

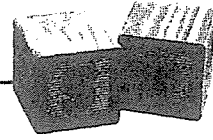
CHAPTER

STRATEGIES FOR TEACHING: The Teacher's Tool Kit

*What we need is a generation of students who
are fearless in the face of the tentative.*

~ Bob Samples, 1987, p. 222

STUDY OBJECTIVES



The purpose of this chapter is to

- gain knowledge of the skills and strategies associated with effective teaching
- examine the underlying principles of effective classroom management
- explore various dimensions of the questioning process
- help teachers incorporate effective learning and teaching strategies into their classroom practice

INTRODUCTION

This chapter deals with many practical elements that play a part in making the learning environment run smoothly. Attention is paid to classroom management, the development of effective questioning skills, how the classroom can be organized to promote appropriate learning conditions, and instructional strategies and techniques that facilitate teaching and learning. Finally, a detailed description of the integrated day approach is provided to demonstrate how many of these elements can be combined within an effective, active learning environment.

TEACHING STRATEGIES

Teachers require an extensive repertoire of skills to be able to meet the diverse needs of children in the modern classroom. All of these skills work in concert with one another to produce a dynamic pattern that is unique to each teacher and to each classroom. Indeed, this mixture will vary not only from teacher to teacher, but also with individual teachers from year to year.

Some of these factors include:

- personal attitude and management
- classroom management
- questioning skills
- organization strategies
- cooperative learning

PERSONAL ATTITUDE AND MANAGEMENT SKILLS

The Teacher as Leader: Setting and Maintaining the Tone

In any classroom situation, the teacher is ultimately responsible for ensuring that learning occurs for all students. Teachers manage this by thoroughly planning for student involvement, by continually refining their communication skills, by monitoring the teaching–learning process as it occurs, by assessing how well students have learned at the end of the process, and by reflecting on the effectiveness of their role at each stage of this process.

One of the key factors in being an effective teacher is demonstrating a strong commitment to the teaching profession by being enthusiastic toward students and the learning process. Students quickly pick up on whether or not this is evident in the class and reflect this attitude back in their interactions, both with their teacher and with their peers. The powerful impact of a positive learning environment has been well documented, and the teacher plays a crucial role in setting the tone for this to happen (Lewis et al, 1996). Crucial elements such as courtesy, respect, sincerity, acceptance, and enthusiasm can be highly contagious within the classroom setting! The teacher's attitude can have far-reaching effects on how students perceive themselves and how they relate to the learning process in general. When teachers

MORE INFORMATION

For more information on the effect of teacher attitude on learning, see "Student behaviours and teacher approval versus disapproval" by Dan Laitsch (2006) on the companion website.

reflect a more approving attitude toward their students, more positive learning environments result (Laitsch, 2006).

Communication Skills

Since it is the teacher who takes the lead in the teaching–learning process, it must be the teacher who ensures effective communication skills. Some of these include:

- using an effective tone of voice which is varied, well-modulated, clear, and confident
- having clear enunciation and patterns of speech to ensure that intentions are fully understood
- having the ability to focus and sustain attention easily
- using effective language which is appropriate to the age level
- speaking expressively and in an animated fashion to hold interest
- having an overall interactive communication style which encourages active student participation and engagement

Transitions

Another major skill that teachers must develop is the ability to manage the many transitions that occur throughout the school day. Students need specific guidance to manage transitions effectively and smoothly, as topics or subjects change, as activity shifts from one area to another, and as classroom/school schedules intervene. Consistent rules and routines are essential for this to happen. Another key factor in how smoothly transitions are handled is whether or not both the teacher and the students are absolutely clear on what is expected, not only in expectations for behaviour, but also in terms of the procedures to follow. The importance of clear instructions cannot be underestimated. Providing an agenda at the start of the day and charts outlining procedures to follow are strong visual references that will facilitate smooth transitions throughout the school day.

Timing and Pacing

Timing and pacing have powerful effects on how efficiently the classroom functions. Appropriate pacing can set the tone for the effectiveness of any lesson. If students are presented with information that is relevant, and are given opportunities to process it and interact with it, then authentic learning is more likely to occur.

When teachers use effective timing and pacing, lessons flow more smoothly and teachers are able to cover the intended material in the allotted time. When this happens, students do not feel rushed or overwhelmed by the content. It should be noted that the age and stage of the learners influences appropriate timing.

