PEDAGOGY COMPONENT
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CHAPTER 1: CLASSROOM MANAGEMENT

Overviews
In this Chapter, we shall cover,

• Concept of classroom management
• Teacher as a classroom manager
• Factors affecting classroom environment
• Preventive classroom management
• Classroom discipline

Key Terms
• Classroom management
• Teacher as an effective classroom manager
• Authoritarian leadership style
• Democratic leadership style
• Laissez-faire leadership approach
• Mandated time
• Allocated time
• Instructional time
• Engaged time or time on-task
• Academic learning time
• Communication
• Rules and procedures
• Disciplinary problem
• Disciplinary plan

Further Reading

Suggested Input
1. Classroom management : actions and strategies used to maintain order in the classroom
2. **Teacher as an effective manager**: able to get students’ cooperation, maintain their involvement in instructional tasks, and carry out the business of classroom smoothly. Example, the teacher has to lay down rules and procedures for learning activities. Sometimes this role is viewed as nothing more than that of disciplinarian, the person who must see that the classroom group and its individual members stay within the limits set by the school, the limits set by the teacher, and the limits set by the tasks at hand. In fact, the teacher must also manage a classroom environment. He organizes the classroom space to fit his goals and to maximize learning. Seating must be arranged; posters hung; bulletin boards decorated; extra books, learning carrels, and bookshelves installed. Classroom management for the teacher also involves modeling a positive attitude toward the curriculum and toward school and learning in general. Finally, a teacher needs to manage and process great amounts of clerical work. There are papers to be graded and read, tests to be scored, marks to be entered, attendance records and files to be maintained, notes and letters to be written, and so forth.

3. **Factors affecting classroom environment**: There are factors which affect classroom atmosphere

- **Leadership style**: Different leadership styles will affect the atmosphere of students’ learning. (i) Authoritarian leadership will discourage learning, the teacher tends to put down the students when they make mistakes. (ii) Democratic leadership, the sharing of responsibility, seeks compliance through encouragement rather than demands. The teacher is kind, caring, and warm, but also firm. Self-esteem is developed by sharing of responsibility. Research has shown that productivity and performance are high in well-run democratic classroom. (iii) In laissez-faire leadership approach, the teacher is completely permissive. Anything goes! Everyone does his or her own thing. This type of leadership often leads to chaos. It produces disorganization, causes student frustration, and results in little if any work.

- **Physical environment**: An attractive room is conducive to learning. As a teacher, you will in most cases have full responsibility for the appearance and comfort of your room.

- **Room arrangement**: Your room arrangement should aid teaching and learning and help maintain discipline. The seating arrangement should focus on the chalkboard since most class instruction occurs there. You
should also provide access to pencil sharpeners, reference books, learning centres, trash containers, etc. Place these accessories behind or to the side of the students’ focal points, since travel to and from them can be distracting.

- **Motivation:** The teacher should try to motivate the students by (i) expecting the best from students (ii) modelling desired behaviour (iii) establishing a positive atmosphere (iv) actively involving students (v) making learning seem worthwhile (vi) cultivating self-esteem (vii) capitalizing on curiosity (viii) use reinforcement (ix) reducing anxiety

- **Time in schools and classrooms:** School time is obviously limited. In fact school time can be divided into five different categories: mandated time, allocated time, instructional time, engaged time, and academic learning time.

  (i) **Mandated time:** the time set by the Ministry of Education. A typical school is in session from 7.45 in the morning until 2.05 in the afternoon for about 190 days. This set time must be used for both academic and nonacademic activities.

  (ii) **Allocated time:** During the mandated time, a variety of subjects must be taught plus time must be used for lunch, recess, transitions between classes, announcements, etc. The time appropriated for each of these activities is called allocated time. The goal of classroom management is to expand the amount of time allocated for learning.

  (iii) **Instructional time:** Teachers attempts to translate allocated time into learning through instructional time. They try to translate the available, tangible blocks of class time into productive learning activities. The students may not make full use of the instructional time to learn. Instead, they may be daydreaming during seatwork or some may be goofing off.

  (iv) **Engaged time or time on-task:** It is the actual time individual students spend on assigned work. Students are actively (physically or mentally) participating in learning process during engaged time. So, one of the goals of classroom management is to improve the quality of time by keeping students on-task.
(v) **Academic learning time:** Time on-task isn’t always productive. Indeed, students often engage in an activity at a superficial level, with the result that little understanding or retention takes place. If this is happening, the teacher must motivate the students to make time on-task more productive, they must maximize academic learning time. This means that the students’ performance must be at a high success rate (80 percent or more).

- **Communication:** When problems arise in the classroom, good communication between teacher and students is essential. This means that more than just the “teacher talks-students listen” pattern must be taking place. Real communication is an open, two-way street, in which you talk but you must listen.

4. **Preventive classroom management:** Many of the problems associated with student misbehaviour are dealt with by effective teachers through preventive approaches. Some of these approaches are briefly described below:

- Establishing **rules and procedures** to govern important activities in the classroom. Rules are statements that specify the things students are expected to do and not to do. Usually, rules are written down, made clear to the students, kept to a minimum. Procedures, on the other hand, are the ways of getting work and other activity accomplished. They are seldom written down, but effective classroom managers spend considerable time teaching procedures to students in the same way they teach academic matter. Student movement, student talk, and what to do with downtime (occurs when lessons are completed early or when students are waiting for upcoming events, like moving to another class or going home) are among the most important activities that require rules to govern behaviour and procedures to make work flow efficiently.

  - **Categories of rules:** (i) Relations with the adults and peers – be polite and friendly, be friendly and helpful; help your friends; (ii) Academic work – work hard and quietly; do your best; try; (iii) classroom routines – put your hand up; settle down quickly and quietly; (iv) relations to self – respect yourself; be smart; accept your own and others mistakes; keep trying; you can do it; (v) safety – take care; be safe; take care of your friends’ safety.
Example of classroom routines: going in and sitting down quietly when they arrive; collecting and returning books; getting equipment out or moving around the classroom.

- Maintain consistency: Effective classroom managers are consistent in their enforcement of rules and their application of procedures. If they are not, any set of rules and procedures soon dissolves.
- Preventing deviant behaviour with smoothness and momentum: Another dimension of preventive classroom management involves pacing instructional events and maintaining appropriate momentum. Common problems in maintaining smoothness and momentum are: (i) dangle: leaving a topic dangling to do something else (ii) flip-flop: starting and stopping an activity and then going back to it (iii) fragmentation: breaking instruction or activity into overly small segments (iv) overdwelling: going over and over something even after students understand the facts.

- Orchestrating classroom activities during unstable periods (example, opening of the class, during transitions, closing of the class): This involves planning and orchestrating student behaviour during unstable time. Students are coming from other settings (their homes, the playground, another class) where different set of behavioural norms apply. The new setting has different rules and procedures as well as friends who have not been seen since the previous day.
  - The beginning of the class is also a time in most schools in which several administrative tasks are required of teachers, such as taking roll and making announcements. Effective classroom managers plan and execute procedures that help get things started quickly and surely.
  - Transitions are the times during a lesson when the teacher is moving from one type of learning activity to another. Planning is crucial when it comes to managing transitions. Cueing and signaling systems are used by effective teachers to manage difficult transition periods.
  - The closing of the class is also an unstable time in most classroom. Sometimes the teacher is rushed to complete a lesson that has run over its allocated time; sometimes materials such as test or papers must be collected; almost always students need to get their own personal belongings ready to move to another class, the canteen or the bus. Effective classroom managers anticipate the potential
management problems associated with closing class by incorporating the appropriate procedures into their classroom.

- Developing student accountability: Effective classroom managers always hold students accountable for their work, such as completing and handing in their assignments on time or little learning will be accomplished.

5. **Discipline:** Teachers who attend to many of the aspects of classroom management identified as crucial to positive learning events will avoid a great many conflicts and have significantly fewer classroom disruptions. Even so, there will be times when students bring problems to the classroom, and even teachers who are very effective classroom organizers will be confronted with unproductive student behaviour that requires intervention (Brophy, 1996). Disciplining students for disruptive behaviour should be part of a continuous plan that is explicit to the teacher and students. Skills necessary for teachers during disciplining procedures are the ability to work with teams of professionals who can focus on the disruptive behaviour or a particular student, and the knowledge to develop and carry out management and discipline plans.

The most important aspect of attending to disruptive behaviour is to return the classroom to a constructive atmosphere. Regaining control of the classroom quickly and avoiding involvement of more students than necessary is a goal following any type of disruptive behaviour or confrontation. Several strategies are important for the teacher when responding to disruptive student behaviour:

(i) Try not to make unreasonable requirements or overreact to disruptive incidents.
(ii) Be honest about your feelings. If you are upset, disappointed, or angry, explain to the students.
(iii) Be consistent and follow through with what you said you will do
(iv) Be fair with your students. If you have made a mistake, applied rules indiscriminately, or have implemented actions that are not working or were not fair in the first place, apologize to your students. They will respect you for your honesty and openness.

When students’ misbehaviour is serious and teachers’ effort fail to result in appropriate behaviour, more severe strategies are needed. Consequences may involve corporal punishment and suspension from school.

6. **Disciplinary problem:** is a behaviour that (i) interferes with the teaching act; (ii) interferes with the rights of others to learn (iii) is psychologically or physically unsafe; (iv) destroys property. A disciplinary problem could not only be caused by a student but it could also be caused by a teacher. When a teacher
inappropriately or ineffectively employs management strategies that result in interference with the learning of others, he in fact becomes the discipline problem. This is also true for inappropriate or ill-timed classroom procedures, public address announcements, and school policies that tend to disrupt the teaching and/or learning process.

7. **Causes of misbehaviour**: The most common causes of misbehaviour in the classroom are: (i) boredom – failing to offer classroom activities that are interesting, appropriately timed, challenging and relevant; (ii) an inability to do the work a teacher has set – because it is too difficult, expressed in inappropriate language or it is unclear what pupils need to do; and (iii) effort demanded for too long a period with a break – which is difficult to sustain over a long period; (iv) poor teacher organization – visual aids do not work or there are too many interruptions to the flow of the lesson; (v) confusion about teacher expectation – the teacher fails to be clear and explicit about the kind of conduct that is expected; (vi) social or peer interaction – conversation or behaviour can spill over into the classroom from the corridor, playground or outside school; (vi) low academic self-esteem – students lack confidence in themselves because they experienced failure before.

8. **Practical strategies for managing misbehaviour (Kyriacou, 1991):**

- Ways of preventing misbehaviour
  - Scan the classroom (see if any pupils are having difficulties and support them in resuming working quickly. Individual contact is more effective than calling across the room.
  - Circulate (Go around the room asking pupils about their progress. This uncovers problems which otherwise would not be obvious.
  - Make eye contact (Do this with individuals when talking to the class)
  - Target your questions (Directing questions around the class keeps students involved.
  - Use proximity (moving towards students who are talking indicates awareness of their conduct. Standing by pupils keeps them on task.
  - Give academic help (This encourages students to make progress with the task set and is one of the best ways of pre-empting misbehaviour.)
- Change activities or pace (Sometimes lessons proceed too slowly or too fast, so altering the activity or pace can be crucial for maintaining students’ involvement.)

- Notice misbehaviour (Use eye contact, facial expressions and pauses to signal disapproval, so there’s only a momentary interruption of the lesson. Ignoring trivial incidents allows more serious misbehaviour to occur.)

- Notice disrespect (Discourtesy to you, as teacher, must be picked up or it will undermine the standard of behaviour expected from students.)

- Move students (If necessary, separate students whose behaviour is not acceptable, while stressing it is done in their interest).

**The effective use of reprimands:**

- Correct targeting (It is important to identify correctly the student who is responsible for misbehaviour)

- Firmness (Use a clear and firm tone. Avoid pleading or softening the reprimand once it is used.)

- Express concern (Reprimands should convey your concern with the student’s interests or those of other students affected by misconduct.)

- Avoid anger (Don’t lose your cool, whatever the provocation. Speak assertively, not aggressively, and don not rise to any bait).

- Emphasise what is required (Stress what students should be doing rather than complain about bad behaviour. Eg. “You may talk quietly with your neighbour” rather than “There’s too much noise in the class”.

**The use of punishments: When reprimands do not work**

- Focus on the misdeed (avoid personalised punishments so that the student is forced to consider the consequences of his/her action);

- Follow promptly after the offence (punishment will be more effective in modifying behaviour if it follows immediately, although deferral can be effective if it causes an unpleasant anticipation of what is likely to happen);

- be consistent (students have a strong sense of grievance about variations in treatment either between individuals or between occasions);
- fit the crime (the scale of punishment used should demonstrate the seriousness of the offence and the strength of the school's disapproval);
- be followed by reconciliation (Once a punishment is over, attempt to rebuild a positive relationship with the student).

9. Example of a classroom discipline plan:

- **Rules**
  - Follow teacher directions first time
  - Keep hands, feet and objects to yourselves
  - Be polite and friendly
  - Work hard

- **Rewards**
  - Praise
  - Good behaviour
  - Positive letter home

- **Corrections**
  - Warning
  - 2 minutes away from the group
  - 10 minutes away from the group
  - Detention
  - Interview with Disciplinary Master/ Senior Assistant/Principal
  - Parents called in
CHAPTER 2: THINKING STRATEGIES

Overview
In this Chapter, we shall cover,

• Reflective and meta-cognitive thinking
• Types of questions
• Thinking tools

Key terms
• Reflective thinking
• Meta-cognitive thinking
• Thinking tools

Further Reading

Suggested Input
1. Reflective thinking essentially means a person thinks independently. He knows how to reason, to think for himself, to combine intuition and logic in the process of solving problems either within his internal world or the world around him.

2. Meta-cognitive thinking means knowing how to learn. Thinking skills and study skills are examples of meta-cognitive skills. For example, we try to assess our own understanding, choose an effective plan to solve problems. Hence, meta-cognitive skill enables the students to think about their own thinking process. For instance, when you ask yourself, “How well did I really handle that decision?” , you are asking yourself a meta-cognitive question. You are setting out to think about your own thinking. When you sit down to tackle assignment and ask yourself, “Now just how am I going to approach these problems?” you are again asking yourself a meta-cognitive question. However, if you say to yourself, “I don’t
like the way I ended that short story." You are not thinking about your own thinking, you are thinking about an eternal product, that is the short story.

3. Meta-cognitive thinking is supremely important to the cultivation of good thinking. Through meta-cognition, people become aware of their usual thinking practices and gain the perspective they need to fine-tune or even radically revise those practices. How this works becomes clearer if we distinguish four degree of meta-cognition, a kind of ladder of meta-cognition with the most powerful variety at the top (Swartz & Perkins, 1990).

4. Teaching reflective and meta-cognitive strategies to students can lead to a marked improvement in their achievement. This is because teaching involves so much more than giving information, applying technical skills, or managing a group of children. It is a process by which students are taught to be reflective.

5. The use of different types of questions is an effective tool to teach thinking skills among our students. Questions can be categorized into divergent questions, convergent questions, Low-Level Questions, and High-Level Questions or High Order Thinking Level Questions (HOT).

6. Convergent questions are those that require one correct answer. Generally, they are questions of fact are recall and often of at low level. Divergent questions are just the opposite. They require different answers as long as the answer are appropriate. In other words, questions can be answered in several ways.

7. Low-level questions require students to recall facts or information. For example, How much is $8 + 7 =$ , What is the Pythagorean theorem? On the other hand, High- Level Question requires a certain degree of intellectual processing on the part of the student. For example: To what extent cyber cafés influence our teenager? How is architecture influenced by culture?
8. We can use different thinking tools to enhance reflective and meta-cognitive thinking among our students. Mind maps, graphic organizer, CoRT 1 (PMI, CAF, C & S, AGO, FIP, OPV, and APC) are useful to help students to recall related information that could be used to assist in incorporating new information.

9. **Mind mapping** is a very useful thinking tool. Mind mapping is a way of notes taking whereby one should start from the main idea and branch out as dictated by individual ideas and general form of the central theme. According to Buzan (1989), the brain works primarily with key concepts in an inter-linked and integrated manner, our notes and our word relations should in many instances be structured in this way rather than in traditional 'lines' or notes that are taking in linear forms. A mind map has a number of advantages over the linear form of note taking.
   ♦ The center with the main idea is more clearly defined.
   ♦ The relative importance of each idea is clearly indicated (more important ideas will be nearer the center).
   ♦ The links between the Key concepts will be clearly indicated.
   ♦ As a result of the above, recall and review will be both more effective and more rapid.
   ♦ The nature of the structure allows for the easy addition of new information or ideas.

10. **Mind mapping laws:**
   - Start with a coloured image in the center.
   - Images throughout your Mind Map.
   - Word should be printed.
   - The printed words should be on lines, and each line should be connected to other lines.
   - Words should be 'units', i.e. **one word per line**.
   - Use **colours** throughout the Mind Map to enhance memory, delight the eye and stimulate the right cortical process.
   - In creative efforts of this nature the **mind should be left as ‘free’ as possible**.

11. **Graphic representations** or organizers are visual illustrations of verbal statements. Many graphic representations are familiar to most adults: flow charts, pie charts, and family trees. More sophisticated graphics include spider maps, fishbone maps, network trees, and compare/ contrast matrices.
   - Graphic representations or organizers (GO) are important because they:
• help the learner to comprehend, summarize, and synthesize complex ideas.
• help students to select important ideas as well as detecting missing information and unexplained relations.
• help students to solve problems and making decisions.

12. Constructing Graphic Outlines:

• **Survey:** First, the students survey the title, subheadings, illustrations and their captions, the initial summary or abstracts, and the objective of the text to determine what the passage discusses and how the discussion is structured.

• **Represent:** The student begins to form a hypothesis about the structure of the text and mentally searches his or her repertoire of graphic structures for the best “fit”. For example, the use of compare or contrast diagram, predicting consequences of options, spider map or problem solving outline.

13. Cognitive Research Trust from which the abbreviation, CoRT is derived is a programme designed by Edward d Bono. The CoRT Programme teaches thinking skills through the use of thinking “tools” in a formal, focused, and deliberate manner. The programme has a multitude of applications. CoRT 1 is designed to encourage students to broaden their thinking. Often, we take too narrow a view when we think. We tend to **judge** rather than **explore**. CoRT 1 consists of:

• Treatment of ideas (PMI- plus, minus, interesting)
• Factors involved (CAF- consider all factors)
• Consequences (C & F- consequences and sequel)
• Objectives (AGO- aims, goals, objectives)
• Priorities (FIP- first, important, priority)
• Alternatives (APC- alternatives, possibilities, choices)
• Other People Views (OPV)

14. PMI is used to examine an idea for good, bad or interesting point, instead of immediate acceptance or rejection. For instance:

  a. Teaching of Mathematics and Science in English
  b. Teaching as a career for graduates.
  c. The employment of foreign workers in the country.

**Steps involved:**

  a. List down all the plus points.
  b. List down all the minus points.
c. List down all the interesting points
What is your decision after considering all the factors?

15. CAF is used to look as widely as possible all the factors involved in a situation, instead of only immediate ones. For instance:
   a. What is the best way to improve the level of English among our graduates?
   b. Extra-mural activities are compulsory for all students.
   c. A credit in Mathematics is a pre-requisite for all candidates applying for teacher training.

Steps involved:
   a). List down all the factors.
   b). Consider each factor.
What is the appropriate decision to be made?

16. C &S deals with the consideration of the immediate, short, medium and long term consequences. For instance,
   a. The introduction of abacus in the primary one Mathematics.
   b. The introduction of sex education in the primary and secondary school curriculum.

Steps involved:
   a. What are the long term effects?
   b. What are the risks I have to face?
   c. To what extent the new plan would bring changes?

17. GO is used to pick out and defining objectives so as one is clear about his own aims and understanding those of others. For instance,
   a. What is the AGO by implementing car pool system in the cities?
   b. What is the AGO by introducing Moral Education in the school curriculum?

Steps involved:
   a. What is the AGO of the plan?
   b. Are the implementations out of The AGO?
   c. How do I make sure that the AGO is achieved
   d. 
   e. FIP is used to choose from a number of different possibilities and alternatives, i.e., putting priorities in order. For instance,
      a). What is the FIP for one session school system?
      b). What is the best strategy to solve misbehavior problems in the class?

Steps involved:
   a) What are the important matters involved?
b) Which is the most important one to be considered?
c) Which one should be given priority?

21. **APC** deals with generating new alternatives and choices, instead of feeling confined to the obvious ones. For instance,
   a). The PMR examination should be abolished?
   b). It is compulsory for all students to have a credit in English in order to be awarded the SPM certificate.

**Steps involved**
   a). What are the other alternatives to overcome the problem?
   b). What are the implications incur if every step is taken?
   c). What is the best solution?

22. **OPV** means moving out of one’s own viewpoint to consider the points of view of all others involved in any situation. For instance,
   a). All student teachers are required to stay in the hostels provided.
   b). All school leavers are required to attend military training for a period of three months.

**Steps involved**
   a). Will this idea influence others?
   b). Other’s people opinion on this matter?
   C). Is your idea relevant before actions are taken?
CHAPTER 3: EFFECTIVE COMMUNICATION

Overview
In this Chapter, we shall cover,

- Concept of communication
- Models of communication
- Interference and barriers in communication

Key terms
- Communication
- Interference and barriers

Further Readings


Suggested Input
1. The term communication is abstract. In the classroom context, communication means verbal and nonverbal transactions between teacher and students and between or among students. In order to communicate, several components are necessary. For example, we need interactants and a message. We also need channels (hearing, sight, and the other senses) through which the message can be sent and received. The environment in which the communication takes place is also important. In the educational context, this is termed classroom climate. One of the most popular models of communication is Shannon and Weaver’s model.

