulations teach the principles of complex systems, such as economics, international relations, and power struggles. Simulations tend to focus on current social issues, or historical events. What makes simulations so effective is that they teach problem-solving and decision-making strategies in addition to the facts and principles that define the game.

Simulations are becoming increasingly popular for teaching new types of skills. Simulations can create conditions nearly identical to the actual situation. A common example of this type of simulation is a flight simulator, which introduces pilots to potential situations and problems.

Computer Assisted Instruction

In recent years, computer assisted instruction (CAI) has proved to be quite successful, whether inside the classroom or for independent learning. Various computer programs

help students learning writing, problem-solving, and those which are in the form of games help motivate the students while keeping them interested in what they are learning.

Teaching using a computer has many virtues: it is patient, positive, does not forget, and can keep track of each student's progress. However, the long-term benefits of computer-assisted instruction are still unclear. It is not yet known how many students actually learn skills beyond performing the game, or the degree to which teachers need to participate in the process to ensure that the students learn what was intended.

Visual and Observational Media

Many students, especially visual learners, benefit from materials such as pictures, diagrams, charts, graphs, cartoons, posters, slides, and videos. Demonstrations and experiments also help reinforce visual learning.

Generally, visual media is used to provide concrete examples in order to lead the students to the generalizations, abstract thinking, and explaining that constitutes learning. On its own, visual media can be a hindrance to learning; for examples, interesting pictures in a history textbook do not necessarily help the students' understanding of historical events. However, when combined with careful classroom explanation and discussion, visual aids can help students interpret, infer, and understand the concepts being presented to them.

Reading-Writing Media

Reading and writing form the basis of traditional education, requiring a sophisticated understanding of language. Textbooks are often essential in the classroom, providing extensive coverage of material at an appropriate level for the student. However, textbooks provide no feedback to or interaction with the student, and the teacher needs to fill this gap.

Programmed learning is a new form of reading and writing. Linear Programming - the most basic form of programmed learning - divides a subject into its components and arranges the parts into a sequential order. At each step in the reading, the student must respond and is immediately given feedback on his response. The program is structured so that most students' responses will be correct, encouraging them to continue. Another form of programmed learning is Branching Programming, which gives the student pieces of information and provides several possible answers to questions. The program progresses or detours the student according to his responses. This type of program reinforces the learning by backtracking over problem areas. These types of reading-writing media allow students to progress at their own rate and work independently; however, it can quickly become dull and tedious for the student.

Motivating Students

There is a distinctive relationship between a teacher's conduct and the students' learning ability. Teachers need to encourage and foster their students' success. Often teaching strategies alone are not enough to motivate students to succeed. Teachers need to encourage success by praising and encouraging students for high achievement, showing

students respect, holding high expectations for all students, avoiding negative comments and sarcasm, offering extra help whenever needed, and taking an interest in the students' lives. This informal motivation helps establish a warm and caring classroom environment in which the students feel as though they can succeed.

By knowing a student's outside motivation, interests, and strengths, the teacher can more effectively encourage and support the student's learning inside the classroom. Knowing this information about a student helps the teacher relate to the student, while creating a more favorable teacher-student relationship. The better a teacher knows a student, the easier it is to understand their difficulties, needs, and motivators. Often by participating with or seeing students in their extra-curricular activities, teachers come to learn about their different sides. Students appreciate this extra effort and interest, and teachers can use their new insights to help the student succeed.

Motivating students to learn and succeed often means directly involving them in the learning process. Students need to have input into the types of instructional material used, teaching methods, and scheduling. Active and participatory learning activities, such as games, simulations, media, computer-based learning, and group work, can also motivate students.

Teaching Objectives

The objectives of teaching extend far beyond the subject matter being taught. Essentially, teaching aims at developing well-integrated people who are capable of undertaking a responsible, independent, and active role in society. Teaching objectives extend from intellectual abilities and cognition (social insight) to psychomotor learning (learning practical skills) and affective learning (development of emotions, attitudes, morals, and values).

Cognitive development begins early, with the acquisition of basic language and math skills. Cognition continues to develop throughout a student's schooling, and begins to dominate education at the secondary level. Cognition allows us to generalize, abstract, infer, interpret, explain, and apply information. It makes us critical thinkers capable of making appropriate decisions and judgments, and makes us aware of different viewpoints.

Psychomotor learning encourages the development of physical skills and their appropriate and creative uses. Psychomotor development includes handwriting, art, and games at the elementary level, and practical science and vocational skills later on.