As a practical guideline, try to limit teacher-directed input sessions to a total of 10 to 15 minutes. After this time has elapsed, more and more students will pay less attention to the input and will start to become distracted. Children may learn to be less attentive when they are expected to listen to another person for extended periods of time which are far beyond their natural capacity. In general, the younger the children, the shorter these input sessions should be, since extended sessions run counter to their egocentric nature.

Active Learning

(next will be addressed later)

Although this topic has been previously discussed, it is appropriate to mention it again briefly within the context of this topic. Teachers are naturally responsible for establishing the physical layout of the classroom. Encouraging an active learning environment is an important part of their duties. Awareness of student needs and capabilities at various ages and stages provides valuable guidance. Since children in the primary and junior divisions are still very much in their formative years, they need to be actively engaged in many learning activities that will facilitate various aspects of their development; appropriate learning materials are essential to support this. Even older students benefit from "hands on," real-life learning experiences since many of them will not reach a stage of being able to deal with abstract concepts in the absence of concrete referents until much later (Hewitt, 1995).

In addition, setting children's learning—at any age or stage—within a problem solving venue that encourages them to interact with one another and make decisions will enhance their thinking skills (Jensen, 1998; Gardner, 1999). Effective teachers will plan for many of these opportunities at all grade levels.

The Role of Direct Instruction

There is a definite place for direct instruction within the many different approaches that teachers use in their classrooms. When new information is presented and a common base of understanding is required, direct

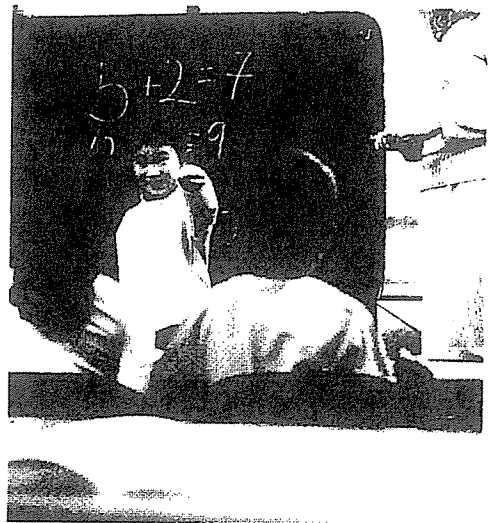
instruction is the mode of choice. All of the skills mentioned previously remain as the foundation to effective direct instruction. Communication skills, organization, timing and pacing, and handling transitions all play a crucial role in providing effective direct instruction.

An effective introduction is one of the most important things to use at the start of a teacher-directed lesson. Sometimes this is referred to as a “hook” or a “grabber.” It need not be a lengthy process, but can be accomplished by using a visual image, playing some music, reading a passage of text, or posing a problem to be solved. The purpose of this strategy is to capture the students’ attention right from the start and provide them with an anticipatory mindset or context for their new learning. It should serve to capture their interest, activate prior knowledge on the topic, and initiate new thoughts about what is being learned.

The teacher should then present new information in a systematic way so that concepts are clearly and thoroughly developed. Appropriate sequencing of concepts is vital at this step in the instruction. Using visual aids or concrete materials is still a necessary part of instruction so that concepts can be fully understood by students. While not everything can be learned through individual discovery, teacher guidance and the use of concrete materials/examples should still be part of the direct instruction process. Teacher modelling and demonstration can be powerful teaching and learning tools as the teacher gives specific direction to the learning. At various points in the lesson, the teacher can use “scaffolding” to focus attention on specific ideas and develop these further through adroit questioning skills.

At various points throughout the presentation of concepts, the teacher should monitor students and question them carefully to ascertain their level of understanding. Before the students are sent to do some form of independent follow-up or application of the new knowledge at the end of the lesson, it is important to summarize the new content to bring about a sense of closure to the topic. This summary can also help the teacher ascertain the students’ readiness to do a task independently.

It is important to mention that teachers will use many of the skills mentioned here not only during sessions with small groups, but also in whole class instruction, and while working with or instructing small groups.



GLOSSARY

Classroom Management—a multifaceted process which depends upon an engaging curriculum, student responsibility, appropriate teacher modelling, effective instruction, and management skills to work toward conflict resolution with individuals and the whole class.