Shannon and Weaver’s Model Of Communication

![Shannon and Weaver's Model](image-url)
According to Shannon and Weaver’s model (as seen above), as message begins at an information source, which is relayed through a transmitter, and then sent via a signal towards the receiver. But before it reaches the receiver, the message must go through noise (sources of interference). Finally, the receiver must convey the message to its destination. Suppose you have an idea in your head (information source) that you want to tell someone about, you must first move the idea from your brain to your mouth (transmitter). Since you cannot actually share your gray matter, you must select words for your transmitter to use. Once you speak, your voice (signal) is carried through the air towards the listener’s ear (receiver). Along the way, your signal is joined by myriad of other sounds and distractions (noises). The receiver then takes everything he receives and tries to maximum the message and minimize the noise. Finally, the receiver conveys his message to the other person’s mind (destination).

2. Another popular model is the Shannon Model. This is an informatics model. The main features are:

- the language in which information is carried down the channel is not the same as the representation of that information at either source or destination.
- distortion may occur at encoding or decoding and along the channel.

![Information theory model (Shannon)](image)

Its main consequence is that the message received is not the same as the message sent.

3. Schramm (1955) also developed a model of communication. His model consists of five distinct stages:

- formulation of messages
- encoding of messages
- transmission of messages
• decoding and interpretation of messages
• feedback and evaluation

Schramm’s Model Of Communication

4. There are several **barriers / interferences to effective communication**. For example, communication apprehension, sexism, teacher expectancy, student expectancy, cultural diversity, factual distractions, semantic distractions, mental and physical distractions, and students with special needs. The student with high communication apprehension is one who attaches high levels of punishment to the communication encounter. For example, the student tries to avoid communication situations, he feels uncomfortable, tense, embarrassed, and shy. In the other hand, teacher can be high in communication apprehension. Teacher with communication apprehension prefer instructional systems that reduce the amount of student-teacher and student-student communication. In other words,
teacher dominates classroom discussion, and too much of talking. Hence, the students feel threatened, shy to voice out their opinions.

5. There are various ways of effective communication in the classroom. Firstly, effective listening is very important. We acquire knowledge, develop language, increase our communication ability, and increase our understanding of ourselves and others through listening. Reflective listening is one of the types of effective listening because we listen with feeling as well as with cognition.

6. The teacher plays an important role in effective communication. For example, securing students' attention, use of voice, teacher's exposition and explanation, questioning techniques, teacher's non-communication skills (appearance, eagerness and interest, confidence and caring).
CHAPTER 4: INTERACTIONS IN THE CLASSROOM

Overview
In this Chapter, we shall cover,

- Concept of interaction in the classroom
- Types of interactions
- Importance of interaction in teaching-learning
- Teaching skills in micro-teaching and evaluation
- Ways of creating effective interaction in the classroom

Key terms
- Interaction in the classroom
- Effective interaction
- Teacher’s leadership

Further Readings
Sotto, E. (1994). When teaching becomes learning. New York:

Suggested Input
1. Interaction implies a relationship between two people involving interchanges over an extended period of time. The interactions are mutual. Besides learning through interacting with teachers, students learn by collaborating with peers in pairs and small groups and by interacting with them during class discussion. Interaction is important in the development of interpersonal and intra-personal communication. Now, with the integration technology into our teaching, especially with the use of educational software and hardware applications, student-teacher interaction becomes more complicated.

2. Types of interaction can be divided into social interaction and group dynamics, and also computer interaction. Social interaction involves student-student interaction and student-teacher interaction. Students learn by collaborating with peers in pairs and small groups. Hence, students behave differently. They tend to form groups based on the identity and personality of their own. For example, Siti,
Mei Fang, Sarojini, Murni and Salbiah form a clique, and this group dynamics is a force to be reckoned with because it influences the group behaviours.

3. **Social structure and interactions in learning situations** – There are a number of forms of interaction between teacher and students and among students themselves which may be found in school learning situations [Cohen and Manion (1977): A Guide to teaching practice, page 189-172].

**Situation 1: the teacher-centered lesson**

The principle of interaction underlying the teacher-centered situation may be illustrated as in Example 1. Although only five pupils are represented in the diagram, this figure may vary, with perhaps a notional thirty pupils being a more representative number in this kind of situation.

![Diagram](image)

This interaction pattern here is one in which the *teacher* listens. As Oeser notes, their relationship to listening, perceiving and assimilating; and there is no interaction among pupils themselves.

**Situation 2: the lecture-discussion**

The second situation may be seen as a variant of the first, being one in which the pattern of instruction is not wholly dominated by the teacher. It is represented diagrammatically in Example 2. Again, the member of pupils may vary, depending upon the circumstances. Oeser points out that three of the most important aims of the educator are: to turn the latent leadership of a group in the direction of the educational process, to encourage the development of leadership; and to encourage cooperative striving towards common goals while discouraging the exercise of authoritarian leadership. The social structures evolving through situations 2, 3, 4 and 5 provide a framework for the achievement of these aims.

![Diagram](image)

**Situation 3: active learning**

Example 3 depicts a social situation in which the teacher allows discussion and mutual help between pupils.
Practical work in a science lesson would be an occasion for this kind of situation. The letters TE in the diagram indicate that the teacher now begins to assume the additional role of expert. As Oeser notes: ‘He, of course, retains his other roles as well; but the emphasis is the teaching process now: fluctuates between established by the task and the needs of the individual pupils. For this reason, the situation may be described as task and pupil-centred and as one beginning to have a cooperative structure.

Situation 4: active learning: independent planning
Scrutiny of Example 4 shows, how this fourth situation evolves logically from the preceding one. The pupils are now active in small groups, and the teacher acts more or less exclusively as an expert-consultant (indicated in the diagram by a wavy line)

As Oscar says: Groups map out their work, adapt to each other’s pace, discuss their difficulties and agree on solutions. There is independent exploration, active learning and a material development of a task- directed leadership on each group. The social climate is co-operative and the education may be described as pupil and task-centered.

Situation 5: group task-centred
A characteristic situation in which a smallish group of individuals is concerned with a particular topic, project or problem, is illustrated in Example 5.

Situation 6: independent working; no interaction
This final variation, illustrated in Example 6, arises when pupils are working quite independently and there is no interaction.
This situation will occur when pupils are working at exercises on their own or in a formal examination session.

In summary, Oeser observes that from situation 1 to 4 there is a progressive change from teacher-centred through task-centred to pupil-centred activities, from passive to active learning and from minimal to maximal participation, with a progressive domination of the coerciveness of the teachers’ roles. In situation 5, the situation is again task-centred, but the teacher’s status as such has disappeared.

The six situations outlined above will help the reader not only to understand classroom-based social and learning situations, but also patterns of interaction occurring outside the classroom.

It is great importance that the student teacher be aware of the sort of situation he wants in a lesson, or at a particular point in it. This will be chiefly determined by his lesson objective together with the kinds of factors isolated Oeser which will contribute to defining the overall situation. These include (1) high-low teacher dominance; (2) large-small number of pupils; (3) high-low academic level of class; (4) active-passive pupil participation; (5) individual- co-operative effort; (6) contentious-non-contentious material; (7) strong-weak-needs (8) task and learning oriented examination oriented; and (9) directing-helping (counselling).

4. With the tremendous growth of electronic networking (the Internet), students can now interact with their peers and teachers. E-mail is an excellent medium for students and teacher to use in sharing ideas, materials and resources.

5. Interaction plays an important role in effective classroom management. Firstly, closely-knitted interaction between student-student or teacher-student helps in developing positive interpersonal relationship at all times. It helps in promoting
A conducive classroom learning atmosphere. Interaction between students who actively engaged in independent work tasks can help in reducing deviant behaviour among the students. Furthermore, instructional planning and preparation can be carried out accordingly without much interferences.

6. Teacher’s leadership plays an important role in the classroom interaction. He should fully committed in his responsibilities, is disciplined and productive. He has to promote the qualities of respect, love and caring among his students. He should also involve his students in group activities and cooperative learning. He is a role model to his students, he shows that he practices what he preaches. He provides feedback to students through praise, and should uphold moral values and humanitarian principles in all his actions.
CHAPTER 5: MICRO-TEACHING

Overview
In this Chapter, we shall cover,

- Concept and importance of micro-teaching
- The micro-teaching process
- Teaching skills in micro-teaching and evaluation
- Implementation of micro-teaching in teaching-learning

Key terms
- Micro-teaching process
- Micro-skills

Further Reading


Suggested Input
1. As we all know, teaching is an extremely complex activity. Microteaching provides the student teacher with a gradual introduction to the complex activity of teaching. Microteaching is 'micro' or scaled down in three ways:
   - class size (the number of pupils may be as few as 5
   - length of lesson-it may be as short as 5-10 minutes
   - task complexity-usually by focusing on only one teaching skill at a time

Microteaching is scaled up in one very important respect—the provision of performance feedback, so that the student teacher knows how successfully he has performed each time he teaches. Thus, as Professor E C Wragg says in his book Teaching teaching (David and Charles, 1974), "The argument in favour of the technique is that it enable a teacher to develop his repertoire of professional skills in an atmosphere congenial to learning, away from the hurly-burly of normal classroom life, and that, especially for the novice, this relatively safe environment is essential for effective learning to take place".
2. By mastering microteaching skills, the size of class, the amount of time, the scope of the lesson etc., the complexities of the classroom are drastically reduced. This allows the student teacher to focus upon the acquisition of certain teaching skills, or the accomplishment of certain tasks. Further more, such focusing is made possible because of the high degree of control that can be brought into the microteaching situation. Last but not least, microteaching has the enormous advantage of being able to offer immediate feedback to the student teacher regarding his performance.

3. The microteaching process consists of: discussion, planning, implementation, reflective evaluation, replanning and reteaching.

4. The general teaching skills that are practiced in a microteaching programme consists of: set induction, use of the writing board, stimulus variation, questioning, reinforcement, explanation and use of resource materials (aids, examples, illustrations), and closure.

5. **Set induction** introduces a lesson, or a new topic within a lesson in a way which will interest pupils in what is to follow and also help to establish what they already know and link this with what is to follow.

   i) The objectives of set induction are:

   - To focus student attention on what is to be learnt.
   - To create a frame of reference before or during a lesson.
   - To give meaning to a new concept or principle.
   - To stimulate student interest and involvement

   ii) When to induce a set induction:

   - At the beginning of a lesson.
   - When changing topics.
   - Before a question and answer session.
   - Before a panel discussion.
   - Before films, filmstrips, video clips, radio programmes

   iii) The components of set induction consist of:

   - Attention gaining
   - Motivation stimulation
   - Cognitive link
   - Structure provision

   iv) Set induction appraisal guide is shown below:

<table>
<thead>
<tr>
<th>Components Of Set Induction</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>Attention Gaining</td>
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<td>-----------------------------------</td>
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</tr>
<tr>
<td>1. Use of voice to focus interest</td>
<td></td>
<td></td>
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<tr>
<td>2. Use of audio-visual aids</td>
<td></td>
<td></td>
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<tr>
<td>3. Use of gestures and eye contact</td>
<td></td>
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<tr>
<td>4. Introducing something unusual</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Motivation stimulation</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1. To arouse curiosity (use of analogy)</td>
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<tr>
<td>2. Use of story telling technique</td>
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<tr>
<td>3. Involve students in their tasks</td>
<td></td>
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<tr>
<td>4. Ask provocative questions</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Cognitive Link</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1. Relate to past experience</td>
<td></td>
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<tr>
<td>2. Relate to new experience</td>
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<td>3. Relate to current events</td>
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<tr>
<td>4. Relate to students’ interest and experience</td>
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</table>

<table>
<thead>
<tr>
<th>Structure Provision</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1. Stating the limits of the task</td>
<td></td>
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<tr>
<td>2. Using a series of questions</td>
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<tr>
<td>3. Stating ways to accomplish task</td>
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<tr>
<td>4. Stating activity, task or project</td>
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**Please (✓) at the relevant column.**

6. **Stimulus variation** is concerned with the ability to introduce variety into lessons so that pupils are attentive and thus learn better. Its components include the following: teacher movement, teacher gesture, change in speed pattern, change of sensory focus, pupil talk, and pupil movement.

6.1 Stimulus variation appraisal guide is shown below:

<table>
<thead>
<tr>
<th>Components</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher movement</td>
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<tr>
<td>Eye contact and movement</td>
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<tr>
<td>Teacher voice</td>
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<tr>
<td>Teacher-group interaction</td>
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<tr>
<td>Teacher-pupil-teacher interaction</td>
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<tr>
<td>Pupil-pupil interaction</td>
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<tr>
<td>Teacher-object interaction</td>
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</tbody>
</table>
Pupil-object interaction

Pupil verbal and physical activity

Please (✓) at the relevant column based on pupil or teacher’s observational behaviours.

7. The writing board is the most widely used teaching aid. The correct usage of writing board, especially writing and drawing can intensify students interest and attention on the main aspects of a lesson. Its components consist of:

- Clarity
- Layout
- Highlighting or emphasis
- Technique in presentation

7.1 The use of writing board appraisal guide is shown below:

<table>
<thead>
<tr>
<th>Components</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clarity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Writing is large enough</td>
<td></td>
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<tr>
<td>2. Adequate spacing between two letters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Adequate spacing two words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Diagrams simple or large enough</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Layout</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Use of space is well-balanced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. The arrangement is neatly done</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Notes or sentences are arranged systematically</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Highlighting or emphasis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Coloured chalks are used suitably.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Important words are underlined.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Labeling done in large dark letters</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Presentation technique</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Concepts are clear and precise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Students participation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Time allocation is relevant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Presentation of ideas – simple and neat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please (✓) at the relevant column.

8. **Questioning** is concerned with the ability to ask low-level and high-level questions. This skill also includes the ability to ask various kinds of follow-up question. For example, follow-up prompts (modifying a question that is too difficult for pupils to answer), follow up probe (asking pupil to clarify or elaborate an
answer which is vague), and follow up redirections (redirecting a pupil response to other pupils or the class in general for comment and discussion).

8.1 The basic errors in questioning technique include teacher’s tendencies:

- to limit their questions to a few pupils only
- to give insufficient time for pupils to reflect on answers
- to demonstrate impatience when answers are wrong or inadequate
- to talk so much that pupils find little time to express their own thoughts and knowledge even when asked to do so.
- To ask questions which mainly rely on memory or recall of events and neglect questions that stimulate high order thinking process.

Table 8.1 Questioning technique appraisal guide is shown below:

<table>
<thead>
<tr>
<th>Questioning techniques</th>
<th>Number of questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Framing of questions:</td>
<td></td>
</tr>
<tr>
<td>Clear and coherent</td>
<td></td>
</tr>
<tr>
<td>Focus on one idea</td>
<td></td>
</tr>
<tr>
<td>Pausing</td>
<td></td>
</tr>
<tr>
<td>Prompting</td>
<td></td>
</tr>
<tr>
<td>Refocusing</td>
<td></td>
</tr>
<tr>
<td>Redirecting</td>
<td></td>
</tr>
<tr>
<td>Handling of incorrect responses</td>
<td></td>
</tr>
<tr>
<td>Distributing of questions among the class</td>
<td></td>
</tr>
<tr>
<td>Levels Of Cognitive Questions</td>
<td></td>
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<tr>
<td>Recall</td>
<td></td>
</tr>
<tr>
<td>Comprehension</td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td></td>
</tr>
<tr>
<td>Analysis</td>
<td></td>
</tr>
<tr>
<td>Synthesis</td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td></td>
</tr>
</tbody>
</table>

Please (✓) at the relevant column based on the characteristics of each question asked.

9. The skill of explaining and illustrating with examples deals with the using of relevant and interesting examples to illustrate a point and also whatever teaching aids may be appropriate. It also deals with suitable organization of content;
recapitulation at appropriate stages; stressing of important points by repetition; use of voice; gesture, obtaining pupil participation and feedback.

Table 8.2  Skill of explaining and illustrating with examples appraisal guide is shown below:

<table>
<thead>
<tr>
<th>Components and criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of initiation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Quality of voice variation in pitch, tone and volume</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Emphasizing key points</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Suitable gesture and movement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Simple and concise</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Use of illustration/ examples/audio-visual aids</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Relevant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Clear and interesting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Variety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Sufficient</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Arrangement of ideas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Orderly elaboration of ideas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Use of non verbal cues e.g. gestures and verbal expressions)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Conclusion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Key points are clearly stated (oral/written)</td>
<td></td>
<td></td>
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<tr>
<td>• Key points orderly arranged.</td>
<td></td>
<td></td>
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<tr>
<td>• Clear and concise</td>
<td></td>
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</tr>
</tbody>
</table>

Please (✓) at the relevant column.

10. **Skill of reinforcement** is used when the teacher reinforces good behaviour with a smile, when she praises good answer, encourage a slow learner or writes “Well done” on a piece of work. This can help in to increase pupil attention and maintaining motivation. It also helps in promoting self-concept and consequently help to give them confidence. Components of reinforcement skills are:

- Positive verbal reinforcement- use of such words as “good”, “yes”, “That’s right”.
- Positive non verbal reinforcement (smile, nodding of head, clapping hands)
- Proximity ( moving nearer or standing next to, sitting near the pupils, etc).
- Contact (patting the pupil's head, shaking hands)
- Negative verbal reinforcement ("No", "wrong", "Nonsense")
- Negative non verbal reinforcement (shaking head, frown, etc.)

Table 8.3 Skill of Reinforcement appraisal guide is shown below

<table>
<thead>
<tr>
<th>Components</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive verbal reinforcement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive non verbal reinforcement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximity</td>
<td></td>
<td></td>
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<tr>
<td>Contact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative verbal reinforcement</td>
<td></td>
<td></td>
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<tr>
<td>Negative non verbal cues</td>
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</tr>
</tbody>
</table>

11. **Closure** is rounding off a lesson or topic so as to reinforce pupil interest in it and also help to recapitulate what has been learnt; and making connections between what has been learnt. There are two important types of closure: cognitive and social. The cognitive closure is directed at consolidating what the students have learnt and focusing their attention on the major points covered in the lesson or lesson segment. Whereas the social closure is concerned with giving the students a sense of achievement so that, despite any difficulties they encountered within the lesson, they are encouraged to continue striving. Usually, the social closure is used at the end of a lesson.

Table 8.4 The skill of closure appraisal guide is shown below:

<table>
<thead>
<tr>
<th>Component and criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cognitive link</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Make a summary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Repetition of key points</td>
<td></td>
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<tr>
<td>• Correcting assignment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Suggestion of further activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Reinforcement exercise</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Social Link</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Create a sense of achievement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Positive reinforcement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please (✓) at the relevant column.
12. The lesson plan format for microteaching is generally similar to that of lesson plan for classroom teaching and learning, with the exception that microteaching only focuses one teaching skill. The lesson plan format for microteaching is shown below:

### Sample Lesson Plan Format For Microteaching

<table>
<thead>
<tr>
<th>Component Step</th>
<th>Content/skill</th>
<th>Teaching/Learning activity</th>
<th>Resource Materials/Thinking skills/values</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set Induction (… Minutes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developmental Steps (… Minutes)</td>
<td></td>
<td></td>
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<tr>
<td>Closure (… Minutes)</td>
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</tbody>
</table>

(Source: Education Studies Curriculum (2000), Teacher Education Division, Ministry of Education, Malaysia)
CHAPTER 6: TEACHING

Overview
In this Chapter, we shall cover,

- Concept of teaching
- Expository model
- Information processing model
- Inquiry model
- Project model
- Teacher–centred strategy
- Student-centred strategy
- Resource-based strategy
- Task-based strategy
- Integrative approach
- Inductive approach
- Deductive approach
- Eclective approach
- Smart school pedagogy: directive
- Smart school pedagogy: mediative
- Smart school pedagogy: generative
- Smart school pedagogy: observational study
- Smart school pedagogy: Contextual learning
- Smart school pedagogy: metacognition
- Smart school pedagogy: external context
- Smart school pedagogy: Future study
- Smart school pedagogy: Cooperative / Collaborative

Key Terms
- Concept of teaching model
- Expository model
- Information processing model
- Inquiry model
- Project model
- Teacher–centred strategy
- Student-centred strategy
- Resource-based strategy
• Task-based strategy
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Further Reading
Joyce, B. et al. (2000). Models of learning – tool for teaching. Ballmoor,

Buckingham: Open University Press.

http://www.aber.ac.uk/~mflwww/seclangacq/langteach8.html
http://lrs.ed.uiuc.edu/students/m-weeks/technks.html
**Suggested Input**

1. **Concept of teaching**: The act of teaching can be described as giving instructions to or sharing one’s knowledge with another person. Teaching can be further described as a means for providing students with the knowledge and skills they need to function successfully in the world. In a very practical sense, teaching is diagnosing and prescribing. Teacher diagnose what the specific learning needs (or deficiencies) are, and then prescribe the particular strategies and activities to meet them. This is a very important factor in teaching. The ability to identify student learning needs and to design explicit lessons is what distinguished the professional teacher from a volunteer, an aide, or any other person who wants to teach. In short, teaching is:
   - Committing yourself to lifelong learning and growth
   - Respecting children and adolescents
   - Sharing one’s knowledge
   - Guiding, directing, facilitating, nurturing, and planning
   - Goal setting for yourself and for your students
   - Meeting personal and professional challenges
   - Conveying cultural and national values to others
   - Creating an awareness of (and appreciation for) your potential (Evans & Brueckner, 1992).