Although emotional learning occurs throughout our schooling, it is not always obvious. Teachers may require students to take emotions into account (such as sympathizing with characters in literature), or ask for emotional responses. This helps develop values and attitudes, especially during adolescence. When a student learns about a particular type of situation or problem, he will make appropriate emotional responses. By presenting students with different situations, a wider range of emotional responses can be elicited.

During early education, emotions can only be elicited from situations directly affecting the student. However, as the student matures, he becomes increasingly involved with general affairs and learns to associate emotions with circumstances that are removed from his personal life.

Learning Modalities

There are three basic modalities to process information to memory: visual (learning by seeing), auditory (learning by hearing), and kinesthetic (learning by doing). Most people have one predominant modality, but some have a balance between two or even all three. Many students are aware of their preference, which helps them approach their own learning more efficiently.

Personality Characteristics of the Learning Modalities

Visual	Auditory	Kinesthetic
Mind wanders during verbal activities Has trouble following or remembering verbal instructions Doodles	Is easily distracted Quickly loses interest in visual demonstrations	Taps pencil or foot while thinking, studying, or writing tests Enjoys doing experiments
Prefers to observe rather than actively participate in group activities and discussions	Enjoys listening activities Is active in group activities and discussions	Enjoys handling objects Uses excessive hand gestures and body language Makes physical contact with people when talking to them
Likes to read silently	Likes to be read to Prefers reading aloud to silent reading Listens to music while studying or doing homework	Tends not to enjoy reading Enjoys hands-on activities Enjoys problem-solving
Is neat and organized Pays attention to detail Has neat handwriting	Has sloppy handwriting	Is unorganized
Is a good speller		Is a poor speller
Easily memorizes by seeing pictures and diagrams May have a "photographic memory"	Memorizes lists and sequences easily Remembers faces	May have trouble memorizing lists, numbers, etc.
Is usually quiet, shy, or reserved	Is fairly outgoing	Is outgoing Easily expresses emotions

Depending on their preferred learning modality, different teaching techniques have different levels of effectiveness. Effective teaching requires a variety of teaching methods that cover all three learning modalities. No matter what their preference, students should have equal opportunities to learn in a way that is effective for them.

Effective Teaching Techniques for Each Learning Modality

Visual	Auditory	Kinesthetic
Guided Imagery	Auditory Tapes	Experiments/Labs
Demonstrations	Reading Aloud	Plays, Acting Scenes Out,
Copying Notes	Oral Instructions	Role Playing
Highlighting Key Ideas in	Lectures	Games
Notes/Textbooks	Repeating Ideas Orally	Problem-Solving
Flash Cards	Using Rhythmic Sounds	Field Trips
Color Coding	Poems, Rhymes, Word	Writing Notes
Diagrams, Photographs,	Association	Making Lists
Charts, Graphs, Maps	Group Discussions	Props, Physical Examples
Filmstrips, Movies, TV	Music, Lyrics	Associating Emotions with
Mind Maps, Acronyms	TV	Concepts

Conditions Required For Learning

- Motivation
- Interest
- Transfer of Training
- Environment

Motivation

Motivation is anything that affects the state of the nervous system to determine behavior. It is the driving force for the activation and persistence of behavior, and helps explain why some behavioral patterns occur more frequently or at certain times. Motivation generally relates to a psychological drive or need that pressures us into behaving accordingly. There may also be external stimuli or incentives that contribute to motivation by rewarding appropriate behavior.

There are two main aspects of motivated behavior: the provocation of behavior and the direction of behavior. Provocation of behavior includes anything that causes a behavioral reaction, resulting from internal or external stimuli. Direction of behavior is the response to whatever provokes a behavioral response. The response may be either instinctive or purposeful. For example, heat that causes pain is an external provocation of behavior, and pulling away from the heat is instinctive direction of behavior.

Motives themselves also direct behavior in that different motives cause us to act in different ways. There are three types of motives: homeostatic, nonhomeostatic, and learned motives. Homeostatic motives include things such as hunger, thirst, and

breathing. They work to keep the body in the state of homeostasis (internally balanced). Nonhomeostatic motives include required activities, such as seeking shelter, and curiosity. Learned motives include the desire for novelty, achievement, power, and approval. These motives develop through experience, and once developed, they continue to influence behavior throughout life. The three types of motives may also overlap. For example, the desire for new experiences or challenges may be homeostatic as well as learned. Since people differ as to the level they are affected by homeostatic mechanisms, some people are always looking for something new to try while others are content with the familiar.