CLASSROOM MANAGEMENT

In recent years there has been a shift away from teachers being primarily disciplinarians within the classroom, toward teachers modelling and teaching students about self-control. One of the most important factors that affects classroom management is the relationships that exist within the classroom. In general, teachers set the tone within individual classrooms as they consider how their classroom will function on a day-to-day basis, but the students also contribute to this dynamic. A smooth-running classroom is one in which learning can more readily occur. This does not happen by chance, but demands considerable forethought, planning, and commitment on the part of the teacher, as well as involvement and cooperation on the part of the students. Teachers who are effective classroom managers

- use time as effectively as possible
- implement group strategies with high levels of involvement
- choose lesson formats and tasks conducive to high levels of engagement
- communicate expectations clearly
- implement a system right from the beginning of the year

(Curwin & Mendler, 1999)

Curwin & Mendler's research provides teachers with some interesting insights into student behaviour: (1999). According to their research,

- 80 percent of students will routinely behave properly, no matter what teachers do
- 15 percent of students will misbehave, from time to time
- 5 percent of students will chronically misbehave and respond poorly, in general

The issue for teachers, then, is how to get the potentially wavering 15 percent to join with the behaving 80 percent, rather than with the more predictably rebellious 5 percent.

Our challenge is to provide enough structure for the 15 percent, without alienating or over-regulating the 80 percent, or backing the 5 percent into a corner.

~ Curwin & Mendler, 1999, p. 28

Mendler felt that if teachers use an obedience model for addressing classroom management, they risk having the 80 percent lose interest and the 15 percent only temporarily adjusting their behaviour. To accomplish a more positive result, one of the most important things for a teacher to do is to treat the students with respect and work consistently to win them over. This can be accomplished by

- modelling appropriate and desired behaviours
- being open to student input and ideas
- using humour in the classroom to set the tone and diffuse problems
- being consistent in monitoring acceptable behaviours

Why Do Students Misbehave?

The research of Rudolf Dreikurs (1971) provides some interesting insights into the basic reasons why children misbehave. He felt that most reasons behind misbehaviour could be classified under four "Goals of Misbehaviour": attention seeking, power seeking, revenge, and assumed disability. The following section provides brief descriptions of the kinds of behaviour associated with each of these goals.

1. **Attention:** This form of misbehaviour is one that many teachers will face from time to time during their careers. Many children exhibit some form of attention-seeking to some degree or another. It is one of the most common types of behaviour problems, but it is also one of the easiest to rectify.

Example: Amy constantly engages in behaviour which prompts the teacher to give her repeated reminders of what she should be doing even though Amy is a very capable student. When she is checked on this, the behaviour stops, but only temporarily.

2. **Power:** This kind of misbehaviour can be difficult to deal with in the classroom situation. Children who are seeking power have had their power taken away from them and will typically respond in defiant ways.

Example: Cameron's mother has a newborn at home and his father is out of the country on a prolonged business project. When Cameron comes into the classroom, he immediately starts to direct the other children in what they should be doing. The children complain to their teacher that Cameron is being very "bossy." When the teacher reminds Cameron of his behaviour, he responds defiantly and a confrontation ensues.

3. **Revenge:** The child who exhibits this kind of misbehaviour may only feel significant when able to hurt others. This is one of the most serious forms of misbehaviour and, in all likelihood, some professional help will be needed to deal with this problem.

Example: Sean is 9 years old and has a history of confrontations with others. At recess, he goes out to the edge of the playground, takes a small branch from a shrub, and proceeds to sharpen the stick by rubbing it back and forth in the mortar grooves of the brickwork on the school building. He then threatens to stab everyone in the schoolyard.

4. **Assumed Disability or "Learned Helplessness":** In this situation, the child's basic self-esteem is at issue. The child has come to feel defeated by whatever he or she is asked to do and perceives himself or herself as a failure, and so gives up trying.

Example: Bekka gives up easily when a task is even slightly challenging even when it is still within her capability. She ends up taking a long time to even start a task and, as a result, rarely finishes any assignment. She appears to be very lethargic.

Of these reasons for misbehaviour, the first two, attention and power seeking, are the most amenable to change once the teacher puts consistent responses in place. The last two, revenge and assumed disability or learned helplessness, can be very resistant to change since there are often serious underlying emotional issues that need to be faced first. Most often, the latter two reasons for misbehaviour require professional support and assistance beyond the classroom level for change to be effective and lasting.

Table 7.1 summarizes some key points and appropriate responses for resolving Dreikurs' types of misbehaviour.