2. **Teaching model**: is a type of blueprint for teaching. A model is a prescriptive strategy designed to accomplish instructional goals. It is prescriptive in that the teacher’s responsibilities during the planning, implementing, and evaluating stages are clearly defined. There are different models of teaching, each based on a particular learning theory. For example, there are inductive, deductive, and inquiry models, and variations among these models. Various theories focus on different aspects of the learner, and as a result, their implications for teaching procedures vary. A model provides structure and direction for the teacher, but it cannot dictate all the actions taken by the teacher.

3. **Expository model**: actions is predominantly teacher-centred model that focuses on the expository approaches of narration and explanation, and that uses practice and revision to consolidate learning.
   - **Steps in the expository teaching of concepts**:
     - Teacher:
       a. Define concept and clarify terms.
       b. Link to superordinate concepts
       c. Present positive and negative examples.
Students:

a. Clarify or explain additional teacher examples as either positive or negative.
b. Provide additional examples.

- Steps in the expository teaching of generalizations:

Teacher:

a. State generalization.
b. Clarify concepts within generalization.
c. Present positive and negative examples.

Students:

d. Clarify or explain additional teacher examples as either positive or negative.
e. Provide additional examples.

4. Information processing models: emphasize ways of enhancing the human being’s innate drive to make sense of the world by acquiring and organizing data, sensing problems and generating solutions to them, and developing concepts and language for conveying them. Some models in this family provide the learner with information and concepts; some emphasize concept formation and hypothesis testing by the learner; and still others generate creative thinking. A few are designed to enhance general intellectual ability. Many information processing models are useful for studying the self and society, and thus for achieving the personal and social goals of education. Included in this family of models are:

- Inductive thinking, developed by Hilda Taba and redeveloped by Bruce Joyce.
- Concept attainment, developed by Jerome Bruner, Fred Lighthall and redeveloped by Bruce Joyce.
- Scientific inquiry, developed by Joseph Schwab and many others.
- Inquiry training, developed by Richard Suchman
- Cognitive growth, developed by Jean Piaget, Irving Sigel, etc.
- Advance organizers, developed by David Ausubel and many others.
- Mnemonics, developed by Michael Pressley, Joel Levin, etc.

5. Inquiry model: is guided discovery. One of the strengths of this model is that both the lesson content and the process of investigation are taught at the same time. The steps of inquiry essentially follow John Dewey’s model of reflecting thinking. The common steps include

- Identifying and clarifying a problem
Formulating hypotheses
Collecting data
Analyze and interpret the data to test the hypotheses
Draw conclusions

- Using the process of inquiry provides opportunities for students to learn and practice skills associated with critical thinking. That said, below you will find a basic outline of what the inquiry process includes.

(i) Formulate problems
- Discover problems in real situations and human needs
- Discover problems as extensions of current ideas
- Construct models of phenomena
- Specify variables, categories, & relations among categories
- Analyze a model critically and examine its consequences

(ii) Observe
- Observe phenomena in the real world
- Describe phenomena

(iii) Investigate
- Select appropriate method of investigation: observation, interview, survey, experiment, literature survey, search of existing data, mathematical analysis, etc.
- Choose measurement tools & conventions
- Design sampling & control procedures (deal with variability)
- Apply measurement procedures
- Collect & record data

(iv) Analyze
- Explore & describe data
- Analyze data
- Relate models to real data
- Interpret relationships in data
- Revise a model on the basis of new evidence
- Draw conclusions

(v) Communicate
- Explain ideas
- Formulate arguments for conclusions supported by data
- Publish

(vi) Consider
- Reflect
• Ask new questions
• Formulate new lines of thought/inquiry based on conclusions
• Several approaches to inquiry may be used:
  o During guided inquiry, the teacher provides the data and the students are questioned in order to help them inductively arrive at an answer, conclusion, generalization, or solution.
  o Unguided or open-ended inquiry approaches have the students take more responsibility for examining the data, objects, or events; these investigations are commonly done individually.
  o Specifically, guided and unguided inquiry approaches may involve discussion and question sessions, guided or controlled discussions, some study approaches, projects, and research projects.

6. Project model: refers to a set of teaching strategies which enable teachers to guide children through in-depth studies of real world topics. The Project model is not unstructured. There is a complex but flexible framework with features that characterize the teaching-learning interaction. When teachers implement the Project model of teaching successfully, children can be highly motivated, feel actively involved in their own learning, and produce work of a high quality.

• A project is defined here as an in-depth investigation of a real world topic worthy of children's attention and effort. The study may be carried out by a class or by small groups of children. Projects can be undertaken with children of any age. They do not usually constitute the whole educational program. Younger children will play and explore as well as engage in projects. Older children's project work will complement the systematic instruction in their program. Projects enrich young children's dramatic play, construction, painting and drawing by relating these activities to life outside school. Project work offers older children opportunities to do first hand research in science and social studies and to represent their findings in a variety of ways. Children also have many occasions in the course of their project work to apply basic mathematics and language skills and knowledge.

• Criteria for the selection of topic for a project
  o Not all topics are equally promising in terms of their educational potential. Consider the following (deliberately a very mixed bag!):
    Food  Valentine's Day  trees  fairytales  conflict  animals  going shopping  the senses  rain  bears  dinosaurs  water  roads
Some of these topics may seem to offer more opportunities for children's learning than others. Considering the enormous range of possible topics for study in school, teachers have to be selective.

Criteria used to discriminate among different possible topics of study in school depend on how children learn best, the basic social values we expect children to live by, and what we understand the role of the school to be in educating children. Here is a set of criteria which teachers may wish to add to for themselves. They are expressed in the form of questions which can be asked about the value of studying any given topic.

- **How can a study of this topic**
  - build on what children already know?
  - help children to make better sense of the world they live in?
  - help children to understand one another better?
  - enable children to understand the value of literacy and numeracy in real life contexts?
  - offer children ideas for dramatic play/representation?
  - encourage children to seek sources of information outside school?
  - facilitate communication with parents?

- **Criteria Checklist**
  Some criteria for choosing a good topic for a project:
  - How interesting is the topic for the children?
  - Is it a real world topic?
  - Is there a certain amount of personal experience they already have with the topic?
  - How easy will it be for them to have hands on, first hand experience (field work)?
  - How dependent will they be on adults or books for information?
  - Who can come in and tell about their first hand experience with the topic?
  - Will there be many different questions the children will want to ask about the topic?
  - Will there be opportunities for the children to investigate their own questions actively?
  - Will there be many different ways the children can be helped to represent their findings?
  - Will there be opportunities to take roles in dramatic play?
Will there be any large constructions for the children to build and play with or in?
What will there be to count, measure, and compare?
How are shape, color, texture, or size significant variables in a study of this topic?
What expertise can I draw on from among the parents of the children?
If the topic is of short-lived interest is there a natural follow on for a new project?

This list emerges from watching projects and analyzing with teachers what seems to attract and sustain children's interest for a substantial period of time. One overriding principle seems to be that children's interest can most easily be developed and sustained when topics have direct connections to local people, places and events.

- **Five structural features of the project approach**
  Discussion, Fieldwork, Representation, Investigation, and Display

Why are these features of project work described as 'structural features'?
"On the one hand, structure involves constraint as guidelines are established. Children do not simply do whatever they like. On the other hand, structure provides children with a framework that helps them understand what is expected of them. In this way structure can be liberating as well as constraining. For example, children can approach their work in unique and flexible ways while working within the general framework. This allows different perspectives to be recognized in the effort to reach a shared goal: the successful project." The Project Approach, Bk 2, Scholastic.

- **Features Chart**

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<thead>
<tr>
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<th>*Phase 1 Beginning</th>
<th>*Phase 2 Developing</th>
<th>*Phase 3 Concluding</th>
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<tbody>
<tr>
<td><strong>Discussion</strong></td>
<td>-Sharing prior experience and current knowledge of the topic.</td>
<td>-Preparing for field work and interviews</td>
<td>-Preparing to share the story of the project. Review and evaluation of the project.</td>
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<td></td>
<td></td>
<td>-Reviewing field work</td>
<td></td>
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<td></td>
<td></td>
<td>-Learning from secondary sources</td>
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<tr>
<td><strong>Field Work</strong></td>
<td>-Children talking about their experience with their parents.</td>
<td>-Going out of the classroom to investigate a field site</td>
<td>-Evaluating the project through the eyes of an outside group</td>
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<td></td>
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<td>-Interviewing experts in the field or in the classroom.</td>
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<tr>
<td><strong>Representation</strong></td>
<td>-Drawing, writing, construction, dramatic play, etc. to share prior experience and</td>
<td>-Brief field sketches and notes.</td>
<td>-Condensing and summarizing the story of the study to share the project with others.</td>
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<td></td>
<td></td>
<td>-Drawings, painting, writing, math diagrams, maps, etc. to represent new learning.</td>
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Each of the phases in the life of a project typically offers its own distinctive opportunities for children to represent their understanding. Throughout the project they can draw, paint, discuss, dramatize, write, collect data, count, measure, calculate, predict, construct models, draw diagrams, make graphs, record observations, read for information and for pleasure, sing songs and play music, and many other things. They can show their understanding at the beginning of the study, as it develops through research, and as they look back on the most memorable aspects of the work completed.

Phase 1. The children recall past experience and represent memories of relevant events, objects and people.

Phase 2. The children have new experiences and investigate, draw from observation, construct models, observe closely and record findings, explore, predict, experiment and invent, discuss and dramatize. It is mainly in this phase that longer term, multi-stage project work is undertaken.

Phase 3. The children review the work they have done, summarize, and recreate it in a new form to represent for another audience what they have achieved as a class. They also do more imaginative work, representing new information acquired in Phase 2 in original and personal ways.

7. Teaching strategies:

(i) Teacher-centred strategy: places the teacher at the centre of classroom activity. Teacher-centred strategy is also known as direct instruction. Direct instruction relies primarily on the teacher to direct the students’ thinking and participation and relies heavily on a structured content emphasis. Some examples include review, drill and practice, brief lectures, and student recitations.

- Teacher-centred strategy is also known as explicit teaching. It consists of presenting material in small, systematic steps with calculated pauses to check for student understanding. This approach is particularly useful for
teaching a specialized body of knowledge in which specific facts or well-defined skills exist. For example, teaching science or social studies facts, map skills, grammar rules and concepts, foreign language vocabulary, math computations, and distinguishing fact from opinion are some appropriate examples where explicit teaching approaches may be most useful.

- Teacher-centred strategy consists of teaching in small steps with an emphasis on student practice after each step. The teacher’s role is to present materials, guide students through initial practice sessions, and provide all students with frequent and high levels of practice.

(ii) Student-centred strategy: may be more suitable when information cannot be effectively transmitted by teacher-centred strategy and when goals include creative as well as critical thinking skills to be developed. Instruction in student-centred classrooms is usually less explicit.

- The purpose of the student-centred strategy is to break away from the traditional teacher-dominated classroom and to encourage greater student responsibility and participation.

- A teacher who uses student-centred strategy does not turn over control to the students and let them do what they wish, although student-centred strategy is less direct or explicit. The teacher retains authority and delegates quite a bit of responsibility to the students. The usual role of authoritarian is surrendered; instead the teacher is authoritative, choosing to delegate a portion of the authority to students instead of centering the power in himself or herself.

- The student-centred strategy has been found to be superior in developing student abilities in applying concepts and in developing positive attitudes, fostering motivation, developing personal growth, and in encouraging group social skills. These student-centred classrooms also show evidence of more cognitive growth at high levels, yet they are suspected of being inferior in helping students achieve at tasks that require lower levels of thinking.

- Some examples may include exploration, inquiry and discovery, and some forms of discussion. Some examples of less explicit lessons include analyzing trends in history, literature, documents, or practical problems, the discussion and speculation of solution for social issues, teaching composition, and writing term papers.
Student-centred strategy aims at helping students learn how to learn. This includes creating and arranging a classroom atmosphere in which students can interact with the teacher and other students.

In this kind of strategy, the teacher must be well versed in the subjects they are teaching; each teacher must examine the structure of the discipline, identify the important concepts, and select or develop experiences that are meaningful to the students and that will offer students opportunities to explore and discover what the teacher wants them to learn.

Differences Between Student-centred and Teacher-centred Methods of Teaching: (Adapted from Mratin et al. 1988:395)

<table>
<thead>
<tr>
<th></th>
<th>Student-centred methods</th>
<th>Teacher-centred methods</th>
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<tbody>
<tr>
<td>1</td>
<td>Much student participation</td>
<td>Much teacher participation</td>
</tr>
<tr>
<td>2</td>
<td>Student-to-student interaction</td>
<td>Interaction is teacher-to-student</td>
</tr>
<tr>
<td>3</td>
<td>Teacher acceptance and use of student ideas</td>
<td>Teacher may criticize, correct, or reject student ideas</td>
</tr>
<tr>
<td>4</td>
<td>Student group decides how to proceed with learning task</td>
<td>Teacher makes decisions and decides learning activities</td>
</tr>
<tr>
<td>5</td>
<td>Discussion of personal experiences is encouraged</td>
<td>Discussion is focused on course content</td>
</tr>
<tr>
<td>6</td>
<td>Tests and grades are not the major product of learning</td>
<td>Tests and grades are traditionally used as the major products of learning</td>
</tr>
<tr>
<td>7</td>
<td>Students share a role and responsibility in evaluation</td>
<td>Teacher is solely responsible for evaluation</td>
</tr>
<tr>
<td>8</td>
<td>Teacher emphasizes attitude changes</td>
<td>Emphasis is on intellectual changes</td>
</tr>
<tr>
<td>9</td>
<td>Students are involved in setting class goals</td>
<td>Goals are determined by the teacher.</td>
</tr>
<tr>
<td>10</td>
<td>Attempts are made to establish class cohesiveness</td>
<td>No attempts to establish class cohesiveness</td>
</tr>
</tbody>
</table>

(iii) Resource-based strategy: encompasses a wide range of means by which students are able to learn in ways that are on a scale from those that are mediated by teachers to those where the students are learning independently.

Books have been used as a form of resource-based learning long time ago. In recent years, there has been an increase in use of media in resource-based learning, it includes an increase in learning materials, study guides, textbook guides, workbooks, video and tape packages. Other more sophisticated materials are computer-based learning packages; computer conferences; CD-ROM, multimedia; computer-mediated discussion groups; interactive video discs; materials on the World Wide Web; teleconferencing, video-conferencing and telematics.

Resource-based learning is valuable in helping teachers to cope with the diversity of student need.
Resource-based learning provides ways for students to learn at their own pace, at all times of the day, often in location convenient to them, and it also provides back-up for absentees.

In resource-based learning, the roles of the teacher includes:

- Guiding students about where to turn for information
- Helping them to find the right questions to ask
- Trouble-shooting when they get into difficulties
- Encouraging them when they are failing
- Enabling them to interact in group work

(iv) Task-based strategy:

- The teacher involves students in activities or assignments that provide them with opportunities to practice or apply what they are learning (and in the process, provide them with coaching, task-simplification strategies, or other forms of scaffolding that may be needed to enable them to complete the activities successfully).

- Criteria to consider in selecting or developing activities:

  - Begin with a focus on the unit’s major goals and consider the kinds of activities that would promote progress toward those goals. Ideally, major goals will focus on students’ understanding of the content and ability to apply it to their lives outside of school, and thus will guide teachers toward activities that are whole-application tasks that carry students through to the intended outcomes rather than just providing them with isolated practice of part skills.
  - Given the instructional goals, different activities might be considered:
    - Essential
    - Directly relevant and useful, even not essential
    - Directly relevant but less useful than other activities that serve the same functions more effectively
    - Tangentially relevant but not very useful because they do not promote progress toward major goals
    - Irrelevant or inappropriate to the goals.

  - In selecting from among other activities that do meet these primary criteria, teachers might consider several secondary criteria:
    - Students are likely to find the activity interesting or enjoyable.
    - The activity provides opportunities for interaction and reflective discourse, not just solitary seatwork.
c. If the activity involve writing, students will compose prose, not just fill in blanks.
d. The activity focuses on application of important ideas, not incidental details or interesting but ultimately trivial information
e. As a set, the activities offer variety and in other ways appeal to student motivation to the extent that this is consistent with curriculum goals.
f. As a set, the activities include many ties to current events or local and family examples or applications.

- Besides being well chosen, activities need to be effectively presented, monitored, and followed up if they are to have their full impact. This means preparing the students for an activity in advance, providing guidance and feedback during the activity, and structuring postactivity reflection afterward.
- In introducing activities, teachers need to stress their purposes in ways that will help students to engage in them with clear ideas about the goals they are trying to accomplish.
- Teachers can scaffold by providing any needed information or help concerning how to go about completing task requirements. If reading is part of the task, for example, teachers might summarize the main ideas, remind students about strategies for developing and monitoring their comprehension as they read (paraphrasing, summarizing, taking notes, questioning themselves to check understanding), or provide them with advance organizers that will help to approach the material in the intended ways.
- Once students begin working on activities and assignments, teachers should monitor their progress and provide assistance if necessary.
- Most task will not have their full effects unless they are followed by reflection or debriefing. Here, the teacher reviews the task with the students, provides general feedback about performance, and reinforces the main ideas as they relate to the overall goals.

(8) Integrative approach:
- Is both a method of teaching and a way of organizing the instructional programme so that the many disparate subjects and skills of the curriculum can be related to one another. This approach provides unity to the student’s school experience.
- Is an inductive strategy designed to help students develop a deep understanding of organized bodies of knowledge, while at the same time
practice higher-order thinking about the information they’re studying. The intergrative model views learners as actively constructing their own understanding of the topics they study.

- The purpose of the integrative approach is
  - to teach students to become self-reliant, independent problem solvers, consistent with what is known about the nature of childhood. Thus, it involves students directly and purposefully in learning.
  - To help the students to understand and appreciate the extent to which school learning is interrelated rather than separated into a variety of discrete subjects and skills, as is the case in the traditional curriculum. It is designed to create a high level of interest in learning that will become personalized and individualized. It seeks to construct situations in which students can learn what they want and need to know rather than what the curriculum specifies.
  - To stress the process of learning as opposed to specific subject matter and skills. It capitalizes on the social values of learning. Students are encouraged to work with others in cooperative learning endeavours.

(9) Inductive approach:

1. The teacher provides examples which have the same concept and concept rule in common. However, the concept rule IS NOT STATED. Students will attempt to find it through the examples near the end of the lesson.

2. The teacher, through questioning of the students, elicits critical attributes and non-critical attributes, which are essential and non-essential characteristics of the concept. Through these exercises, students should begin to understand the common concept which is found in all of the examples.

3. The teacher shows examples and non-examples of the same concept to students.

4. Students must categorize the examples or non-examples (those which do not show essential characteristics of the concept rule) by explaining why they do or do not fit the concept rule they are discovering.

5. The students can either a) state the relationship found (in a guided lesson) or b) state relationships that they found, being allowed to differ from the rest of the group as needed (such as an unguided lesson).

**Simple Example**

1. The teacher shows the students examples of squares, possibly tables or objects in the classroom which have the desired qualities as well as mathematical props.
2. The students, with guidance from the teacher, identify characteristics that must be present (CRITICAL ATTRIBUTES) for the object to be a square: a) the object has four sides and b) the object’s four sides are equal (i.e. all have sides which are 10 inches long, or 5 inches, etc).

3. The teacher then elicits the non-critical attributes of a square. (i.e. shape is non-critical or non-essential as long as it meets other characteristics, meaning it could be 2 or 3 dimensional; size is also non-essential; weight is non-essential to the concept rule; etc.)

4. Students should be able to identify the concept rule being demonstrated.

5. The teacher shows more examples of a square, but mixes them in with rectangles (non-examples). Students must distinguish the difference and verbalize it.

6. If not already accomplished, the teacher should ask students to state the concept rule or the relationship(s) they found through the lesson.

(10) Deductive approach:

♦ Teacher starts with the concept rule, or a statement of what the lesson is attempting to prove.

♦ The teacher provides examples which show proof of the concept rule.

♦ The teacher, through questioning of the students, elicits critical attributes and non-critical attributes, which are essential and non-essential characteristics of the concept.

♦ The teacher shows examples and non-examples of the same concept to students.

♦ Students must categorize the examples or non-examples (those which do not show essential characteristics of the concept rule) by explaining why they do or do not fit the concept rule being discussed.

Simple Example

♦ The teacher presents the concept rule of: a square is an object with four congruent sides.

♦ The teacher defines congruent as equal, then he/she shows the students examples of squares, possibly tables or objects in the classroom which have the desired qualities as well as mathematical props.

♦ The students, with guidance from the teacher, identify the following characteristics that must be present (CRITICAL ATTRIBUTES) for the object to be a square: a) the object has four sides and b) the object’s four sides are equal (i.e. all have sides which are 10 inches long, or 5 inches, etc).
The teacher then elicits the non-critical attributes of a square. (i.e. shape is non-critical or non-essential as long as it meets other characteristics, meaning it could be 2 or 3 dimensional; size is also non-essential; weight is non-essential to the concept rule; etc.)

The teacher shows more examples of a square, but mixes them in with rectangles (non-examples). Students must distinguish the difference and verbalize it.

(http://lrs.ed.uiuc.edu/students/m-weeks/technks.html)

(11) Eclective approach: The eclectic approach, as you might have guessed, is a combination of any of the other teaching methods, like the combination of inductive and deductive approaches. In Foreign Language teaching, many teachers use a mixture of both Indirect and Direct Methods.