Several general unifying theories have been present to explain motivation. Early theorists, including Clark Hull, proposed that motivation is fundamentally an attempt to reduce drives. Donald Hebb and Daniel Berlyne proposed a more flexible theory, which said that all motivational states are an attempt to maintain an optimal level of action. This theory took into account that a certain behavior is reduced when it is too high and will increase it when it too low, and that we purposely expose ourselves to exciting stimuli (such as skydiving, bungee jumping, or watching scary movies).

More recently, Richard Solomon developed the process theory. The process theory states that acquired motivations involve a primary motivational state that is either intensely positive or intensely negative, and a secondary state that is opposite to the primary state and outlasts it. With repeated exposure to the stimulus, the secondary state becomes stronger.

Research has also shown that approval and achievement are important factors. In social situations, people with a need for approval tend to agree with other people's suggestions and opinions even if they disagree with them. Achievement motivation is affected by the desire for personal reward or success. People with a high need for achievement tend to choose tasks that are intermediately difficult, for a moderate probability and higher degree of success. People with a low need for achievement tend to select either very easy or very hard tasks, since the completion or outcome of the task is not important. People with the need for high achievement attribute their success and failure to internal factors, whereas people with little need for achievement attribute success to external factors and failure to internal factors. This explains why people with a high need for achievement persist even in the face of difficulty and failure, while people with a low need for achievement give up relatively easily.

Interest

Interest is important to learning, since it facilitates thinking and attention. We cannot effectively think about a topic that we find boring and purposeless, nor can we learn something that seems tedious. Interest guarantees that we will focus on what we are supposed to be learning. We think and learn when we read the newspaper or a novel, watch television or a movie, or solve a problem - but only if we are interested in it.

When we are not interested in something, we tend to think of something else or “daydream”. These distractions shield us from boredom while allowing us to try to find

something else to think and learn about. Not understanding something also tends to lead us away from critical thought, and eventually destroys our interest in that topic.

Thinking and learning are inseparable because our brains strive to think all the time, meaning that learning occurs whenever there is meaningful thought. Only rote learning involves little thought, but it is also inefficient and uninteresting.

Interest does not guarantee that we will think efficiently, but it does ensure that we will put ourselves in situations where relevant thought occurs. When we find something interesting, we try to involve ourselves with that topic or activity. We will read books or watch movies about the topic, and talk to experts in the field. These activities help facilitate effective learning.

Transfer of Training

The recognition that new learning can profit from old learning because learning one thing helps in learning another is called transfer of training.

By the end of the nineteenth century, many educators believed that a student's learning ability could be strengthened. They believed that Latin strengthened the mind, and math strengthened reasoning ability. However, today this belief is rejected due to many studies that have shown that reasoning ability did not significantly differ between students who had studied math and those who had not. Furthermore, students who had learned similar processes did not show transfer of training from one task to another (for example, learning to add did not help the students learn multiplication).

Currently, the viewpoint regarding transfer of training is that both concrete and abstract knowledge can be transferred from one situation to another. Recent studies have shown that the most important factor in transfer of training is the quality of the person's organization of prior knowledge.

Transfer of training can be either positive or negative. If someone is trying to learn two tasks, after learning the first task, the second one may be easier or harder. If the second task is easier, then the previous learning was useful, and therefore positive transfer of training occurred. If it is more difficult, then the old learning was a hindrance and negative transfer of training occurred.

Whether a particular transfer of training is positive or negative depends on the relationship between the two (or more) tasks. Positive transfer of training occurs when the tasks have similar stimuli that elicit the same response. Negative transfer of training occurs when the tasks have similar stimuli, but elicit different responses, making the last task harder to learn.

New learning can profit from old learning because of three main factors:

1. Positive transfer of training.
2. General principles that are learned from one task and can be applied to another task.
3. Good study habits that are learned from one task which help us learn another task.

Environment

Research with laboratory animals has revealed that exposure to sensory-enriched environments can change the structure and chemistry of the brain. Rats raised in environments containing toys, stimulating objects, and other rats exhibited increased thickness of their neocortex. The neocortex is the newer portion of the cerebral cortex that serves as the center of higher mental functions for humans. The neocortex contains some 100 billion cells, each with 1,000 to 10,000 synapses (connections), and has roughly 100 million meters of wiring, all packed into a structure the size and thickness of a formal dinner napkin. The cells in the neocortex are arranged in six layers, within which different regions permit vision, hearing, touch, the sense of balance, movement, emotional responses and every other feat of cognition. Their cell bodies and neuron nuclei were larger, dendrites were longer, and the areas of synaptic contacts were greater. These rats also had more protein, more glial cells, larger capillaries, and an increased ratio of RNA to DNA.