Table 7.1 Dreikurs' types of misbehaviour, underlying reasons for the behaviour, and the teacher's responses

	Characteristics	Underlying Reasons	Teacher's Response
Attention	Engaging in repeated forms of inappropriate or annoying behaviour which deliberately calls attention to oneself.	Feels annoyed; lacks confidence and seeks constant boosts to ego to relieve levels of anxiety.	Never give attention when the child is demanding it. Give attention before it turns to attention seeking. "Catch a kid being good!"
	Perception of the child: "Nuisance."	Message from the child: "Look at me."	"I like the way you came in so quietly and were kind to..."
Power	Similar to attention seeking but has greater overall frequency and intensity. Defiant responses from child. Challenges the teacher's authority.	Feels disempowered, angry, defeated, and out of control. Wants others to feel this way too.	Don't argue and don't give in! Give some legitimate or controlled power to the child before it is demanded.
	Perception of the child: "Stubborn."	Message from the child: "I am in charge and you can't stop me."	"Would you please do the helper job for me today?"
Revenge	Deliberately hurts or plans to hurt others, either emotionally or physically.	Deep psychological problems. Has been deeply hurt and lashes out in retaliation.	Never say you are hurt by what the child does. Often outside expertise is needed to make real changes in this behaviour.
	Perception of the child: "Vicious."	Message from the child: "I hurt and I'm going to make you hurt, too."	Alert administration early to the need for help.
Assumed Disability or Learned Helplessness	Passive responses to requests. Feels overwhelmed, helpless, or discouraged.	Basically a serious issue of self-esteem.	Work on building self-esteem. Break tasks down into smaller, more manageable pieces.
	Perception of the child: "Hopeless."	Message from the child: "Don't expect anything of me. I am a failure."	Focus on being "success oriented."

Punishment can control misbehaviour, but by itself, it will not teach desirable behaviour or even reduce the desire to misbehave.

~ Faber & Mazlish, 1995, p. 102

GLOSSARY

Reactive—to give a primary response to a situation or stimulus when it occurs.

Proactive—to anticipate potential problems in advance and have a plan for addressing these issues.

The Importance of Being Proactive

In any classroom management situation, teachers can basically respond in one of two ways: by being reactive or proactive. Since reactive responses tend to be more emotionally charged and can therefore put one at a distinct disadvantage when dealing with students, it is best to think things through beforehand and have a workable plan for responding to most circumstances. By doing this, teachers are less likely to get drawn into experiences that escalate beyond their control. The key is to deal with an issue or challenge before it becomes a problem; to be proactive rather than reactive.

Proactive teachers are more in control of situations because they

- anticipate potential problems
- involve the students in setting reasonable and manageable guidelines for behaviour
- have a plan of appropriate action to follow
- have alternate approaches to try if certain ones are not effective
- consistently monitor and follow through on potential problems

The secret in education lies in respecting the student.

~ Ralph Waldo Emerson

The statement above highlights one of the most important things that a teacher can do: If teachers treat children with respect, children will give it back tenfold! When teachers model mutual respect in the classroom and it is expected of all parties, more productive levels of learning will result (Lewis et al, 1996). Modelling a respectful, polite tone in interactions, showing compassion and consideration when students are unsure of how to respond, and being enthusiastic about one's profession can go a long way in preventing the development of management issues within the classroom right from the start.

Anticipating Potential Problems

Having an anticipatory mindset is a valuable starting point for planning effective classroom experiences and dealing with classroom management issues. By anticipating potential problems, teachers can predict which areas are most likely to be of concern, and have a workable plan in place to deal with potential problems. This process enables teachers to be proactive in approaching classroom management.

Involvement of Students

One of the most effective and yet easiest strategies to implement in the classroom is to involve the students in devising the rules for how the classroom will be managed. If students are directly involved in creating the rules, they will be more likely to follow them. As suggestions are given by the students, teachers should record them on a chart which can subsequently be posted in the classroom as an ongoing visual reminder and reference. This strategy relates strongly to the whole issue of developing and encouraging autonomous behaviour in students (Kamii, 1991).

Another important aspect of classroom management is Kounin's "ripple effect" (Kounin, 1970). Jacob Kounin, one of the earlier researchers to systematically examine the issue of classroom management, noted that when the teacher focuses attention on the inappropriate behaviour of one student in a straightforward manner and the message is clear that such actions are not acceptable, the behaviour of the whole class is affected. One of Kounin's greatest contributions, however, was his focus on the importance of "withitness"—the degree to which a teacher has a keen awareness of and ability to sense potential issues or behaviour problems in students (Kounin, 1970).