Grammar Method - easy for the teacher, but too intellectual an approach for the average pupil:
- may kill off his enthusiasm for language learning
- gives little chance to master spoken language which would be of greater use to him
- pupil cannot gain true insight into grammatical rule unless he has previously mastered the spoken aspect

Some teachers therefore try to veer away from pure Indirect Method, hoping to reduce the intellectual content of their lessons and to give pupils some opportunity of speaking the language.

But Direct Method teaching cannot supply the number of active speaking contacts required for pupil to begin to 'think' in the language, so that any 'eclectic' method lying between the two poles will afford even fewer contacts.

It is also true that a second language learner needs to have some knowledge of the grammatical blocks of language to help speed up the development of his oral proficiency.
(Source: http://www.aber.ac.uk/~mflwww/seclangacq/langteach8.html)

(12) Teaching and learning strategies for use in the smart school context:

(i) Directive Strategies
Drill, practice, mastery learning, and direct instruction.

(ii) Observation Strategies
Learning by observing others performing a function or task.

(iii) Mediative Strategies
Direct assisting of students in learning how to apply knowledge to solve problems.
A combination of reasoning, coaching, and open-ended discussions.

(iv) Generative Strategies
Help students learn how to behave in appropriate situations and use their different intelligences.
Includes tools like brainstorming, synectics, lateral thinking, and creativity by design.
(v) Collaborative Strategies
Help students use interpersonal skills to accomplish tasks.
(vi) External Context Learning Strategies
Activity-based learning, hands-on sessions, seminars, workshops, and do-it-yourself programmes
(vii) Metacognitive Learning Strategies
Students learn through thinking about the learning process and how they did and how they can improve
(Source: http://www.msc.com.my/mdc/flagships/ss.asp)
CHAPTER 7: METHODS AND TECHNIQUES OF TEACHING

Overview
In this Chapter, we shall cover,

- Learning by playing
- Role-playing
- Brainstorming
- Thematic teaching
- Integreted Teaching
- Story Telling
- Facilitating Skills
- Discussion Method
- Inquiry Method
- Problem Solving (Theory of Constrain)
- Mastery Learning

Key Terms
- Learning by playing
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- Facilitating Skills
- Discussion Method
- Inquiry Method
- Problem Solving (Theory of Constrain)
- Mastery Learning

Further Reading
**Suggested Input**

1. **Learning through play**
   - Educational play may take many forms. The key role of teachers here is in modifying the natural spontaneous play of children so that it has educational value while maintaining its qualities as play. There are four kinds of educational play: *manupulative play, physical play, dramatic play and games.*
   - In manupulative play, students handle relatively small pieces of equipment such as puzzles, counting rods, or peg sets. The actions are relatively self-contained; that is there is no necessary interaction between the manupulative activities and other kinds of activities, nor is there a dramatic element to the play. For example, students can achieve the goals of manipulative play activities directly by handling the material. Students may be given a series of wooden cylinders and a case into which they fit. By comparing cylinders and attempting to fit them into the case, the students begin to learn to make size comparisons and to arrange items in a series. Manipulative play activities generally have fairly narrowly defined educational goals.
   - Physical play involves student’s large-muscle actions, such as running, jumping, or riding a tricycle. These activities help students increase their physical skills or learn to use them in new situations. Physical play can have a dramatic component, and teachers can elaborate the play either by making the physical activities more challenging or by providing social content to the play.
   - Dramatic play requires that the students pretend to act out a role, often in relationship to other students playing their roles in informal dramatic situations that may represent true-life situations. The housekeeping area (or doll corner) is the most readily observable setting for dramatic play. Here students act out the roles of family members in actions representing home situations. Teachers may set up other dramatic play situations to enable the children to play many roles.
   - Games are a different kind of play activity. They are highly structured and include specific rules to be followed. Students at the four-and five-year-old levels are beginning to move into a stage in which they can play games. Simple games or musical activities containing elements of games are quite appropriate. Students
need to be taught the strategies of game playing. Teachers should guide the games, or the students may not be mature enough to maintain rules or understand rule-appropriate behaviour.

2. Role-playing

- Is “the opportunity to explore through spontaneous improvisation and carefully guided discussion, typical group problem situations in which individuals are helped to become sensitive to the feelings of the people involved” (Shaftel & Shaftel, 1967:84, cited in Brady, 1985). So students act out their real feelings without risk of reprisals by taking the role of another person – that is thinking, feeling, and acting like another person, and indicating this through dialogue with someone similarly involved.

- Students in assuming the role of another, step outside their accustomed role, giving up their usual form of behaviour in exchange for the role and behaviour of another person. Thus, students are forced to be less egocentric. As a result, they achieve insights into themselves and others.

- The aims of role-playing used in teaching are:
  - To develop sensitivity to other people’s feelings
  - To help students clarify their values which assists decision-making
  - To help students understand that behaviour is caused
  - To enable students to release tensions and feelings
  - To teach students problem-solving behaviour
  - To develop in students the habit of considering the consequences of behaviour
  - To assist the teacher in diagnosing student needs
  - To develop group cohesiveness
  - To learn social behaviour
  - To teach the child the feeling-thing-acting

- Example: In a unit on the family, students may be given the following exercise: You have to take your little brother home from school each Monday, and the other boys call you “Pak Cik”. You think your little brother is old enough to get home by himself, but your father says he is not. Role-play a talk between your father and yourself.

- Preparation for role-play

Role-play is a method which requires minimal preparation. Its effectiveness is a function of the skills of teacher direction, and beyond the selection of a role-play
situation, little advance preparation can be done. The following suggestions may help the teacher in planning:

(i) Select a situation for role-play which is student-centred and which is likely to be both involving and contentious, for example, solution suggested by students to moral dilemma stories. If this method is used, teachers should make sure that the moral dilemma selected:

- Presents a real conflict for the central character
- Includes more than one moral issue for discussion
- Produces disagreement among students as to a suitable solution

(ii) Ensure that the fictional moral dilemma or role-play is not too “close” to any reality in a student’s life. The teacher may decide that similar but not identical situations can be role-played. The teacher may also decide to change names in the role-play situation, if they have pointed parallels with those of students in the class.

(iii) Decide on the manner of “briefing” the player. Briefing may involve either questioning the players and class as to the nature of the role, or an uninterrupted statement by the teacher.

(iv) Determine whether all role-plays will be conducted in the full-class context, or whether small groups will be responsible for their own selection of players and briefing.

3. Brainstorming

- Where two or more individuals suggest as many solutions to a problem as they can think of, no matter how seemingly ridiculous. Only after all ideas are out is any evaluated as a possible solution. The idea of brainstorming is to avoid focussing on one solution too early and perhaps ignoring better ways to proceed.

- Osborn (1963, cited in Bradley, 1985:201) classified nine types of questions that can be used in brainstorming for ideas:

<table>
<thead>
<tr>
<th>Question Types</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>New uses:</td>
<td>Could it be used in another way?</td>
</tr>
<tr>
<td>Adaptations:</td>
<td>Is this similar to anything else?</td>
</tr>
<tr>
<td>Modifications:</td>
<td>What changes could be made?</td>
</tr>
<tr>
<td>Magnifications:</td>
<td>Could you make it better by adding something?</td>
</tr>
<tr>
<td>Minifications:</td>
<td>Could it be pruned or streamlined?</td>
</tr>
<tr>
<td>Substitutions:</td>
<td>Could we put something in its place?</td>
</tr>
<tr>
<td>Rearrangements:</td>
<td>Might it be better if we changed the order?</td>
</tr>
<tr>
<td>Reversals:</td>
<td>Might it be better if we turned it round or started from the other end?</td>
</tr>
</tbody>
</table>

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Combinations: Might it be better if we used both approaches together?

4. Thematic Teaching

- Instead of being based solely on core ideas related to particular subject matters, the thematic units are interdisciplinary, with learning activities emanating from the theme (Guillanume, 2000). Examples of themes include, for young students, homes, and for older students, discoveries, or interdependence. Concepts from different subjects areas are surfaced and linked through the use of the theme. Also thematic units usually include choices for students, allowing students to select at least some of the individual and small group discussion can develop a sense of ownership and community as students learn together and share their results. The following steps are suggested for planning thematic units:

a. Select a theme: The theme needs to be broad enough to encompass information from many subjects areas but not so broad that meaningful connections are lost. Keep your larger goals and students’ interest in mind.

b. Create a planning web: Brainstorm to create a chart – a semantic map – that explores that many instances in which that theme arises.
Notice that the above web does not include mention of traditional subject areas such as Mathematics or social studies; it should break away from traditional compartmentalized thinking. Webbing with colleague leads to more divergent thinking.

c. **Select resources:** As you plan, aim to provide a wealth of resources. Including the arts, literature, other print sources, tangible materials, technology and community resources.

d. **Plan activities:** Choose or create activities that address the theme, utilize rich resources and encourage students’ progress toward learning goals. Remember to include opportunities for students to choose their learning activities.

5. **Integrated teaching method:**
• Integrated teaching method is a way of organizing the instructional program so that the many disparate subjects and skills of the curriculum can be related to one another. The conventional subjects and skills are taught and functionally applied in the context of some selected topic, activity, project, or theme. This teaching method makes the topic of study the integrating centre of the curriculum for the purpose of providing unity to the child’s school experience. The integrated curriculum mode is closely similar to unit teaching. This method has a strong kinship with the inquiry method, is highly individualized, calls for a loosely structural learning environment, and is problem-solving in its orientation. When the teacher decides to use the integrated curriculum method, the entire classroom life will need to be planned in accordance with the philosophy that undergirds this method of teaching.

• The purpose of integrated teaching method:
  o To teach students to become self-reliant, independent problem-solvers
  o To help students to understand and appreciate the extent to which school learning is interrelated rather than separated into a variety of discrete subjects and skills
  o To stress the process of learning as opposed to specific subject matter and skills
  o To capitalize on the social values of learning, students are encouraged to work with others in cooperative learning endeavors.

• The roles of the teacher
  o Setting the stage and providing the environment within which the students can engage in learning activities in terms of their own interests, needs, capabilities, personalities, and motivations. The environment should be stress free and warm.
  o Structuring and guiding the explorations of the students but should not do so without stifling their initiative.
  o Providing a carefully selected assortment of learning materials for the students to handle, to use for construction, to manipulate, to experiment with, to explore, and to puzzle over.
  o Be a learner along with the students.

• The roles of the students
  o Involve in the learning process
  o Initial activities and assume responsibility for their own learning
o Be cooperative, work harmoniously with others on the learning activities and projects
o Ask any questions they choose, and consult whatever data sources

• Use of instructional resources. A variety of assorted learning materials are used
  o Conventional materials: books, film, pictures, map, etc.
  o Other materials: electric motors, branding irons, a computer, science equipment, carpenters' tools, historical artifacts, construction kits, art supplies, music instruments, and audiovisual material.
  o Anything that allows children to construct, explore, and manipulate might be good to use.


6. Story telling:

• Storytelling activities can promote interest in any area of the curriculum. Students, teachers and guests tell the group about an event, fact or fiction as opposed to reading it aloud to students. Because of the informal nature of storytelling, the storyteller is able to add lib and adapt his/her story to the students as he/she sees it fit. Storytelling develops an appreciation for and enjoyment of literature, provides with enrichment of language, vicarious experiences, develops students' listening skills and motivates student to read.

• Steps in storytelling
  o Students should know parts of the story. Most students will know this when they start school but they may not know the terminology. The teacher will decide whether to learn those terminologies or not.
  o The origin of storytelling is an interesting introduction to storytelling activities
  o Regardless of who the storyteller is, a comfortable atmosphere is essential. If possible, clear an area so students can sit on the floor in a circle with the storyteller.
  o If the teacher is the storyteller, he/she must consider the following:
    ▪ Make sure that the storyteller is easily heard by all students
    ▪ Ensure that all the students can see the storyteller, especially the face and hands
    ▪ Speak loudly and clearly with expression in the voice
• If the storyteller does not wish to be interrupted, warn students to save their questions/comments until the story is completed
• Make sure the storyteller has the undivided attention of every student before beginning.
  o If students are going to be given the opportunity to fill the storyteller’s role, they should
    • Be given information on the parts and sequence of the story
    • Given a chance to share short stories/amusing anecdotes in an informal setting as a precursor to a more comprehensive storytelling experience.
  o The teacher should consider using props such as the flannel board or puppets to enrich the story telling experience
  o Students should be given the opportunity to write down their own stories and share them with the class
  o The teacher should read the story many times to himself/herself before telling it but the story should not be memorized
  o The storyteller should keep eye contact with the audience and speak directly to the listeners.

7. Facilitating Skills:

• A facilitator can assist students to learn by providing support in term of their study skills and motivation. He/she can encourage communication among students, answer their questions, helping the students with their assignments and determining their progress.
  o In term of study skills, the facilitator can give general advice to the students on learning, on study and time management skills; plan a study timetable for students for a particular learning event; develop individual plans for the students.
  o In term of motivation, the facilitator can make the students feel at ease when communicating with him/her; reminding students they are not studying alone, encourage students to communicate with and support one another; encourage students fo form study groups find information outside the learning materials, using Web site, discussion forum, e-mail; and reminding students of the rewards of completing the learning event.
In term of communication, the facilitator may encourage students to answer one another’s questions especially during the discussion session or class forum.

During questioning time, the facilitator should listen to the students; don’t treat any of their comments as superficial. He/she should answer students’ questions in a reasonable amount of time and relate the content of the learning event to the student’s own experiences.

In term of assignment, the facilitator may assist students with their assignments; always give constructive comments on their assignments in order to build students’ confidence.

The facilitator may record students’ progress, monitor their learning to make sure that they progress at an adequate rate. If they don’t progress adequately, he/she should contact the students to find out the reason. He/she should also adjust individual learning programme or experience so that the students are able to progress according to their ability. Finally, the facilitator may help students prepare for any final assessment.

8. Discussion method:

- It may be teacher-led, student-led, or leaderless. The class setting may range from normal to informal, with the teacher having a dominant to a nondominant role. In this section, some guidelines for discussions are first presented. Then specific consideration is given to whole-class discussions, panels and debates, and small groups discussions.

- If used properly, discussions can stimulate critical thinking and encourage average and less able students to become engaged in the learning process. If used incorrectly, discussions may result in individual students responding to teacher-directed lower-order questions or may merely be restating ideas espoused by the teacher. If used in this manner, discussions can become boring and not stimulate student thinking.

- Discussions can be used to address both cognitive and affective objectives. In the cognitive domain, discussions can encourage students to analyze ideas and facts from the lessons and to discover interrelationships between previously taught content. In the affective domain, discussions encourage students to examine their opinions, to interact with and evaluate other students’ ideas, and to develop good listening skills. Whatever the objective, discussions must be well-planned and key questions formulated prior to the lesson.
• Guides lines for planning and implementing effective discussions
  o Consider the goals of the discussion
  o Consider the experience and development of the students
  o Study the issues
  o Orient the students to the objective of the discussion
  o Provide a supportive classroom environment
  o Provide new or more accurate information when it my be necessary
  o Review, summarize or weave opinions and facts into a meaningful relationship
  o Use humour.

• The guidelines above apply to each of the group and discussion methods: whole-class discussion, panels and debates, and small group discussions.

(i) **Whole-class discussion**: require mush skill and practice. When conducting a whole-class discussion, the teacher must be able to clearly focus the discussion, keep it on track by refocusing the discussion, and encourage all participants to listen carefully to all points of view. Teacher always direct whole-class discussions. Before beginning a whole-class discussion, it is important to make sure that students have an adequate knowledge base. If not, there won’t be any discussion going on in the class.

(ii) **Panels and debates**: Panels, symposiums, and debates all involve a group of students becoming informed about a particular topic, and then the students present this information and interact in discussion. Panels and debates are designed to help students understand several points of view related to a topic or issue. They combine prepared activities and statements with the give-and-take of discussions. They are useful in large class activities when more informal whole-class or small group discussions would not be feasible.

- **A panel** is a fairly informal setting in which four to six participants with a chairperson discuss a topic among themselves while the rest of the class listen. Later, there is a give-and-take discussion with the class. Each participant makes an opening statement. A round table in an informal version of the panel. A *symposium* is
very similar to a panel, but it involves a more formal presentation of information by each panel member. A *debate* is a formal discussion approach consisting of set speeches by participants of two opposing teams and a rebuttal by each participant. Panels and debates are conducted for the benefit of the whole class which becomes involved through question and answer sessions upon the panel’s completion.

Small-group discussion: can meet the goal of increased student participation by allowing more students to become involved in the discussion. Groups of four to five students are most appropriate for small-group work. In addition to promoting the higher-level thinking skills, small-group discussions include the development of communication skills, leadership ability, debate, and compromise. Students involved in small-group discussions often get off-task easily. Careful organization can help these discussions run more smoothly. There are at least four things teachers can do to effectively conduct small group discussions. First, teachers should carefully monitor the activity by moving around the room and checking with each group to make sure it remains focused on the discussion’s objectives. Second, teachers should make sure that students have enough background knowledge to effectively contribute to the discussions. Thus, small-group discussions should follow a lesson focusing on content and should build on topics previously developed. Third, teachers should plan for relatively short discussions. Fourth, students should be given precise directions for the activity. At the conclusion of the small-group activity, each group should report its results to the class. This can be done by a written report or having a representative from the group give an oral report to the class.

9. Inquiry method:

- Inquiry, like discovery method, allows students to become involved in the process of discovery by enabling them to collect data and test hypotheses. As such, these methods are inductive in nature. Teachers guide students as they discover new meanings, practice the skills, and undergo the experiences that will shape
their learning. Generally, inquiry method is student-centred and less explicit than other methods.

- The inquiry method is guided discovery. One of the strengths of this method is that both the lesson content and the process of investigation are taught at the same time. The steps of inquiry essentially follow John Dewey’s model of reflecting thinking. The common steps include (a) identifying and clarifying a problem, (b) form hypotheses, (c) collect data, (d) analyze and interpret the data to test the hypotheses, and (e) draw conclusions.
- Using the process of inquiry provides opportunities for students to learn and practice skills associated with critical thinking.
- Several approaches of inquiry may be used. (a) During guided inquiry, the teacher provides the data and the students are questioned in order to help them inductively arrive at an answer, conclusion, generalization, or solution. (b) Unguided or open-ended inquiry approaches have the students take more responsibility for examining the data, objects or events; these investigations are commonly done individually. Specifically, guided and unguided inquiry methods may involve discussion and question sessions, guided or controlled discussions, some study approaches, projects and research projects.

10. Demonstration method:

- A demonstration is similar to the lecture in its direct communication of information form teacher to students. It also involves a visual approach to examine processes, information, and ideas. The demonstration allows for students to observe real things and how they work. There may be pure demonstrations, demonstrations with commentary, or participative demonstrations with students. In many cases, a teacher demonstrates a certain action or activity prior to having the students perform the activity individually. For many students, this teacher demonstration provides a model of the actions and established expectations.
- Demonstrations can be used to illustrate points or procedures efficiently, stimulate interest in a particular topic, provide a model for teaching skills, and provide a change of pace. To carry out effective demonstrations, teachers should carefully plan the demonstration, practice the demonstration, develop outline to guide the demonstration, make sure everyone can see the demonstration, introduce the demonstration to focus attention, ask and encourage questions, and plan a follow-up to the demonstration.
11. Problem solving method (Theory of Constraint):

- Theory of Constraint (TOC) can be used in standalone situations, or together they form a coherent problem-solving and change management system. Their generic purpose is to translate intuition to a format that can be discussed rationally, questioned without offense, and modified to more fully reflect the understanding of the situation. They are used for the construction of common sense solutions to problems as well as to facilitate communication, collaboration, and consensus among those that must be involved in its resolution.

- **The context**

  To put any set of tools in context, they must generally support one of three generic objectives that groups are brought together to accomplish. These three objectives are to determine:

  - **What to change**: Situation assessment, description of "current reality," and identification of the core problem or conflict and assumptions that sustain it – diagnosis
  - **To what to change to**: Verbalization of vision/solution and description of strategy to attain the desired state -- prescription, decision making, and solution development
  - **How to make the change happen**: Development of detailed plans and tactics that will clarify what needs to happen and synchronize the efforts of the group in the implementation of the strategy -- planning, team-building
  - **Any time a problem is encountered**, its solution usually relates to one or more of the three purpose above.

  Before I get into the specific tools and how they relate to these three purposes, I should really describe the two overarching "meta-tools" that are at the core of the tools -- **SUFFICIENCY LOGIC** and **NECESSITY LOGIC**.

  Sufficiency logic consists of "If..., then..., because..." descriptions of why situations exist or why we believe actions will result in particular outcomes. Linkages of sufficiency logic are also frequently expressed as "If..., and if..., and if..., then..." as in the case when it take three preexisting conditions (the "ifs") to result in the outcome (the "then").

  Necessity logic often takes the form of "In order to..., we must...," describing requirements or prerequisites associated with desired outcomes. These...
requirements may not be sufficient in and of themselves to result in the outcome, but their existence is seen as necessary for it. Linkages based on necessity logic can often be augmented with a "because..." factor as well, which is a very powerful mechanism for surfacing beliefs or assumptions that underlie why we feel we must have A in order to have B.

The Thinking Processes, based on these two logical constructs, get their power from the fact that the human mind seems to be practically "hard-wired" with an innate understanding of when the "if-thens" or the "in-order-to, we-musts" make sense or not, lending themselves to an ease of communication, scrutiny, and revision. They also benefit from graphical formats and presentation, so the mind can readily take in not only the words of the various entities, but also the spatial relationships implied by connecting arrows.