The most prominent change in the stimulated animals was in the visual association. However, most areas of the cortex were affected, including the cerebellum and hippocampus. Except for the frontal cortex, where the right hemisphere is affected more than the left, both brain hemispheres appear to be almost equally influenced by an enriched environment.

The more varied the enriched environment and the longer the rat stayed in the environment, the longer it retained its increased cortical dimensions after being moved to a less stimulating environment. These effects were found in both young and old rats. Research also showed that the rats exposed to enriched environments performed tasks such as maze running significantly better than those raised in less stimulating environments.

Teaching

Teaching is the purposeful imparting of knowledge or skills to an individual or group. Learning can occur without a teacher, but teaching cannot occur without a student. But does teaching necessarily imply learning? Historically, teaching has been defined in terms of the quantity and quality of the material covered and the method in which it was presented. Learning was the responsibility of the student. Recently, however, more responsibility for student learning has been placed on the teacher.

The concept of teaching can be broadened to include verbal instruction, computers, textbooks, and other educational materials such as video. However, the teacher is the person responsible for the instruction -- whether a parent, friend, or classroom teacher. A teacher may use various items to aid in instruction, but it is the teacher who makes the decisions regarding the content and techniques used in their instruction.

The Classroom

In teaching, there is the teacher and the students, who work together to educate the students about the particular subject matter. This system of teaching is designed to modify the students' behavior, experience, understanding, and knowledge.

Originally, schooling was considered merely a process of learning, memorization, association, and practice. However, the growth of students' intellect coincides with their development through different phases: coordination, symbolization and visual recognition, language, logical thought, and eventually formal structure and explanation. Any attempt at educating a child intellectually must take into account these characteristics. Education must pace development, not ignore it or follow it. A child's educational growth includes physical, emotional, and mental maturation, experience, formal teaching through language, and problem-solving.

The teacher's role involves sharing knowledge and experience with the students at an appropriate time. The teacher leads the students through different learning situations to encourage independent thought, critical analysis, realization, and problem-solving.

The subject matter has an influence on the total teaching environment. Subject matter is traditionally divided into the headings of languages, humanities, sciences, mathematics, and arts. Each group of subjects has something in common with other groups in terms of the demands it makes on the students, but is also unique in its method of development. Languages require verbal learning, primarily based on oral work. The humanities call for an understanding of cause-effect relationships. The sciences require induction from experience, and deduction when scientific laws are formulated into mathematical terms. Mathematics calls for the ability to symbolize and deduce. The arts require creative freedom.

Classroom structure is dynamic in terms of teaching methods, decision-making, the hierarchy of its members, and the existence of cliques. The students conduct themselves under the influence of the group, and each student's achievement and attitude is subject to evaluation by the group.

In most classes, the age range of the students is approximately one year. This narrow range allows for uniformity of the subject matter being taught. However, in rural one- and two-teacher schools, students from different age groups and ability levels are mixed together. This changes the teaching method, since it now must cope with smaller subgroups, which progress at different rates and need to cover different material. The teacher must find a way to coordinate the work of the smaller groups so that equal attention is given to each group.

Teaching-Learning Situations

Teaching involves individual lessons that are part of a larger unit. However, each lesson is a self-contained concept within a broader topic and consists of individual teaching-

learning-thinking-practice exercises. A single lesson may consist primarily of instruction (a lecture or notes) or hands-on work (experiments/labs), or alternate between these.

Although lessons vary depending on the material being taught, resources available, and the teacher, generally a lesson consists of the following sequence of steps:

- Preparation: the teacher starts the lesson with the general concept of the lesson, which is associated with something already known by the class.
- Presentation: introducing the new material.
- Association: the new material is compared with old material and logical connections are made.
- Generalization: other examples of the new idea are presented.
- Application: the new ideas are applied to further material or investigation (eg. practice problems, a critical thinking exercise, or a lab).

This sequence of steps gives the teacher a clear role and provides the student with the opportunity for active, participatory learning.

The teacher selects and organizes the material that is to be taught in order to guide the students' learning. The students' curiosity, experience, and involvement are also essential to the learning. One problem teachers face is how to maintain the students' interest and curiosity, since those are the main motivators for learning. Sustained interest leads students to set realistic standards for their achievement.