In more recent years, the focus has shifted to address the importance of establishing an atmosphere where there is positive cohesive bonding and a sense of community within the classroom. Relationships within the classroom are recognized for the powerful role they play in determining how smoothly the daily business of the classroom can be accomplished. When all students feel a sense of belonging, they work harder and accomplish more (Lewis et al, 1996).

Having a Plan of Action: Dealing Proactively with Classroom Management Problems

When dealing with classroom management issues, it is essential that teachers have a plan of action for dealing with problems that arise; this is an important part of having a proactive management style. When dealing with problems within the classroom, teachers begin with milder forms of action and gradually increase their responses until a level of success is reached to manage the misbehaviour. Table 7.2 outlines a comprehensive list of strategies to guide teachers in managing student behaviour from the very beginnings of misbehaviour, through the development of persistent patterns of misbehaviour, to misbehaviour that requires more formalized, documented responses.

Table 7.2 Strategies to guide teachers in managing student behaviour

The Problems Begins	The Problem Persists	The Problem Escalates
Action: Low Key Responses	Action: The Teacher Focuses	Action: Things Become Formalized
When behaviour first starts to become a problem, the teacher responds initially using low key responses that do not overtly interrupt the progress or flow of the lesson.	When low key responses do not work, more specific strategies must be brought into use.	When all previous attempts fail, an even stronger response is required to bring the situation back under control
Some of these responses include: <ul style="list-style-type: none"> • Ignoring the behaviour (it may self-correct) • Pausing briefly to focus attention • Pausing and giving ‘the Look’ • Moving to closer proximity (beside the student) • Making a gesture to indicate what is expected (hand signal) • Saying the student’s name 	Some of these responses include: <ul style="list-style-type: none"> • Directing attention to the problem (limited verbal interchange) • Offering a choice (participate or withdraw; now or later) • Applying an implied choice (you mean what you say) • Defusing the power struggle (never argue; your agenda; both save face; time out) • Setting an informal agreement (private chat) • Set boundaries and have an agreement by the end of the meeting. 	Some of these responses include: <ul style="list-style-type: none"> • Formalizing of a contract (outlines specific expectations) • In-school Suspension (Administration takes over)—supervision done by administration staff • Out-of school Suspension (very serious level of response)—results in a specified time away from school • Expulsion (most serious response)—lengthy duration or permanent removal from school
These strategies are not arranged in any hierarchical order but are used according to the individual circumstances.	These strategies demonstrate an increase in the amount of interaction and specificity of instructions. Alert Administration to persistent problems.	These responses are reserved for the most serious behaviour problems. Decisions are made by senior administration.
Guiding principles: It is important to say, “Thank you” to each positive response on the part of the student. It is important for students to be able to maintain their dignity!		

Adapted from Dreikurs, 1971; Bennett & Smilanich, 1991

Teacher Responses: Some Basic Tenets of Classroom Management

- **Always treat students with dignity and respect:** Without dignity, students learn to reject school and learning. Teachers might be able to get them to follow the classroom rules, but lose them to anger and resentment. Above all, teachers must maintain or enhance their self-esteem, for example, there should be no sarcasm, put-downs, criticism, scolds, or threats delivered publicly.

- **Engage in and model active listening.** Teachers need to be open to feedback from students and to use “I-messages” to communicate their feelings to students. These messages tend to be less accusatory and reduce the pressure on students, thereby enabling them to “save face,” for example, “I prefer that you listen quietly when others are presenting.”
- **Keep the lines of communication open.** Teachers should explain why they want something done in a certain way and how students will benefit. Give students some say in the decisions that govern the running of the classroom, for example, “If we all put things back where we found them in the first place, then there would be no missing parts of the game.”
- **Teachers should never try to discipline a child when they are angry.** When teachers are angry, it is particularly important to remain calm and keep their dignity. If they react, the situation will likely escalate and the ensuing power struggle will only get worse. Think of this as an opportunity to model appropriate behaviour for the students, for example, “I will talk to you right after class when you have had a chance to think about your behaviour.”
- **Use the PEP strategy (Privacy, Eye contact, Proximity) to deliver a corrective message.** Comment quietly (where only the teacher and the student can hear) while maintaining eye contact (subject to culture considerations), in close proximity.