The tools serve to communicate or verbalize the intuition of the participants in a way that lends itself to collaboration and dialogue and results in a description of the "common sense" of the participants.

- **The Tool**
  - **Tool 1 -- The Evaporating Cloud**

  The Evaporating Cloud is a construct of necessity logic that takes the form:

  \[ \text{B) Requirement} \rightarrow_{\text{D)} \text{Prerequisite}} \]

  \[ \text{A) Objective} \rightarrow_{\text{C) Requirement}} \rightarrow_{\text{D') Prerequisite}} \]

  and is read:

  In order to have objective A, we must have requirement B...
  In order to have requirement B, we must have prerequisite D...
  In order to have objective A, we must have requirement C...
  In order to have requirement C, we must have prerequisite D'...
  But prerequisites D and D' are in conflict...

  One of the tenets of the Theory of Constraints, reflecting its roots in the application of the techniques associated with scientific method to those "soft sciences" like management and behavior, is that in any system that is brought together for a purpose, there is no such thing as real conflict, but only unexamined assumptions.

  The cloud allows a clear statement of the perceived dilemma and provides a route for the surfacing and scrutiny of those assumptions.

  I've written about the Evaporating Cloud a number of times in the past in this discussion list, but I'll repeat again that under every arrow (including the conflict arrow between D...
and D') lie assumptions. Brainstorming those assumptions is a matter of reading the "in order to, we must" statements, and then adding the word "because..." to it, soliciting reasons why A requires B or C requires D', or why D and D' are mutually exclusive. Once the assumptions are sufficiently spelled out, it's a matter of finding one that seems susceptible to questioning -- a chink in the armor of the conflict.

Also known as a conflict cloud, a dilemma cloud, or a conflict resolution diagram, the Evaporating Cloud provides a solvable verbalization of a conflicted situation where solvable is defined as "win-win." Probably the most multi-purpose of the Thinking Processes, the cloud is appropriate for dealing with tough personal decisions, interpersonal conflict or negotiation (think of requirements as needs and prerequisites as wants), and resolution of what I like to call "systemic conflicts" and by extension, a sort of "root conflict analysis."

(ii) Tool 2 -- The Current Reality Tree (CRT)

The CRT is a sufficiency-based logic (if..., then...) tool that is used to fully describe an existing situation. Its purpose is to understand (only to the level of detail necessary for the group to achieve consensus) how the various issues and problems they face are related to each other, to their policies, measurements, and practices and to the generic/root/core conflict identified through the process I described in the discussion of the Evaporating Cloud tool. This understanding provides the guidance for developing a solution, as understanding why X leads to an undesirable Y provides guidance for inserting new actions to either replace X or to cause it to result in a favorable Z instead.

The structure of a CRT is hard to draw in the text based format of email, but consists of connected clusters of statements associated with the situation. The connections are "if..., then..." or "if...and if...and if..., then..." cause and effect relationships. (Graphically, they are statements connected by arrows. Note that I have included similar diagrams in the descriptions of other tools -- FRT and NBR -- below.) These clusters are strung together as effects become causes of other effects. The CRT usually has at it's base a variant of a generic cloud, and higher up in the tree, most if not all of the subject matter's stake holders' symptoms/problems/issues linked in as effects stemming from stuff the root.

As we are discussing problem solving tools here, it should be mentioned that from a group participation point of view, the CRT is also thought of as a communication and clarification tool. Its construction is not really suited for a group activity. It is usually best if it is built by one person, or a very, very small group, familiar with the subject matter on their own, and then presented to the group for scrutiny and clarification. An alternative approach to using it is to have the individual members of the group build pieces of a CRT related to their area of expertise, and then use the group presentation and scrutiny to
merge the pieces into a whole. Construction of a CRT is best as an individual process, scrutiny and clarification is most effective with group effort and input. A well-built CRT will confirm that your suspect generic conflict (or a modification of it) is indeed at the root of the originally identified problems and it will serve as guidance for developing a new view of future reality (vision) to replace the current. The combination of the core/root/generic conflict (the Evaporating Cloud) and the confirmation of the CRT linking it to the particular range of issues facing the group answers the first question that groups come together to address...WHAT TO CHANGE? (iii) Tool 3 -- The Future Reality Tree (FRT) The FRT is similar to the CRT in structure, but with new proposed actions, policies, and behaviors injected into it in order to create a new vision of the future reality of the system. The power of the logical "if-then" construction is that if any one of the lower-level causes are removed or mitigated, everything that is above it is subject to change. If you can develop various "injections" as new causes, then you can, through restatements of the subsequent logic, predict and direct changes to the resultant effects. The classic example of how this sufficiency logic works is:

A CRT:

```
I have
 a fire
    ^
     /|
     / |
     /  |
     /   |
     /    |
     /     |
```
I have    I have    I have
fuel     ignition   oxygen

AN FRT:

```
I don't have
 a fire
    ^
     /|
     / |
     /  |
     /   |
     /    |
```

I have fuel    I have ignition    I don't have oxygen in contact
with the fuel

If any one of the three "ifs" of the CRT are removed or modified, the "then" may be removed from consideration as a problem. We might choose to develop a system in which fuel and sources of ignition are isolated from one another to prevent fires. Or if the problem is that a fire exists, we may choose to remove the oxygen by covering the fire with water, CO2, or a blanket. These are all possible injections. (If only all the "fire-fighting" we do were so clear cut! But maybe it can be almost so.) Even in more complex real-life issues, a careful analysis of assumptions, which in this kind of construction become more "ifs" arrowed into the "then," which become more possible sources for things to remove by the "injection" of new actions, policies, or behaviors.

If the CRT is based in a generic conflict, then the initial injection comes from the "out-of-the-5-sided-box" solution of that conflict -- the idea that stems from addressing questionable assumptions. (If the CRT was developed simply from linking the various undesirable effects (as it used to be done in the process before the discovery of the generic conflict's existence), then the core problem at the base of the CRT might be a single statement in the tree. The best way to deal with that result is to do a cloud on that statement.)

The objective of the FRT is to communicate a vision of how to change the undesirable effects found in the CRT to desirable effects. Again, like a CRT, construction is best done by individuals or very small groups, while the most effective use of group interaction (and that gains from experienced facilitation) is in scrutiny, clarification, and completion of the solution. The FRT is the first step to address the second step in problem solving, figuring out "What To Change To"

(iv) Tool 4 -- The Negative Branch Reservation (NBR)

When a proposal to solve a problem is offered by a member of a group, whether in the form of a seemingly complete FRT or in the form of a standalone idea thrown out on the table, there are frequently concerns or reservations raised on the part of other members of the group. In the lingo of the Thinking Processes, a RESERVATION exists that if we act on an injection in the Future Reality TREE, there will result a BRANCH that leads to an undesirable, NEGATIVE result. Hence, the "Negative Branch Reservation" or NBR.
The key to "trimming the negative branch" again lies in the conversion of internalized intuition into logical if-then steps that can be rationally discussed while avoiding the feeling of "constructive criticism" or more blatant "pot-shots" aimed at the proposal. The "if-thens" must link the proposed action with the suspected negative outcome. Then we can again apply assumption searches to the arrows, especially those that are merging arrows, not directly related to the initial proposal, in order to find a new injection - a new arrow that will change the outcome of concern. In the following example, it is determined that by instituting a new policy, we will be able to achieve something good for the organization.

In this simple negative branch, it's easy to see that to complete the solution, i.e., to get not only the desired good stuff, but to avoid the possible negative consequences of our action we might want to replace the lack of understanding of the policy with another action involving education and explanation of the purpose of the policy. By doing so, we avoid the possible misinterpretation and subsequent bad stuff.

As a standalone tool, the NBR ranks right up there with the Evaporating Cloud in everyday usefulness in basic facilitation of problem avoidance. The cloud deals with conflicts and dilemmas and the NBR deals with doubts and concerns. They both aid communication so that the conflict or concern can be effectively and efficiently dealt with. In terms of group accomplishment, the NBRs brought up by group members serve to complete the solution developed in an FRT. It also provides a route to buy-in for
participants as their contribution to the solution (in the form of actions required to trim their NBRs) gives them a sense of ownership of (at least part of) the overall solution. Actually, even if starting with a single proposal, the identification and solution of NBRs could result in an FRT built on that proposal as open and unguarded discussion of concerns builds upon it.

(Some "system-thinking" aficionados may see similarities to FRTs and NBRs in causal loops. Indeed, complete CRTs and FRTs for complex systems do frequently contain loops of causality. In CRTs, these loops most often serve to perpetuate undesirable stuff. In well-designed FRTs, loops will be consciously looked for and strengthened so that they will contribute to getting more and more of the desired outcomes.)

The combination of the FRT and NBRs completes the answer to the group objective of determining TO WHAT TO CHANGE TO.

(v) Tool 5 -- The Prerequisite Tree (PRT)

OK. We have a solution defined in terms of a vision and strategy that should achieve it (the complete FRT, augmented by the results of adding injections to trim NBRs), but we also have a whole pile of stuff blocking us from doing this part or that part of the strategy. Indeed, for some of the things we've identified as injections in the FRT, we may have no idea whatsoever how to make happen.

People are great at finding excuses why something can't be done. In more politically correct language, we refer to that skill as identifying obstacles.

The Prerequisite Tree (PRT) takes advantage of people's natural propensity and ability to point out why something can't get done. The first step in building a PRT (after identifying the team's ambitious objective) is to collect all the obstacles that the group can come up with. Then each individual identifies an "intermediate objective" (IO) that would overcome or make moot the obstacle they raised. (After all, the person who comes up with an obstacle has the most intuition about what it would take to address it.) Once all the IOs are identified, the obstacles are used to sequence the IOs into a network that becomes the plan to achieve the objective. Team effort is focused appropriately, since the network points the group to start on those IOs that don't depend on others, and only when they are done, they know they can move on to the next because they've overcome an obstacle that was blocking them.

A PRT defines what needs to be done (necessity logic) in what order to accomplish the ultimate ambitious objective.

This is a painless way of identifying which "bites of the elephant" we'll gnaw on first in our attempt to consume the whole thing. As a group effort, this process benefits (as does the
solicitation of NBRs as reasons we shouldn't take a particular path of action) from the
diverse and divergent views of the group's members. The more obstacles that are raised,
the more complete the implementation plan of HOW TO MAKE THE CHANGE HAPPEN
will be, resulting in fewer surprises along the way.

(vi) Tool 6 -- The Transition Tree (TRT)
This last tool further supports the need to describe HOW TO MAKE THE CHANGE
HAPPEN. Sometimes a plan is developed by a group for other people to use.
Sometimes getting from one IO in a PRT to another requires a finer level of detail in
terms of action and results. Including the TRT here for completeness of the list of TOC
Thinking Processes, it may be a stretch to think of it as a facilitation tool, as it's really a
communication and empowerment tool, allowing the recipient of it to follow a path of
action with clear understanding of what to expect along the way and why to expect it.
It is a simple repetitive sufficiency logic construct that puts the actions/tasks in context
with the objectives. Based on simple, "if-then" links, the Transition Tree includes the
need for action, the action, the rationale for the action (why we expect the action to
provide the desired result), that desired, expected result (or intermediate objective - IO),
and then reason for the next need in a graphical format:

```
Result
 (IO)
 ^ ^^
 / | \ 
 / | \ 
Action Need Rationale
    ^^
   | |
   | |
Result Reason for
 (IO) next need
  ^^ ^
 / | 
 / | 
Action Need Rationale
```

The transition tree includes all the info you need to build a detailed action plan, assess
its ability to deliver results, and includes those results to allow development of alternative
actions...a real "results-oriented" task list that encourages "empowerment" to offer new
solutions. It sure beats a simple "Do this, then do that, then..." list of tasks that we usually
get for instructions.

- Summary -- tools and context
(i) **What to change . . .** Situation assessment, description of "current reality," and identification of the core problem or conflict and assumptions that sustain it -- diagnosis.

- **Tools:** Evaporating Cloud, Generic Cloud Process, and Current Reality Tree to link undesirable effects to root causes or conflicts that are the most efficient/effective things to attack.

(ii) **What to change to . . .** Verbalization of vision/solution and description of strategy to attain the desired state -- prescription, decision making, and solution development.

- **Tools:** Evaporating Cloud to identify an out-of-the-box starting point, Future Reality Tree to flesh out the strategy to turn undesirable effects into desirable outcomes, and the Negative Branch Reservation to complete that strategy/vision by adding things needed to avoid unintended negative consequences.

(iii) **How to make the change happen . . .** Development of detailed plans and tactics that will clarify what needs to happen and synchronize the efforts of the group in the implementation of the strategy -- planning, team-building.

- **Tools:** Prerequisite Tree to turn obstacles into an implementation plan so that ambitious outcomes can be achieved. The building of a plan as a group, based on individual input of foreseen obstacles, allows the team to become synchronized in its understanding of the task ahead of them and how their parts fit in to the whole. Transition Tree to (when necessary) get into deeper levels of detail for paths of action, relating them to expected outcomes along the way.

- In addition to this comprehensive and consistent approach to making the right change happen, the use of clouds and NBRs as the starting point for assumption checking, and even the quick-and-dirty building of PRTs for planning become second nature to those that become familiar with the tools.

(Source: [http://www.toceducationalforall.com](http://www.toceducationalforall.com))

12. **Mastery learning:**

- Mastery learning is an individualized instructional method that uses a structured curriculum divided into small sets of knowledge and skills to be learned. It is designed to make sure all students achieve the lesson’s objectives and to allow each student enough time to do so. The mastery model ensures that most
students will reach mastery level because learning time is flexible and each student receives targeted instruction, needed practice, and feedback. Mastery learning involves traditional group-based instruction and individualized remediation and enrichment.

- Teachers diagnose the abilities of students and then prescribe appropriate individualized instructional activities. Mastery learning, originally developed by Bloom (1976, cited by Burden & Byrd) emphasizes (a) flexible, structured time with the content, (b) diagnostic / prescriptive teaching, and (c) successful completion of all objectives by all students. Appropriate instruction and time are two key parts of mastery learning.

- Teachers using mastery learning organize the instruction in a precise manner, present information and skills according to the pattern, determine regularly how well each student is progressing, inform the students of the progress, help students overcome difficulties through guidance and additional instruction or practice, and provide extra enrichment for those who master the material quickly.

- Mastery learning requires extensive and careful teacher planning, organization, and diagnostic testing. Alternative assignments and activities must be available or be developed by the teacher to meet individual students’ needs.

13. Team Teaching:

- Defining team teaching can be difficult. Some teachers share only physical space; they do not plan together, nor do their class exists as a single unit. Other teachers plan together and coordinate activities and curriculum, but are never together in the same classroom at the same time. So in team teaching, the setups, the approaches, the daily schedules of those teachers can be different.

(i) Variation 1: Dividing the students / dividing the teaching time:

In this variation, a few elementary teams divide the room in half with a physical partition. Each teacher has his or her own 15 students. In such cases, the team shares the physical space but do not teach together, though issues such discipline has to be addressed by both teachers.

This arrangement does not necessarily preclude sharing students. One teaching team divides subjects, as well as, the room. Each member of this team teaches certain subjects to all the students, but 15 at a time. Each teaches her strong subjects, for example, Aini teaches Mathematics, while her partner teaches handwriting.
Some teams divide the teaching time instead of partitioning the room. For example, teacher A teaches from 7.45 am to 8.15 am and her partner from 8.15 am – 8.45 am. Each is in charge of different major curricular area each week, and whoever is in charge of the current science or social studies unit will teach from 8.45 am – 9.15 am. Structure such as these alleviated the need for team members to spend a great deal of time planning together.

(ii) Whole group/small groups/centers
In this variation, the teams use a more eclectic approach than simply divide the room or the teaching in half. Instead they divide the day into different teaching/learning situations. The day may begin with one teacher teaching a whole group lesson. Whole-group work usually involved all of the students and both teachers working on the same thing at the same time. In some cases, one teacher teaches while the other uses a different method to reinforce the same material. Others teach simultaneously, playing off each other in front of the whole group, then breaking the class into small groups.

Small-group work is often followed by students going to various centres throughout the room. The centres are often staffed by parent helpers as well as teachers.

This kind of flexible approach allows the teachers to teach all subject areas in the curriculum, but requires more planning time on the part of the teams.

(iii) Team-taught multilevel classrooms
In this variation, classes of two or three grade levels are put in one self-contained classroom. For example, Teacher A and Teacher B teach a combined year one and year two students. They make no special allowances for the two age groups. All their small groups are heterogeneous, and the group do not necessarily remain the same throughout the year. Language arts is taught using centres, four groups rotating between seat work, writing workshop, literature study, and word study in roughly 20 minutes intervals. For other subjects, such as Mathematics, the whole group work together.

(iv) Teams for special-need students
In this variation, a specialist divides his or her day among several classrooms, teams with teachers to help students with special needs, such as English as a Second Language students and remedial readers. In these cases, the teachers feel that each of them grows from the team experience. The special education
teacher (especially in the inclusive education setting) gains a better knowledge of the subject matter, and the regular classroom teacher learns how to slow down and to be more thorough in covering material.
CHAPTER 8: CONCEPTS AND PROCESS OF REFLECTION

Overview
In this Chapter, we shall cover,

- Concept and process of reflection
- Reflect using various types of tools

Key terms
- Reflection
- Tools in reflection

Further Reading

Suggested Input
1. Reflection means the process of thinking about your experiences and their implications on you. Nowadays, we are often so busy experiencing things, or getting ready to experience them, but we fail to reflect on what we have done in a manner that will ensure that we get the most from the experience. For example, many student teachers make sloppy decisions about becoming teachers. Have they ever asked a series of questions such as “Why teach?” and “What is a school?”

2. It is utmost important that a teacher awares of the importance of reflection in self-management as a professional teacher. A teacher who reflects always evaluates the outcome of his planning and strategy in teaching and learning. He tries to identify his strong and week points. He always cultivates positive attitudes towards enhancing students’ performance. The habit of reflection helps him to grow and develop as an effective, professional teacher.
3. It is important to remember that reflection is a dynamic process. It is not about being passive, staying where you are and looking back, (although time to be still may be an important part of it) but an active engagement with knowledge and experience. So, by reflecting, you are able to construct new and deeper understanding and to articulate knowledge in a more meaningful way.

4. The process of reflection will often mean that theoretical learning is challenged by reality of experience, where such things are diversity, value, resources constraints and conflicts pose questions and dilemmas. Reflection may not always give you easy answers, but will help you take those tensions seriously. This is important for professional practitioners as it enables them to begin to make sense of practice experience without ignoring the fact that there are always, beneath the practice, values, assumptions, beliefs and personal perspectives that influence both the practice itself and the way that practice is experienced.

5. One of the most commonly quoted models for understanding the process of reflection is a model developed by Boud, Keogh and Walker (1985). This model highlights that experience in learning combine behaviour, ideas and feelings and all of these aspects need to be examined in the process of reflection.

![Figure 1: The Process of Reflection](image)

6. The process has three stages:
   - returning to experience- a detailed recounting or recollection of the events
   - attending to the feelings, both positive and negative, that have been prompted by the experience
   - re-evaluating that experience in the light of these stages and the learner’s intent, and self knowledge, bringing new knowledge that has been gained through the process.

7. There are some possible barriers to reflections:
   - assumptions about what is/ is not possible
   - assumptions about how to learn
• confidence/ self-confidence
• previous (negative) experiences
• expectations of others- expectation of self
• inadequate preparation
• environment
• lack of space/ time
• tiredness
• unclear/ ambivalent intent- do you really want to do this?

8. Developing the habits of inquiry and reflection should begin in the teacher education program. Experiences with schools, teachers, and students will give the student teacher many opportunities to reflect on what has happened. The use of journal writing, logs, diaries, reflection grids, simulations, microteaching, and videotaping can help student teacher examines teaching, learning, and the contexts in which they occur.

9. For instance, the use of a learning log can be a valuable tool. Different courses may provide different formats for learning logs, but the type of questions you can ask are:

• **EVENT/ACTIVITY**- e.g. what happened?, what was the sequence of events? What role did I play/, what tasks did I perform?
• **REFLECTION/ANALYSIS** – what have I learned from this experience/activity?, what issues or questions dis it raise for me?, what positive and negative feeling did it evoke?
• **UNDERPINNING KNOWLEDGE AND UNDERSTANDING**- what knowledge/theory helps me to understand this event/activity?, what source materials are useful to this?
• **ISSUES FOR FUTURE DEVELOPMENT AND LEARNING**- what else do I need to know to increase my understanding, how can my knowledge/ practice be improved?, are there any unresolved issues?
CHAPTER 9: TEST, MEASUREMENT AND EVALUATION

Overview:
In this chapter, we shall cover
- Basic concepts of test, measurement and evaluation
- Purposes of testing and evaluation in education
- Characteristics of testing and evaluation
- Different types of tests
- Test Blueprint
- Constructing subjective, objective items and item bank
- Awarding marks

Key Terms:
- Test
- Measurement
- Evaluation
- Validity
- Content validity
- Construct validity
- Criterion validity
- Reliability
- Usability
- Objectivity
- Administration
- Assessment
  - Formative assessment
  - Summative assessment
- Test
  - Achievement tests
  - Pencil-and-paper tests
  - Speed and endurance tests
    - cardio-vascular muscular
- Measurement
  - Norm-referenced measurement
  - Criterion-referenced measurement
- Test blueprint
• Constructing subjective and objective test
• Awarding marks: Holistic and analytic approach

Further Reading
http://www.edtech.vt.edu/edtech/id/assess/blueprint.html

Suggested Input:
1. Definitions of test, measurement and evaluation
   1.1 Test
   An instrument or systematic procedure for measuring a sample of behaviour. It is a set of questions to be answered.
   1.2 Measurement
   The process of obtaining a numerical description of the degree to which an individual possesses a particular characteristic. Using observation, rating scales, or any other device that allows us to obtain information in a quantitative form. It is assigning of numbers to the test results according to a specific rule.
   1.3 Evaluation
   • The systematic process of collecting, analysing, and interpreting information to determine the extent to which pupils are achieving instructional objectives
   • The process of delineating, obtaining and providing useful information for judging decision alternatives.
   1.4 Purposes of testing and evaluation
   (i) Instructional Decisions
   The first step in both teaching and evaluation is that of determining the learning outcomes to be expected from the classroom instruction. Only by identifying instructional objectives and stating them clearly in intended learning outcomes can a teacher provide direction to the teaching process and set the stage for ready evaluation of student learning.
   Evaluating students’ knowledge and skill at the beginning of instruction enables us to answer such questions. Information is useful in planning remedial work for students who lack the prerequisite skills, in revising our list of instructional objectives and in modifying our instructional plans to fit into the needs of the learners.
A means of monitoring learning progress and diagnosing learning difficulties. It provides feedback –corrective procedure that aids in continuously adapting instruction to group and individual needs.

Information from evaluation can be used to improve student learning by (1) clarifying the nature of the intended learning outcomes; (2) providing short term goals to work towards;(3) providing feedback concerning learning progress;(4) providing information for overcoming learning difficulties and for selecting future learning experiences.

It helps increasing the motivation of the students to study and this facilitates learning.

(ii) Guidance Decisions
Students need to be guided in their vocational choice, in their educational program and in their personal problems. Students should have accurate self-concepts in order to make sound decisions. Tests on aptitude and achievement, and interest and personality inventories provide students with data about significant characteristics and help them develop realistic self concepts. The classroom teacher can provide information concerning his mastery of subject matter.

(iii) Administrative Decisions
Selection, classification and placement decisions
Selection of students into a particular program or treatment. In classification, one decides the type of program to enroll while in placement, one decides the level of treatment such as no-credit English, the regular program or the honors program. Administrator depends on the teacher to provide the data and to make decisions selection, classification and placement of students into programs.

(iv) Research Decisions
Research decisions cut across the three preceding types of decisions. The above decisions may all be based on research. Research decisions are being made whenever information is gathered as a prelude to decision-making. Often research is not directed towards the making of one specific decision but is intended instead to enlighten a whole range of possible future decisions.

2. Characteristics of Test
2.1 Validity
a. Definition of validity: it refers to the appropriateness of the interpretations made from test scores and other evaluation results, with regard to a particular use. The extent to which certain inferences can be made from test scores or other
measurement.

One always questions “Does the test measure what it purports to measure?”

b. Nature of validity

- Refers to the appropriateness of the interpretation of the results of a test or evaluation instrument for a given group of individuals, not to the instrument itself.
- A matter of degree. It is best considered in terms of categories that specify degree, such as high validity, moderate validity and low validity.
- Specific to some particular use or interpretation. No test is valid for all purposes. For example, the results of an arithmetic test may have a high degree of validity for indicating computational skill, a low degree of validity for indicating arithmetical reasoning, a moderate degree of validity for predicting success in art or music.

Approaches to test validation

(i) Content Validity:

A process of determining the extent to which a set of test tasks provides a relevant and representative sample of the domain of tasks about which interpretation of test scores are made.

In a classroom testing, the domains of achievement tasks are determined by the instruction, and test development involves (1) clearly specifying the domain of instructionally relevant tasks to be measured and (2) constructing or selecting a representative set of test tasks.

To obtain a valid measure of learning outcomes, we proceed from the instruction (what has been taught) to the achievement domain (what is to be measured) and finally to the test itself (a representative sample of relevant tasks).

Content validity takes place during test development. It is a matter of preparing detailed test specifications and then constructing a test that meets these specifications.

(ii) Construct Validity

Defined as the process of determining the extent to which test performance can be interpreted in terms of one or more psychological constructs.

It is the degree to which one can infer certain constructs in a psychological theory from the test scores. Construct validity is important for tests purportedly measuring such characteristics(constructs) as intelligence, motivation, assertiveness etc.

If one wishes to construct a paper-pencil-test to measure creativity. Once constructed, the test would be considered to have construct validity to the degree that the test scores are related to the judgments made from observing behaviour identified by the psychological theory as creative.
(iii) Criterion Validity

- the process of determining the extent to which test performance is related to some other valued measure of performance.
- Pertains to the empirical technique of studying the relationship between the test scores or other measures and some independent external measures (criteria).
- In studying criterion validity, the conceptual and operational aspects of the criterion must be examined closely. Example, if we wish to determine the degree to which scores on a certain aptitude test predict ‘success in school’. 'Success in school' is then the criterion. Educators have used grade point average as the operational definition of the school success. If the test score did not correlate well with the ratings, we would not know for sure whether the test did not predict success.
- It is important to have a good measure of the criterion. This measure must be relevant, reliable and free from bias.

Factors Influencing Validity

Factors in the test itself:
- unclear directions on how the students respond to the items
- reading vocabulary and sentence structure too difficult for the students taking the test will result in the test measuring reading comprehension and aspects of intelligence, which will distort the meaning of the test results
- inappropriate level of difficulty of the test items
- poorly constructed test items
- ambiguity in statements in the test items contribute to misinterpretation and confusion
- test items inappropriate for the outcomes being measured
- inadequate time limits
- test too short
- improper arrangement of items
- identifiable pattern of answers

Factors in administration and scoring
- insufficient time to complete the test
- unfair aid to individual students who ask for help
- cheating during examination
- unreliable scoring of essay answers tend to lower validity
Factors in pupils’ response

- invalid test interpretations are caused by personal factors influencing the student’s response to the test situation
- student’s emotional disturbances that interfere with test performance
- test anxiety
- a consistent tendency to follow a certain pattern in responding to test items (response set)

2.2 Reliability

Definition:

- the consistency of measurement- that is how consistent test scores or other evaluation results are from one measurement to another.

Nature of reliability

- reliability refers to the results obtained with an evaluation instrument and not to the instrument itself. It is appropriate to speak of the reliability of the ‘test scores’ or the ‘measurement’ than of the ‘test’ or the ‘instrument ‘
- an estimate of reliability always refers to a particular consistency. Test scores are reliable over different periods of time, over different sample of questions, over different raters etc.
- reliability is a necessary but not a sufficient condition for validity. A test that produces totally inconsistent results cannot possibly valid information about the performance being measured. On the other hand, highly consistent test results may be measuring the wrong thing or may be used in inappropriate ways.
- Reliability is primarily statistical. The test must be administer, one or more times, to an appropriate group of persons and the consistency of the results determined

Methods of estimating reliability:

- test-retest
- equivalent forms method
- split half method
- Kuder-Richardson method

Factors influencing reliability

- length of test. The longer the test the higher the reliability. This id because a
longer test will provide a more adequate sample of the behaviour being measured, and the scores are apt to be less distorted by chance factors such as guessing. A longer test tends to lessen the influence of chance factors such as guessing. In constructing tests, it is important to keep in mind the influence of test length. If short tests are necessary because of time limit or students’ age, then strive for more frequent testing

- Spread of scores. The larger the spread of scores, the higher the estimate of reliability will be.
- Difficulty of test. Norm referenced tests that are too easy or too difficult for the group members taking it will tend to produce scores of low reliability. This is because both easy and difficult tests result in a restricted spread of scores. For easy test, the scores are close together at the top end of the scale. For difficult test, the scores are grouped together at the bottom end of the scale. For both, the differences among individuals are small and tend to be unreliable. Classroom tests designed to measure differences among students should be constructed that the average score is 50% correct and that the scores range from near zero to near perfect.
- Objectivity of test refers to the degree to which equally competent scores obtain the same results. Test items that are objective type and the resulting scores are not influenced by the scorers’ judgement or opinion. For classroom tests constructed by teachers, however, objectivity plays an important role. In essay testing, it depends on the scorer and inconsistent scorer will affect the reliability of the measures.

2.3 Usability

- Ease of administration. Clear and simple directions, timing of test must be considered.
- Time required for administration. If we want reliable measures in the areas covered, we need to increase testing time as reliability is directly related to the test length.
- Ease of interpretation. The success or failure of a testing program is determined by the use made of the test results. If they are interpreted correctly and applied effectively, they will contribute to more intelligent educational decisions. On the other hand, if the test results are misinterpreted, they will be of little value and may be harmful to some individual or group.
- Cost of testing.
3. Portfolio Assessment

3.1 Definition:
- A container of documents that provide evidence of someone’s knowledge, skills, and/or dispositions
- A purposeful collection of student work describing the student efforts, progress or achievement in a given areas. This collection must include student participation in selection of portfolio content, the guidelines for selection, the criteria for judging merit, and evidence of student self reflection
- A means for collecting students’ effort, progress and achievements in one or more areas

3.2 Portfolio Assessment:
- A multi-dimensional system which gives a complete picture on the ability and development of the students.
- It is a multi-dimensional process which enables the collection of evidences to explain the student’s development, effort and progress in a period of time. The collection should contain evidences on the student’s active participation in the process of completing th portfolio.

3.3 Purposes of Portfolio Assessment
- It helps document learning, growth and development over time
- It promotes self-analysis and critical reflection in ways that help unpack the complexities of teaching
- It includes evidence related to the themes of learning, teaching, curriculum and content
- It include a baseline of information on student knowledge prior to instruction, documentation of learning gains and reflections

3.4 Characteristics of Portfolio Assessment
- It is a collection of student’s work
- It is created by a process of selection from the whole body of students’ work
- It includes students’ self-reflection on their learning
- It entails the evaluation of students’ work by both teachers and students
- It communicates something about students, their learning and the context in which students have worked.

3.5 Key ways to assess with portfolios
- Have the student build a collection of a variety of types of writing written for various purposes and provide time for student to critique them
- Give the student regular opportunities to keep track for the collection and its relationships to texts read in a comprehensive log
Help the student learn to organize the collection in categories and subcategories that are meaningful and interesting to him or her.

Emphasizes to the student that the primary purpose of the portfolio is to use in becoming a self assessor who analyses and is aware of his or her development.

Assess both product and process to identify student strengths and needs.

Look at different dimensions in assessing portfolios: volume, student attitude and interests and individualistic signs of progress.

Developed and perfect one’s portfolio assessment abilities by identifying and understanding an increasingly meaningful set of indicators that show in portfolio progress, talent and student instructional needs.

4. **Assessment:**

Assessment is a general term that includes the full range of procedures used to gain information about student learning (observations, ratings of performances or projects, paper-and-pencil tests);

4.1 **Formative assessment**

- upgraded testing used before or during instruction to monitor learning progress, to aid in planning and diagnosis (to help identify areas that need work);
- its purpose is to provide continuous feedback to both the student and teacher concerning learning successes and failures;
- feedback to students provides reinforcement of successful learning and identifies the specific learning errors that are in need of correction;
- feedback to the teacher provides information for modifying instruction and for prescribing group and individual work;
- uses specially prepared tests for each segment of instruction (e.g. unit, chapter);
- often students are given a formative test prior to instruction, a pretest; this helps teachers determine what students already know;
- sometimes a test is given to see what areas of weakness remain when instruction has been partially completed (a diagnostic test);
- tests and other types of assessment used for formative assessment are most frequently teacher-made, but customized tests made available by publishers of textbooks and other instructional materials also can serve this function;
- observational techniques are also useful in monitoring student progress and identifying learning errors.

4.2 **Summative assessment**

- comes at the end of a course (or unit) of instruction;
designed to determine the extent to which the instructional goals have been achieved and is used primarily for assigning course grades or for certifying student mastery of intended learning outcomes;

- techniques used include teacher-made achievement tests, ratings on various types of performance (e.g. laboratory, oral report), and assessments of products (e.g. drawings, research reports);
- its main purpose is grading or the certification of student achievement, but it also provides information for judging the appropriateness of the course objectives and the effectiveness of the instruction.

5. Test

Test is a particular type of assessment that typically consists of a set of questions administered during a fixed period of time under reasonably comparable conditions for all students;

(i) Achievement tests

- standardized tests measuring how much a student has learned in specific content areas such as reading, comprehension, number operations, science, mathematics, and logical reasoning;
- Gronlund (1982) lists six basic principles of achievement testing:
  - achievement tests should measure clearly defined learning objectives that are in harmony with instructional objectives;
  - achievement tests should measure a representative sample of the learning tasks included in the instruction;
  - achievement tests should include the types of test items that are most appropriate for measuring the desired learning outcomes;
  - achievement tests should fit the particular uses that will be made of the results;
  - achievement tests should be as reliable as possible and should be interpreted with caution;
  - achievement tests should improve learning.

(ii) Pencil-and-paper tests

- students are presented with questions to answer, topics to address, or problems to solve, and they must write their responses on paper;
- several issues should be addressed:
  - are we tying to assess lower-level or higher-level skills?
  - Are recognition tasks or recall tasks more appropriate?
  - Should students have access to reference materials
6. Measurement:
Measurement is evaluation put in quantitative terms – the description of an event or characteristic in numbers; measurement tells how much, how often, or how well by providing scores, ranks or ratings.

(i) Norm-referenced measurement
- the other people who have taken the test provide the norms (the typical levels of performance for a particular group) for determining the meaning of a given individual’s score;
- by comparing the individual’s raw score (the actual number correct) to the norm, we can determine if the score is above, below, or around the average for that group;
- the test items tend to cover many different abilities rather than assess a limited number of specific objectives;
- norm-referenced tests are especially useful when you are
  - measuring general ability in certain areas, such as English, algebra, etc;
  - assessing the range of abilities in a large group;
  - selecting top candidates where only a few openings are available;
- norm-referenced tests has its limitations; the results do not tell you whether students are ready to move on to more advanced material;
- norm-referenced tests are also not particularly appropriate for measuring affective and psychomotor objectives, e.g. attitudes and values are personal, therefore, comparisons among individuals are not really appropriate; to measure psychomotor learning, a clear description of standards is necessary to judge individuals;
- norm-referenced tests tend to encourage competition and comparisons of scores.

(ii) Criterion-referenced measurement
When test scores are compared not to those of others but to a given criterion or standard of performance;
- criterion-referenced tests may work best when you are measuring mastery of basic skills;
- determining if students have pre-requisites to start a new unit;
- assessing affective and psychomotor objectives;
- grouping students for instruction

7. Test Blueprint
A detailed, written plan for a test that typically includes descriptions of the test’s purpose and target audience; the content or performance areas it will cover; the types of items and number to be written for each content or performance area, their scoring, and other
characteristics; the test administration method; and desired psychometric characteristics of the items and the test. It is also called test plans.

- Steps in formulating test blueprint

The test blueprint should list your goals and objectives in the left-hand columns, and the outcome behaviors you are using across the top row. In the example below, goal one and its two objectives represent "knowledge" behaviors or outcomes. The task, then, is to identify assessment items that help us measure those outcomes. We have selected supplied response, matching, and true/false questions. Each of these item types is useful for measuring lower-order student "knowledge." Since goal one seeks lower-order outcomes, we weight these questions lower than goals three through four which represent higher-order outcomes. Continuing with the example, goal four represents an "evaluation" behavior or outcome. We select the interpretive exercise as an appropriate assessment type to measure these higher-order student abilities.

**Example of a test blueprint:**

<table>
<thead>
<tr>
<th>Goals</th>
<th>Objectives</th>
<th>Items Selected to Assess</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1: The students will know...</td>
<td>Objective 1-1: Name...</td>
<td>supplied response</td>
<td>1</td>
</tr>
<tr>
<td>Goal 2: The students will use...</td>
<td>Objective 2-1: Translate...</td>
<td>matching, true/false</td>
<td>1</td>
</tr>
<tr>
<td>Goal 3: The students will create...</td>
<td>Objective 3-1: Produce...</td>
<td>supplied response</td>
<td>2</td>
</tr>
<tr>
<td>Goal 4: The students will rate...</td>
<td>Objective 4-1: Assess...</td>
<td>performance assessment</td>
<td>3</td>
</tr>
</tbody>
</table>

(Source: http://www.edtech.vt.edu/edtech/id/assess/blueprint.html)

8. **Constructing subjective, objective items and item bank**

8.1 Guidelines for Constructing Subjective Tests

- Make questions precise. In other words, say "Explain the differences between subjective and objective tests" as opposed to "Discuss subjective and objective testing".
• Preferably ask questions requiring reasoning or knowledge application as opposed to those requiring factual recall. Ask, "What was the practical effect of the decision to make this a mutual rather than a stock company?" not, "Name three characteristics of a mutual as contrasted with a stock company."
• Indicate clearly how fully you want a question answered and its grade value in relation to the overall test. For example, the following notation might follow a question, "50 words or less" "10 points."
• Check questions carefully for clear wording. Do not say, "How would you determine that your car's engine failure is due to a faulty ignition?" if you really mean, "What is the recommended way to determine...etc?" The two are not necessarily the same!
• Break questions requiring long answers into several so that each can be answered briefly.
• Before grading papers, write out accurate answers, expressing what an answer must include in order to gain maximum credit.
• Grade one question on each paper rather than the entire paper at once. It is also advisable that after you have graded all the papers on one question, you look back at the first three or four you graded. You may end up changing these grades after comparison.

8.2 Guidelines for Constructing Objective Tests
There are many types of objective tests including multiple-choice and true or false. Multiple-choice tests tend to be the more popular and will be discussed here.

Content
(i) Do ask questions that require more than knowledge of facts. For example, a question might require selection of the best answer when all of the options contain elements of correctness. Such questions tend to be more difficult and discriminating than questions that merely ask for a fact. Justifying the "bestness" of the keyed option may be as challenging to the instructor as the item was to the students, but, after all, isn't challenging students and responding to their challenges a big part of what being a teacher is all about?
(ii) Don't offer superfluous information as an introduction to a question, for example, "The presence and association of the male seems to have profound effects on female physiology in domestic animals. Research has shown that in cattle presence of a bull has the following effect:" This approach probably represents an unconscious effort to continue teaching while testing and is not likely to be appreciated by the students, who would prefer direct questions and less to read. The stem just quoted could be condensed
to "Research has shown that the presence of a bull has which of the following effects on cows?" (17 words versus 30).

Structure

(iii) Don't ask a question that begins, "Which of the following is true [or false]" followed by a collection of unrelated options. Each test question should focus on some specific aspect of the course. Therefore, it's OK to use items that begin, "Which of the following is true [or false] concerning X?" followed by options all pertaining to X. However, this construction should be used sparingly if there is a tendency to resort to trivial reasons for falseness or an opposite tendency to offer options that are too obviously true. A few true-false questions (in among the multiple-choice questions) may forestall these problems. The options would be: "1) True 2) False".

(iv) Don't use items like the following

What is (are) the capital(s) of Bolivia?
A. La Paz
1) A only
2) B only
3) C only

(Research on this item type has consistently shown it to be easier and less discriminating than items with distinct options. In the example above, one only needs to remember that Bolivia has two capitals to be assured of answering correctly. This problem can be alleviated by offering all possible combinations of the three basic options, namely:

1) A only, 2) B only, 3) C only, 4) A and B, 5) A and C, 6) B and C, 7) A, B, and C, 8) None of the above.

However, due to its complexity, initial use of this adaptation should be limited. )

Options

(v) Do ask questions with varying numbers of options. There is no psychometric advantage to having a uniform number, especially if doing so results in options that are so implausible that no one or almost no one marks them. In fact, some valid and important questions demand only two or three options, e.g., "If drug X is administered, body temperature will probably: 1) increase, 2) stay about the same, 3) decrease."

(vi) Don't put negative options following a negative stem. Empirically (or statistically) such items may appear to perform adequately, but this is probably only because brighter students who naturally tend to get higher scores are also better able to cope with the logical complexity of a double negative.
(vii) Don't use "all of the above." Recognition of one wrong option eliminates "all of the above," and recognition of two right options identifies it as the answer, even if the other options are completely unknown to the student. Probably some instructors use items with "all of the above" as yet another way of extending their teaching into the test (see 2 above). It just seems so good to have the students affirm, say, all of the major causes of some phenomenon. With this approach, "all of the above" is the answer to almost every item containing it, and the students soon figure this out.

(viii) Do ask questions with "none of the above" as the final option, especially if the answer requires computation. Its use makes the question harder and more discriminating, because the uncertain student cannot focus on a set of options that must contain the answer. Of course, "none of the above" cannot be used if the question requires selection of the best answer and should not be used following a negative stem. Also, it is important that "none of the above" should be the answer to a reasonable proportion of the questions containing it.

(ix) Don't include superfluous information in the options. The reasons given for 8 above apply. In addition, as another manifestation of the desire to teach while testing, the additional information is likely to appear on the correct answer: "1) W, 2) X, 3) Y, because ...., 4) Z." Students are very sensitive to this tendency and take advantage of it.

(x) Don't use specific determiners in distractors. Sometimes in a desperate effort to produce another, often unneeded, distractor (see 5 above), a statement is made incorrect by the inclusion of words like all or never, e.g., "All humans have 46 chromosomes." Students learn to classify such statements as distractors when otherwise ignorant.

(xi) Don't repeat wording from the stem in the correct option. Again, an ignorant student will take advantage of this practice.

Errors To Avoid
Most violations of the recommendations given thus far should not be classified as outright errors, but, instead, perhaps, as lapses of judgment. And, as almost all rules have exceptions, there are probably circumstances where some of 1-11 above would not hold. However, there are three not-too-common item-writing/test-preparation errors that represent nothing less than negligence. They are now mentioned to encourage careful preparation and proofreading of tests:

Typos. These are more likely to appear in distractors than in the stem and the correct answer, which get more scrutiny from the test preparer. Students easily become aware of this tendency if it is present.

Grammatical inconsistency between stem and options. Almost always, the stem and the correct answer are grammatically consistent, but distractors, often produced as
afterthoughts, may not mesh properly with the stem. Again, students quickly learn to take advantage of this foible.

Overlapping distractors. For example: "Due to budget cutbacks, the university library now subscribes to fewer than (?) periodicals. 1) 25,000 2) 20,000 3) 15,000 4) 10,000"
(Perhaps surprisingly, not all students "catch on" to items like this, but many do. Worse yet, the instructor might indicate option 2 as the correct answer.)

Finally, we consider an item-writing foible reported by Smith (1982). What option would you select among the following (stem omitted)?
1) Abraham Lincoln 3) Stephen A. Douglas
2) Robert E. Lee
The testwise but ignorant student will select Lincoln because it represents the intersection of two categories of prominent nineteenth century people, namely, presidents and men associated with the Civil War. Try this one:
1) before breakfast 3) on a full stomach
2) with meals
Three options have to do with eating, and two with the time of day. Only one relates to both. Unfortunately, some item writers consciously or unconsciously construct items of this type with the intersection invariably the correct answer.
(Source: Title: More Multiple-Choice Item Writing Do's and Don'ts. ERIC/AE Digest.)

Examples:

### Rules for Writing Multiple Choice Items

- **Complete thought in stem**
  1. **The stem should present a single, complete problem.** The stem should be paraphrased as a ____________ unless a phrase makes for easier reading by avoiding awkward sentence structure. Don't make the student read the response options to figure out what the question was asking.
    - Poor: Bats
      - A. are harmful to human beings.
      - B. use radar.
      - C. are primarily nocturnal animals.
      - D. have extra sensitive eyesight.
    - Better: Why are bats able to avoid hitting objects while flying at night?

- **State in the positive**
  2. **Items should be __________________ positively whenever possible.** If a negative is used, call attention to it by using capital letters, underline, or bold type. (Note: capital letters create an easier visual-discrimination task than bold, italics, or underline.)
    - Which of the following does NOT belong?
    - Which of these steps is INCORRECT?
3. _______________ key words.

Which of the following BEST summarizes the passage?
Describe TWO similarities between the characters.

4. Include as much of the item as possible in the stem. But ______

______________________ extraneous information or detail
that is not necessary for answering the item or for setting up the
situation -- unless the skill being measured is the ability to
discriminate between important and extraneous information.
   o Repetitive phrases
   o Units of measurement

5. Do not provide clues. State the item stem and response options
to avoid grammatical clues.

Poor: The caravan headed in an _______________ direction.
Better: Which direction did the caravan travel?

9. Awarding marks

There are two types of rubrics: holistic and analytic (see Figure 1). A holistic rubric
requires the teacher to score the overall process or product as a whole, without judging
the component parts separately (Nitko, 2001). In contrast, with an analytic rubric, the
teacher scores separate, individual parts of the product or performance first, then sums
the individual scores to obtain a total score (Moskal, 2000; Nitko, 2001).

Figure 1:
Types of scoring instruments for performance assessments
Holistic rubrics are customarily utilized when errors in some part of the process can be tolerated provided the overall quality is high (Chase, 1999). Nitko (2001) further states that use of holistic rubrics is probably more appropriate when performance tasks require students to create some sort of response and where there is no definitive correct answer. The focus of a score reported using a holistic rubric is on the overall quality, proficiency, or understanding of the specific content and skills—it involves assessment on a unidimensional level (Mertler, 2001). Use of holistic rubrics can result in a somewhat quicker scoring process than use of analytic rubrics (Nitko, 2001). This is basically due to the fact that the teacher is required to read through or otherwise examine the student product or performance only once, in order to get an "overall" sense of what the student was able to accomplish (Mertler, 2001). Since assessment of the overall performance is the key, holistic rubrics are also typically, though not exclusively, used when the purpose of the performance assessment is summative in nature. At most, only limited feedback is provided to the student as a result of scoring performance tasks in this manner. A template for holistic scoring rubrics is presented in Table 1.

<table>
<thead>
<tr>
<th>Table 1: Template for Holistic Rubrics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>5</td>
<td>Demonstrates complete understanding of the problem. All requirements of task are included in response.</td>
</tr>
<tr>
<td>4</td>
<td>Demonstrates considerable understanding of the problem. All requirements of task are included.</td>
</tr>
<tr>
<td>3</td>
<td>Demonstrates partial understanding of the problem. Most requirements of task are included.</td>
</tr>
<tr>
<td>2</td>
<td>Demonstrates little understanding of the problem. Many requirements of task are missing.</td>
</tr>
<tr>
<td>1</td>
<td>Demonstrates no understanding of the problem.</td>
</tr>
<tr>
<td>0</td>
<td>No response/task not attempted.</td>
</tr>
</tbody>
</table>

Analytic rubrics are usually preferred when a fairly focused type of response is required (Nitko, 2001); that is, for performance tasks in which there may be one or two acceptable responses and creativity is not an essential feature of the students’ responses. Furthermore, analytic rubrics result initially in several scores, followed by a summed total score—their use represents assessment on a multidimensional level (Mertler, 2001). As previously mentioned, the use of analytic rubrics can cause the scoring process to be substantially slower, mainly because assessing several different skills or characteristics individually requires a teacher to examine the product several times. Both their construction and use can be quite time-consuming. A general rule of thumb is that an individual's work should be examined a separate time for each of the specific performance tasks or scoring criteria (Mertler, 2001). However, the advantage to the use of analytic rubrics is quite substantial. The degree of feedback offered to students—and to teachers—is significant. Students receive specific feedback on their performance with respect to each of the individual scoring criteria—something that does not happen when using holistic rubrics (Nitko, 2001). It is possible to then create a "profile" of specific student strengths and weaknesses (Mertler, 2001). A template for analytic scoring rubrics is presented in Table 2.
Prior to designing a specific rubric, a teacher must decide whether the performance or product will be scored holistically or analytically (Airasian, 2000 & 2001). Regardless of which type of rubric is selected, specific performance criteria and observable indicators must be identified as an initial step to development. The decision regarding the use of a holistic or analytic approach to scoring has several possible implications. The most important of these is that teachers must consider first how they intend to use the results. If an overall, summative score is desired, a holistic scoring approach would be more desirable. In contrast, if formative feedback is the goal, an analytic scoring rubric should be used. It is important to note that one type of rubric is not inherently better than the other—you must find a format that works best for your purposes (Montgomery, 2001). Other implications include the time requirements, the nature of the task itself, and the specific performance criteria being observed.
As you saw demonstrated in the templates (Tables 1 and 2), the various levels of student performance can be defined using either quantitative (i.e., numerical) or qualitative (i.e., descriptive) labels. In some instances, teachers might want to utilize both quantitative and qualitative labels. If a rubric contains four levels of proficiency or understanding on a continuum, quantitative labels would typically range from "1" to "4." When using qualitative labels, teachers have much more flexibility, and can be more creative. A common type of qualitative scale might include the following labels: master, expert, apprentice, and novice. Nearly any type of qualitative scale will suffice, provided it "fits" with the task.

One potentially frustrating aspect of scoring student work with rubrics is the issue of somehow converting them to "grades." It is not a good idea to think of rubrics in terms of percentages (Trice, 2000). For example, if a rubric has six levels (or "points"), a score of 3 should not be equated to 50% (an "F" in most letter grading systems). The process of converting rubric scores to grades or categories is more a process of logic than it is a mathematical one. Trice (2000) suggests that in a rubric scoring system, there are typically more scores at the average and above average categories (i.e., equating to grades of "C" or better) than there are below average categories. For instance, if a rubric consisted of nine score categories, the equivalent grades and categories might look like this:

<table>
<thead>
<tr>
<th>Rubric Score</th>
<th>Grade</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>A+</td>
<td>Excellent</td>
</tr>
<tr>
<td>7</td>
<td>A</td>
<td>Excellent</td>
</tr>
<tr>
<td>6</td>
<td>B+</td>
<td>Good</td>
</tr>
<tr>
<td>5</td>
<td>B</td>
<td>Good</td>
</tr>
<tr>
<td>4</td>
<td>C+</td>
<td>Fair</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>Fair</td>
</tr>
<tr>
<td>2</td>
<td>U</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>1</td>
<td>U</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>0</td>
<td>U</td>
<td>Unsatisfactory</td>
</tr>
</tbody>
</table>

When converting rubric scores to grades (typical at the secondary level) or descriptive feedback (typical at the elementary level), it is important to remember that there is not necessarily one correct way to accomplish this. The bottom line for classroom teachers
is that they must find a system of conversion that works for them and fits comfortably into their individual system of reporting student performance.

Steps in the Design of Scoring Rubrics
A step-by-step process for designing scoring rubrics for classroom use is presented below. Information for these procedures was compiled from various sources (Airasian, 2000 & 2001; Mertler, 2001; Montgomery, 2001; Nitko, 2001; Tombari & Borich, 1999). The steps will be summarized and discussed, followed by presentations of two sample scoring rubrics.

Step 1: Re-examine the learning objectives to be addressed by the task. This allows you to match your scoring guide with your objectives and actual instruction.

Step 2: Identify specific observable attributes that you want to see (as well as those you don’t want to see) your students demonstrate in their product, process, or performance. Specify the characteristics, skills, or behaviors that you will be looking for, as well as common mistakes you do not want to see.

Step 3: Brainstorm characteristics that describe each attribute. Identify ways to describe above average, average, and below average performance for each observable attribute identified in Step 2.

Step 4a: For holistic rubrics, write thorough narrative descriptions for excellent work and poor work incorporating each attribute into the description. Describe the highest and lowest levels of performance combining the descriptors for all attributes.

Step 4b: For analytic rubrics, write thorough narrative descriptions for excellent work and poor work for each individual attribute. Describe the highest and lowest levels of performance using the descriptors for each attribute separately.

Step 5a: For holistic rubrics, complete the rubric by describing other levels on the continuum that ranges from excellent to poor work for the collective attributes. Write descriptions for all intermediate levels of performance.

Step 5b: For analytic rubrics, complete the rubric by describing other levels on the continuum that ranges from excellent to poor work for each attribute. Write descriptions for all intermediate levels of performance for each attribute separately.

Step 6: Collect samples of student work that exemplify each level. These will help you score in the future by serving as benchmarks.

Step 7: Revise the rubric, as necessary. Be prepared to reflect on the effectiveness of the rubric and revise it prior to its next implementation.

These steps involved in the design of rubrics have been summarized in Figure 2.

Figure 2: Designing Scoring Rubrics: Step-by-step procedures
Two Examples

Two sample scoring rubrics corresponding to specific performance assessment tasks are presented next. Brief discussions precede the actual rubrics. For illustrative purposes, a holistic rubric is presented for the first task and an analytic rubric for the second. It should be noted that either a holistic or an analytic rubric could have been designed for either task.

Example 1:

Subject - Mathematics

Grade Level(s) - Upper Elementary
Mr. Harris, a fourth-grade teacher, is planning a unit on the topic of data analysis, focusing primarily on the skills of estimation and interpretation of graphs. Specifically, at the end of this unit, he wants to be able to assess his students' mastery of the following instructional objectives:

- Students will properly interpret a bar graph.
- Students will accurately estimate values from within a bar graph. (step 1)

Since the purpose of his performance task is summative in nature - the results will be incorporated into the students' grades, he decides to develop a holistic rubric. He identifies the following four attributes on which to focus his rubric: estimation, mathematical computation, conclusions, and communication of explanations (steps 2 & 3). Finally, he begins drafting descriptions of the various levels of performance for the observable attributes (steps 4 & 5). The final rubric for his task appears in Table 4.

<table>
<thead>
<tr>
<th>Table 4: Math Performance Task – Scoring Rubric</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name _____________________________</td>
<td>Date ___________</td>
</tr>
<tr>
<td>Score</td>
<td>Description</td>
</tr>
<tr>
<td>4</td>
<td>Makes accurate estimations. Uses appropriate mathematical operations with no mistakes. Draws logical conclusions supported by graph. Sound explanations of thinking.</td>
</tr>
<tr>
<td>3</td>
<td>Makes good estimations. Uses appropriate mathematical operations with few mistakes. Draws logical conclusions supported by graph. Good explanations of thinking.</td>
</tr>
<tr>
<td>2</td>
<td>Attempts estimations, although many inaccurate. Uses inappropriate mathematical operations, but with no mistakes. Draws conclusions not supported by graph. Offers little explanation.</td>
</tr>
<tr>
<td>0</td>
<td>No response/task not attempted.</td>
</tr>
</tbody>
</table>

Example 2:

**Subjects - Social Studies; Probability & Statistics**

**Grade Level(s) - 9 - 12**

Mrs. Wolfe is a high school American government teacher. She is beginning a unit on the electoral process and knows from past years that her students sometimes have difficulty with the concepts of sampling and election polling. She decides to give her students a performance assessment so they can demonstrate their levels of understanding of these
concepts. The main idea that she wants to focus on is that samples (surveys) can accurately predict the viewpoints of an entire population. Specifically, she wants to be able to assess her students on the following instructional objectives:

- Students will collect data using appropriate methods.
- Students will accurately analyze and summarize their data.
- Students will effectively communicate their results. (step 1)

Since the purpose of this performance task is formative in nature, she decides to develop an analytic rubric focusing on the following attributes: sampling technique, data collection, statistical analyses, and communication of results (steps 2 & 3). She drafts descriptions of the various levels of performance for the observable attributes (steps 4 & 5). The final rubric for this task appears in Table 5.

<table>
<thead>
<tr>
<th>Table 5: Performance Task – Scoring Rubric Population Sampling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name ____________________________</td>
</tr>
<tr>
<td><strong>Sampling Technique</strong></td>
</tr>
<tr>
<td>Inappropriate sampling technique used</td>
</tr>
<tr>
<td><strong>Survey/Interview Questions</strong></td>
</tr>
<tr>
<td><strong>Statistical Analyses</strong></td>
</tr>
<tr>
<td><strong>Communication of Results</strong></td>
</tr>
</tbody>
</table>

104
Total Score = ____

CHAPTER 10: SCHOOL-BASED EVALUATION

Overview
In this Chapter, we shall cover,
• Concept of School-based Evaluation
• Characteristics of School-based Evaluation
• Aspects of evaluation
• Implementation of School-based Evaluation

Key terms
• School-based evaluation
• methodology
• planning of School-based evaluation
• implementation

Further readings

Suggested Input
1. Evaluation which is planned by the teacher at the school level is referred to as School-based Evaluation/ Penilaian Kendalian Sekolah (PKS). Teacher plays an important role in diagnosing the students’ growth and development, abilities, their academic progress and achievement. Teacher can decide the students’ learning outcome that he intends to evaluate, implement the procedure of his evaluation, record the result of his evaluation, analyze the students’ performance based on the collected data, writing of his report and taking further actions. Through the school-based evaluation, the teacher can identify the overall and integrated potential of his students from the intellectual, moral, emotion and physical aspects in line with the National Philosophy Of Education. Hence, to achieve this goal, school-based evaluation should emphasize the concept of continuous evaluation in the development of all the aspects.
2. School-based Evaluation is more in the form of formative evaluation which emphasizes the progress of a student from one level to another. The teacher can diagnose and identify the students’ progress from time to time. Thus the teacher has the opportunity to correct the students’ mistakes and weaknesses to avoid the accumulation of their learning problems since the early stage. Further more the students’ strengths and potential can be enhanced.

3. There are two types of evaluation in school:
   - Formative evaluation
   - Summative evaluation

4. School-based evaluation is a continuous process in teaching and learning which is planned and implemented by the teacher. Feedbacks from the evaluation enable the teacher to monitor the students’ progress so that further action can be taken if necessary. School-based evaluation can also assess the students’ performance in other aspects not found in the centralized evaluation such as UPSR, PMR and SPM. In fact, school-based and centralized evaluation work hand in hand in our system of evaluation.

5. The aim of School-based evaluation is to:
   - identify the overall growth and development of students
   - identify the students’ strengths and weaknesses at an early stage from time to time
   - know the effectiveness of teachers’ teaching
   - plane and adapt the teachers’ teaching
   - take immediate and appropriate further actions

6. The main characteristics of School-based evaluation are as follow:

<table>
<thead>
<tr>
<th>Run by the teacher</th>
<th>Based on Criteria-Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess his/ her own students</td>
<td>Assess students based on the stated outcome</td>
</tr>
</tbody>
</table>

Formative
- Carried out continuously
- Diagnose the progress and achievement of students

Varied methods
- Observation
- Oral
- Writing

Diagnose students’ overall learning progress
- Intellect
- Moral
- Emotion
- Physical

Emphasize on individual development
- Based on individual ability and not by comparison

Encourage self-evaluation
- Train student to assess his progress continuously
- Teacher receives extra feedback

Systematic
- Plane
- To fix the Instrument
- Implement
- Analyze
- Report
- Further action

Enable further action
- Overcome weaknesses in learning
- Enhance strengths in learning
7. Through School-based evaluation, students are assessed in various aspects, inclusive of multiple intelligence, emotion and personality development.

- Knowledge
- Thinking skills
- Language skills
- Arithmetic skills
- Learning skills
- Practical skills
- Manipulative skills
- Socialization skills
- Creativity
- Science process skills
- Behaviour and practicing of moral values
- Attitudes
- Health and fitness
- Kinesthetic skills
- Aptitude
8. Implementation of school-based evaluation is based on the following steps:

- **Planning**
  - Define learning outcome and instrument of evaluation

- **Constructing instrument**
  - Prepare Test Specification Table
  - Construct items/instrument

- **Implementing Evaluation**
  - Observation/oral/writing

- **Recording**

- **Analysis of data**

- **Reporting** (if necessary)

- **Mastery of matters that have been taught**
  - Yes: Reinforcement - Enrichment
  - No: Remedial

- **Further action**
  - Yes: Proceed to the new lesson

(Source: *Penilaian Kendalian Sekolah* (2001), Pusat Perkembangan Kurikulum, pg.9)

9. Learning outcomes which have been identified can be assessed by using the following methods:

- Observation
- Oral
- Writing
The choice of each method depends on:

- the learning outcome to be assessed.
- the relevance of the matters to be assessed.

10. Observation method is used to assess the aspects which are difficult to be identified through oral or writing method. For instance:

- attitude
- behaviour/performance
- practical
- manipulative skills
- socialization skills
- learning skills
- kinesthetic skills
- computer literacy skills
- innovative skills

11. Aspects which are assessed through oral method are as follow:

- understanding of concepts
- factual knowledge
- listening competency
- correct language usage
- fluency in reciting
- pronunciation in conversation
- arithmetic competency
- styles in presentation
- conversation and attitude

12. Aspects of writing assessment can be identified through:

- essays
- project reports/course work/assignment/folio
- exercises and written tests
- elaboration or map interpretation, table, graph or chart
CHAPTER 11: BASIC STATISTICS

Overview
In this chapter, we shall cover the
• graph, ogive, histogram, frequency polygon
• mean, mode, median
• standard deviation
• z score and t score
• interpretation and description of data

Key Terms
• distribution
• frequency distribution curve
• frequency polygon
• histogram
• measures of central tendency
• mean
• median
• mode
• standard deviation
• z score
• t score

Further Reading

Suggested Input
1. Graph
   a. Histogram
      • A rectangular bar is drawn above each raw score.
      • The height of the rectangle indicates the frequency of occurrence for that score.
   b. Frequency polygon
      • A single point is used to designate the frequency of each score.
      • Adjacent points are then connected by a series of straight lines.
2. Measures of central tendency
A convenient way of describing a set of data with a single number.

The three most frequently encountered indices of central tendencies are the mode, the median, and the mean

a. Mode
   - The score attained by more people than any other score
   - Determined by looking at a set of scores or a graph of scores to see which occurs most frequently

b. Median
   - The point in a distribution above and below which are an equal number of scores (the mid point)

c. Mean
   - The arithmetic average of the scores
   - Calculated by adding up all the scores and dividing that total by the number of scores

3. Standard deviation
   - A measure of variability that indicates by how much all of the scores in a distribution typically deviate or vary from the mean

4. z score
   - Expresses how far a score is from the mean in terms of standard deviation units

5. t score
   - A score obtained by multiplying the z score by 10 and adding 50

6. Interpretation and description of score
   a. Normal curve
      - Bell-shaped curve when the scores are normally distributed
      - The area under the curve represents all (100%) of the scores and 50% of the scores are above the mean and 50% of the scores are below the mean
      - The mean, the median, and the mode are the same
      - Most scores are near the mean and the farther from the mean a score is the fewer the number of persons who attain that score
   b. Positively Skewed Distribution
      - The order of the three measures of the central tendency from left to right is first the mode, the lowest value; then the median, the mid point; and finally the mean, the highest value.
c. Negatively Skewed Distribution
   • The order of the three measures of the central tendency from left to right is first the mean, the lowest value; then the median, the mid point; and finally the mode, the highest value.
CHAPTER 12: REMEDIAL EDUCATION

Overview
In this Chapter, we shall cover,

- Concepts, rationales and objectives of remedial education
  13. Mastery learning problems
- Ways to detect learning difficulties
- Role of the classroom teacher in implementing remedial education

Key terms
- Rationales of remedial education
- Types of learning problems
- Learning difficulties

Further Reading

Suggested Input

1. Remedial education is one of the important features of the KBSR curriculum. KSR emphasizes on the learning of the basics, hence the pupils who do not master the basic skills on 3R, are required to undergo remedial education. At the beginning stage, the pupils who are identified with learning difficulties undergo the remedial education in the main stream classes. If they failed to do so, they will attend the special remedial class conducted by a remedial education teacher.

2. Remedial education has its rationales. Individual differences among the students exist in a normal class of 35-40 students. Hence some students who are slow in learning tend to drag behind. If remedial actions are not taken at the very beginning, learning difficulties, especially 3R mastery problems may become serious.

3. Students facing learning difficulties are slow learner who need special attention from the teacher. They have negative self-concept and always tend to lose
confidence when facing problems in their study. Remedial education can help in overcome their 3R mastery problems, thus enhance their confidence in learning.

4. Students with learning difficulties have a high tendency to play truant. Their peers look down at them and they have problems in interacting with their friends. If they do not undergo remedial education, they will become school drop-out at an early age.

5. The objectives of remedial education are as follows:
   - Mastery of 3 R skills through various instructional methods or learning materials based on their abilities and interest.
   - To overcome the learning problems faced by a certain group of students.
   - To enhance the students’ potentialities and talents.
   - To inculcate positive self-concept and confidence among the students.
   - To improve interaction among the students through organized activities in the classroom or outside the classroom.
   - To ensure every student receives individual attention and help him to perform based on his abilities.

6. Factors causing learning difficulties among students can be identified as follow:
   - Improper implementation of Instructional strategies
   - General health impairment
   - Mental problems
   - Visual impairment
   - Auditory impairment
   - Speech impairment

7. Teacher-centered classroom teaching always causes slow students to drag behind. Slow students should be allowed to learn at their own pace. In this context, mastery learning plays an important role. General health impairment related to malnutrition and physical deficiencies are contributing factor that cause learning problems. Hence the students concerned could not focus their attention while learning and teaching take place. Further more, students who always miss their lessons because of sick leaves will hamper their academic progress.

8. Emotional, environmental and educational factors can contribute to learning problems among the students. Students with problems in personal and social adjustment can seriously limit their ability to concentrate, and cause a range of behavior from anger and aggression. That is why they appear shy or listless and lack of self-confidence.

9. Speech impairment will affect the language development of the students. The
students’ inability to speak well because of the defects in their articulators (for example, lips, tooth, tongue, vocal cord). Thus, they face problems in reading and communication.

10. Health impairment related to premature birth, anoxia and hypoxia (lack of oxygen) hinder the academic performance of a student. Brain damage caused by accidents or a bad fall also jeopardize the student’s learning abilities.

11. In the Malaysian school context, reading difficulties can be classified as follows:

- Fail to differentiate the alphabets which are quite similar in shape: h-n, c-e, f-t, g-q
- Fail to differentiate the alphabets which are upside down: w-m, h-y, u-n
- Fail to differentiate alphabets which are inverted: p-q, b-d
- Fail to differentiate the phonic of the alphabets which are quite similar: b-p, d-t, m-n
- Fail to differentiate “suku kata” : “lari” is pronounced as “lali”, “mari” is pronounced as “mali”
- Fail to pronounce correctly alphabets which are quite similar in shape: n-h, m-n, l-j, c-e
- Pronounce the alphabet with the accent of the mother tongue: ‘o’ is pronounced as ‘wo’, ‘r’ is pronounced as ‘l’
- Fail to pronounce the “suku kata” which carries e pepet and e taling. For example: sepak- sepak, perang-perang
- Fail to pronounce the “kosonan berganding awal” such as “sy”, “ng” dan “ny”. For example: “syarahan” is pronounced as “sakrah”, “nyata” is pronounced as “nata”, “nyatuk” is pronounced as “natuk”.
- Fail to pronounce words which are quite similar: “kepala” is pronounced as “kelapa”, “rambut” is pronounced as “rumput” or “hikmat” is pronounced as “hemat”
- Unable to read sentences with the correct intonation.
- Unable to answer factual questions based on the material read.
- Unable to find main idea of a passage.
- Hand written words are not aligned.
- The spacing of words are not uniform.
- Words written are overlapped.

12. There are many ways to detect learning problems. For instance:
• Constructing inventories
• Making observations
• Interpreting performance records
• Constructing paper and pencil tests
• Planning daily exercises
• Constructing question-and-answer sessions/quizzes

13. A well-constructed inventory can help the teacher to identify the learning problems among the student in mastering the basic of reading, writing or arithmetic. For example, reading inventories allow the teacher to make a qualitative evaluation of a student’s word-recognition and comprehension strengths and weaknesses.

14. Through observations, the teacher can identify student learning difficulties. Students with learning difficulties always show signs of disability. For example, making phonetic errors with words which should be known by sight- “banyak” is pronounced as “manyak”, “khas” is pronounced as “kas”. Other signs of learning difficulties that can be observed are: hyperactive, fail to follow instructions, fail to draw simple shapes, and fail to follow simple instructions.

15. Performance records such as “Rekod Prestasi” and “Rekod Profil” can give information on a student’s learning problems in the basic 3 R. A performance record (Rekod Prestasi) shows clearly students’ mastery of basic skills in Mathematics, Bahasa Malaysia and Inggeris. Whereas a profile record shows the overall performance of the students.

16. Paper and pencil test which consists of objective and subjective tests are useful in giving information on the students performance in Bahasa Malaysia, English, Mathematics and other subjects. Low scores indicate that the students need remedial education to overcome their learning difficulties.

17. The teacher can also get information based on students’ daily exercises. Mistakes made by students in the exercises help teacher to identify their weaknesses.

Thus, instructional materials can be constructed to help the students to overcome their weaknesses.

18. By constructing question-answer session or quizzes, the teacher can get feedback on the students’ performance, hence variety of activities can be planned to overcome the students weaknesses.

19. Classroom teacher plays an important role in implementing remedial education. The important steps involve:
20. The implementation of remedial teaching in a normal class consists of four sections.
   - The statement of teaching objectives
   - The planning of steps and strategies in teaching
   - The implementation of remedial activities, and
   - Evaluation
CHAPTER 13: ENRICHMENT EDUCATION

Overview
In this Chapter, we shall cover,

- Concepts, rationale and objectives of enrichment education
- Types of enrichment activities

Key terms
- Enrichment
- Objectives
- Types of enrichment
- Principles in enrichment
- Strategies in enrichment education

Further Readings
Kementerian Pendidikan Malaysia (1982). *Buku panduan khas: Program Pengayaan*
Kuala Lumpur: Pusat Perkembangan Kurikulum.


Suggested Input
1. In the implementation of KBSR and KBSM, enrichment programmes cater for all the students in a class, regardless whether they are bright, average or slow learners. An enrichment programme consists of additional activities to reciprocate the basic learning activities. Through enrichment activities, the students have the opportunities to take part in the value-added activities so as to widen their learning experience, to enhance their interest, creativity, and also to inculcate self-discipline, and leadership qualities among the students. Students’ performance in the class is determined by individual differences. Students who have achieved a certain level of mastery will be given enrichment activities.

2. Objectives of enrichment programmes are to enable students to:
   - take part in more challenging learning activities in accordance with their abilities
   - enhance their interest, talent and self-development
   - utilize their leisure time in accordance with their interest and talent
   - develop leadership values
   - widen their scope in reading from various sources
   - enhance their creativity and thinking skills
3. Principles in conducting enrichment activities:
   - In the form of self-learning activity and clearly defined instructions
   - Interesting, challenging and diversified according to students’ ability, interest and talent.
   - In the form of daily programme or project with require one to two weeks.
   - Consist of activities which are related to students' learning skills
   - Consist of a variety of materials either self-made or from the market
   - promote self-learning

4. Enrichment activities can be carried out according to the schedule as follow:
   - within a chosen time slot which can be carried out daily- The teacher can choose a suitable time slot using his/her discretion to implement enrichment activities for subjects such as Bahasa Malaysia or English.
   - after undergoing basic learning activities for certain skills- for example, Mathematics:
     - after mastering a set of skills.
     - after mastering all the skills from a certain learning unit

5. In preparing instructional materials for the enrichment activities, the following characteristics should be taken into consideration:
   - In the form of self-directed learning, instruction and explanation are clearly stated.
   - Related to the skills which the students have mastered.
   - Reinforce the skill the student has mastered.
   - Expand the student’s knowledge and experience
   - Interesting, challenging and in accordance with the students’ differing interests and talents.
   - Consist of a variety of materials in accordance with the students’ abilities.

6. Activities suggested for enrichment are as follows:
   - Extra reading/ additional exercises
   - Project work
   - Games and recreation

7. Strategies in implementing enrichment activities:
   - For all the students based on group activities compatible with their abilities
   - Enrichment and remedial activities carried out concurrently
   - For all students based on mixed group activities

8. The first strategy is carried out by dividing the students into three groups compatible with their abilities, i.e. smart, average and slow. Each group carried out the same activities but with varied cognitive level. These are referred to as horizontal enrichment activities. Whereas vertical enrichment activities deal with
high cognitive level And are more challenging, especially for students who are high achievers. This will help students to widen and enhance their experience.

**An example of enrichment activity for English Language**

- **Name of activity:** Animal Squares
- **Language level:** all
- **Objective:** To practice the vocabulary of the names of animals.
- **Equipment and material:** prepared squares, pencils and erasers

Hidden in the square below are the names of twenty-five different animals.
Draw a circle around each name, and you may work both vertically or horizontally.

```
L  I  O  N  X  E  S  F  K  C  A  T
O  M  X  I  B  L  O  R  D  K  Y  O
I  P  M  D  E  E  T  U  R  K  E  Y
R  A  O  Z  A  P  A  N  T  H  E  R
B  L  H  I  R  H  P  O  I  F  G  A
Z  A  D  O  G  A  E  T  G  O  A  T
W  R  E  K  N  N  P  T  E  X  Y  H
N  F  E  E  U  T  I  E  R  A  A  I
H  O  R  S  E  Z  G  R  M  L  K  E
O  B  U  F  F  A  L  O  W  O  L  F
B  A  B  O  O  N  W  S  H  E  E  P
X  L  E  I  U  T  M  O  O  S  E  N
```

**Answers**
ape  deer  goat  otter  sheep  
baboon  dog  gnu  ox  tiger  
bear  elephant  horse  panther  turkey  
buffalo  fox  impala  pig  wolf  
cat  lion  moose  rat  yak
CHAPTER 14: INCLUSIVE EDUCATION

Overview
In this Chapter, we shall cover,

- Concept of inclusive education
  15. Difference between inclusive education and special education
  16. Types of special children

Key terms
- Inclusive education
- Types of special children
- Special needs

Further Readings

Suggested Input
1. Inclusive education means the inclusion of special children in the general education classroom. Students with physical impairment such as hearing and visual are integrated with their peers from the regular classroom. The particular class is guided by a resource teacher who collaborates with a class teacher. Individualized instructional materials and general class activities are prepared to help students with physical impairment. The Malaysian pilot project for inclusive education was started in 1994 where 14 schools are involved.

2. Inclusive education emphasizes:
   - Cooperative learning among the special children and children from the regular class.
   - Inculcation of moral values among students.
   - Enhancement of interaction between special children and their peers.
   - Self-confidence and positive self-concept among the special children.
   - Collaboration between the special education and general education teacher.
- Multiple intelligences across the curriculum.
- Multilevel instruction.
- Outcome orientation and authentic assessment.
- Technology integration and problem based learning.

3. **Special education** is specially designed instruction to meet the individual needs of special students. According to Kirk and Gallagher (1979), special education is “those additional services, over and above the regular school program, that are provided for exceptional children to assist in the development of their potentialities and/or amelioration of their disabilities” (p.22). Special educators serve students identified as having disabilities: students with learning disabilities, behavioral disorder and emotional disturbances, mental retardation, speech and language disorders, autism, physical and health disorders, traumatic brain injury, and vision and hearing disorders. However, special education services are also provided for gifted and talented students.

4. The difference between inclusive education and special education are as follow:

<table>
<thead>
<tr>
<th>Inclusive education</th>
<th>Special education</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. provide special education to special children while attending regular class and schools.</td>
<td>2. cater for individual needs of special children.</td>
</tr>
<tr>
<td>2. special/resource teacher and classroom teacher collaborate in teaching and learning.</td>
<td>2. special/resource teachers serve children with learning disabilities.</td>
</tr>
<tr>
<td>3. students follow core curriculum and general class activities.</td>
<td>3. students follow special curriculum and specially designed instructional activities.</td>
</tr>
</tbody>
</table>

5. Children with special needs:
   1. Mentally retarded
   2. Learning disabilities
   3. Behavioral disorders
   4. Auditory and communication problems
   5. Visual problems
   6. Spastics
   7. Giftedness

6. Characteristics of children with special needs:
   **a) mentally retarded**
   - general aptitude for learning is impaired
   - intellectual performance is significantly sub-average compare to their peers
   - display more problem behaviors than their peers
- may not be socially accepted by their peers because lacking social skills
- deficient in motor skills

b) learning disabilities
- have difficulty receiving information because of attention or perception problems
- have difficulty in communication because of expressive language problems
- performance in school is far below average
- have difficulty in paying attention
- have motor coordination problems

c) auditory and communication problems
- have difficulty in learning and pronouncing words
- have difficulty in communication because of hearing impairment
- show an overall delay in language development
- always seen stressful in interpersonal communication

d) visual problems
- have difficulty in reading writing or illustration from the blackboard
- need to be taught basic orientation and mobility skill so as to move about in school
- need encouragement to interact with sighted peers
- tend to read from a very closed distance.

e) spastics
- have difficulty in motor coordination
- physical activities are restricted
- instructional materials are adapted for their needs

f) Giftedness
- above average performance on measures of intellectual performance
- have special talents in art or music or academic achievement
- have creative ability
- have excellent social skill

7. Resource and classroom teacher play an important role in inclusive education.

They work hand in hand through collaborative and cooperative teaching. For instance, the planning of strategies and preparation of instructional materials. The
evaluation has to be carried out by resource teacher in line with the needs of special children.

8. Factors that influence the effectiveness of inclusive education in the normal classroom can be classified as below:
   • The commitment of classroom and resource teacher.
   • The allocation of experienced classroom and resource teacher.
   • Cooperation from the parents and teachers in school.
   • Full support from the school principal.
   • The availability of instructional materials and facilities in school.
   • Enrolment in each class should not more than 30.
   • Incentives should be given to classroom and resource teachers who are involved in the programme.
   • Counseling service is provided for special children.
CHAPTER 15: INTRODUCTION TO GUIDANCE AND COUNSELLING

Overview
In this chapter, we shall cover the
• concept
• principles
• goals
• fields
• types of services
• approaches of Guidance and Counselling

Key Terms
• Guidance
• Counselling

Further Reading

Suggested Input
1. Goals
   • Facilitating behavioral change
   • Enhancing coping skills
   • Promoting decision making
   • Improving relationships
   • Facilitating client potentials
2. Fields
   • Personal guidance
     ▪ psychological problems
     ▪ welfare services
   • Social guidance
     ▪ social problems
• Educational guidance
  - maintenance of students’ attainment and development records
  - guidance of subjects choices
• Career guidance
  - motivate school children to want to study
  - provide opportunities for decision making

3. Types of services
• Individual counselling
• Group counselling
• Inventory and record
• Family conference

4. Approaches
• Developmental
  - develop human potentials
• Preventive
  - develop awareness
• Remedial
  - increase coping skills, attitudes and behavior change
• Crisis
  - develop self-responsibility and commitment
CHAPTER 16: ROLE OF THE TEACHER AS A COUNSELLOR

Overview
In this chapter, we shall cover the
• role of the teacher as a counsellor

Key Terms
• Role
• Counsellor

Further Reading

Suggested Input
1. Role of the teacher as a counsellor
   • Collect Information of student’s profile
   • Identify students with problems for counselling intervention
   • Refer students to counsellor
   • Give information on career, drugs prevention education and current information
   • Identify obstructive factors in implementing the above task
CHAPTER 17: INTERPERSONAL RELATIONSHIP

Overview
In this chapter, we shall cover the
• interpersonal relationship

Key Terms
• Attraction
• Caring

Further Reading

Suggested Input
1. Relationship Building
   • Adopt an other-oriented perspective
   • Observe and act upon approachability cues
   • Identify and use conversation starters
   • Follow initiation norms
   • Provide information about self
   • Present self in a positive manner
   • Ask questions
   • Don’t put too much into the initial interaction
2. Power of attraction in relationship
   • Physical attraction
   • Credibility, competence and charisma
   • Proximity
   • Similarity
   • Complementary needs
   • Relationship potential: reciprocal of liking
3. Caring in relationship
4. Conflict in relationship
   • Types of conflict
     ▪ Pseudo conflict
     ▪ Simple conflict
     ▪ Ego conflict
• Conflict management styles
  ▪ Non-confrontational style
  ▪ Controlling style
  ▪ Cooperative style
• Conflict management skills
  ▪ Manage your emotions
  ▪ Manage information
  ▪ Manage goals
  ▪ Manage the problem
CHAPTER 18: EFFECTIVE COMMUNICATION

Overview
In this chapter, we shall cover the
• communication skills
• obstacles in communication

Key Terms
• Active listening
• Attending skills

Further Reading

Suggested Input
1. Communication skills
   • Relationship building
   • Attending skills
   • Active listening
   • Use of suitable language
   • Understanding body language
   • Use of suitable responses
2. Obstacles to communication
   • physical
     ▪ body
     ▪ health
     ▪ speech: stammering, stuttering, lisping
     ▪ hearing
   • psychological
     ▪ personality
     ▪ belief system
     ▪ perception
   • environmental
• noise
• territorial space
• climate/temperature
• location
• other disturbances
• social
  • culture
  • religion
  • status
  • race
  • language
CHAPTER 19: COUNSELLING AS A PROCESS

Overview
In this chapter, we shall cover the
• structure of the counselling process

Key Terms
• Limitations of counseling

Further Reading

Suggested Input
1. Functions of the counsellor in the counselling process
2. Characteristics of the counselling relationship
   • Respect for the individuals
   • Acceptance
   • Unconditional positive regard
   • Empathy
   • Trust
   • Confidentiality
   • Congruency
   • Genuineness
   • Concern
3. Limitations of counselling
CHAPTER 20: COUNSELLING

(i) INDIVIDUAL COUNSELLING

Overview
In this chapter, we shall cover the
• stages in the counselling process
• stages in the development the group counselling process

Key Terms
• Exploration
• Termination
• Conflict
• Confrontation
• Cohesiveness

Further Reading

Suggested Input
1. Stages in the counselling process
   • Relationship-building
     ▪ Process of becoming acquainted
     ▪ Social amenities
   • Exploration
     ▪ Strategies and techniques needed to bring about a fuller exploration of the nature of the client’s basic concern
   • Identification of the problem
     ▪ Focuses on using insights and awareness in order to personalise their contributions to the problems they are facing
     ▪ Client has clearly defined the problem
   • Selection of strategies
• Help client to plan exactly how, when and where the change process will start in earnest.
• Client should be made aware of the many factors that contribute to success
  • Taking action
    • Counsellor help clients to examine the array of potential solutions and make a commitment to action based on evaluating solutions and their possible consequences
  • Termination
    • Summarising and wrapping up any unfinished business and saying goodbye
  • Follow-up
    • Negotiations are made for follow-up sessions if mutually desirable

(ii) **GROUP COUNSELLING**

**Suggested Input**

1. Introduction
2. Conflict and confrontation
   • Judgemental
   • Resistance
   • Open mindedness
   • Attempt to dominate
3. Cohesiveness
   • Mutual trust
   • Morale
   • Self-disclosure
4. Outcome
   • Behaviour change
   • Self exploration
   • Productivity
   • Responsibility
   • Termination
   • Face reality of termination
   • Reinforce learning concerning self-disclosure
   • Encourage group members to put into words what they have learned from the group experience and how they intend to apply their increased self-
understanding and behaviour change to their lives outside the counselling experience
CHAPTER 21: INDIVIDUAL AND GROUP COUNSELLING SKILLS

Overview
In this chapter, we shall cover the
• stages in the counselling process

Key Terms
• Paraphrasing
• Summarising
• Silence
• Evaluating

Further Reading

Suggested Input
1. Individual Counselling
• Relationship-building
• Questioning
• Paraphrasing
• Silence
  ▪ Client needs opportunity to pause and internally explore their thoughts, feelings and behavior
• Confrontation
  ▪ Let clients know that they have a responsibility for providing independent input into the session involves finding and pointing out mixed messages, conflicts and incongruities that clients express or that exist in their lives
• Clarification
• Interpretation
- Help clients recognise the deeper, more implicit aspects of their communications
- Call attention to deficiencies in clients’ functioning that inhibit goal setting

- Summarising
  - used at the beginning of a new session to prevent repetition of previous interchanges and provide initial focus and directions
  - used during a session when a client is rambling and needs direction
  - when a client has exhausted a certain topic and is unable to proceed with more focus and direction

2. Group Counselling
   - Attending and communication skills
     - Facilitating
     - Guiding
     - Controlling
     - Relating
     - Evaluating
       - Assessing results
       - Summarising
       - Generalising
       - Referral
       - Terminating
     - Reality testing
     - termination