(Curwin & Mendler, 1999)

MORE INFORMATION

For more information on classroom management, see “Rewarding democracy/ class management” by Constance Kamii on the companion website.

REFLECTIVE PRACTICE

Allan has been experiencing some difficulty for about a week in managing his behaviour. Today his anger spills over when he is questioned about why his homework is not done (again). He throws his notebook on the floor and tells his teacher to “get out of my face.”

Put yourself in the role of the teacher in this scenario. Think about the following questions:

- How would you interact with Allan?
- What strategies would you introduce to defuse the situation?
- How would you seek to discover the underlying reasons behind his behaviour?
- How would you ensure that this kind of response does not spread to other class members?

QUESTIONING SKILLS

Being good at questioning is one of the most important skills that a teacher must possess. Indeed, most teachers continue to work on this skill throughout their professional careers. Looking at this from the teacher's perspective, or even from outside the profession, the need to focus on this particular skill might seem to be obvious but, due to its powerful influence on student learning, it must be emphasized. No matter how well-prepared teachers may be or how interesting the curriculum, their teaching will not be as effective unless it is accompanied by appropriate questioning techniques to facilitate learning during discussions.

As a profession, teachers are aware of the need to use different kinds of questions as they interact with students. For several decades, Benjamin Bloom's (1956) work has been a definitive guide to assist teachers in this area.

Bloom's Taxonomy

Bloom and his associates identified the following cognitive levels or levels of thinking in hierarchical order (from lowest to highest):

- **Knowledge Level**—able to recognize and recall facts and symbols
- **Comprehension Level**—able to understand, interpret, or summarize ideas in own words
- **Application Level**—able to apply an abstract idea in concrete situations, solve a problem, and relate it to prior experiences
- **Analysis Level**—able to break down a concept into its component parts; able to identify relationships among components; sees cause and effect; sees similarities and differences
- **Synthesis Level**—able to put components together in new and original ways; creates patterns or structures that were not there before
- **Evaluation Level**—able to make informed judgments about the value of ideas or materials; supports opinions and views using standards and criteria

(Bloom et al, 1956)

Questioning and Bloom's Taxonomy

Bloom's research highlighted how the different types of questions that

are asked, in turn influence the kind of thinking that is generated in children. A rather disturbing finding from his research indicated that more than 70 percent of the questions that teachers ask on a daily basis are at the lower levels of his taxonomy (Bloom et al., 1956). Thinking at a basic level is encouraged if children are primarily exposed to lower level questions. This kind of questioning can obviously influence whether or not children are able to see beyond simple interpretations of factual information.

Teachers can enhance their questioning ability by becoming skillful at using “scaffolding” techniques as part of their questioning repertoire. In doing so, they enhance children’s understanding and assist students in becoming more aware of the interconnections between and among ideas. Through skillful questioning, teachers help students to focus their attention on details, call forth expertise, and see more global connections in their learning. In short, the right kinds of questions and questioning techniques naturally energize the entire learning and teaching process.

Bloom’s levels represent the full range of cognitive functioning, up to and including adult levels, and are not necessarily demonstrated by all children. For example, younger children, due to their highly egocentric nature, relatively narrow range of experiences in comparison to older students or adults, and relatively incomplete neurological development, initially focus more on the lower levels of Bloom’s Taxonomy. This does not mean that teachers should not ask higher level questions of younger students. It just means that teachers must be sensitive to the fact that younger students will only be able to respond to questions on the basis of their own personal experiences which are, naturally, more limited in this age range. This is, once more, an example of “you can’t put an old head on young shoulders.” In the later primary grades, complex questions can be included to be applied with greater consistency to more difficult concepts.

The following chart provides an effective reference for teachers to use in improving their questioning skills. It outlines not only the different levels, but also indicates what both the teacher and student should be doing.

Table 7.3 Bloom's taxonomy of cognitive objectives

AREA OF TAXONOMY	DEFINITION	WHAT TEACHER DOES	WHAT STUDENT DOES
KNOWLEDGE	Recalling specific bits of information	Directs Tells Shows Examines	Describes Selects Remembers Recognizes
COMPREHENSION	Understanding material communicated without relating it to other material	Demonstrates Restates Questions Compares Examines	Explains Summarizes Demonstrates Concludes
APPLICATION	Using methods, concepts, principles and theories in new situations	Shows Facilitates Observes Organizes	Solves problems Demonstrates use Constructs Reports
ANALYSIS	Breaking down information into its component parts	Probes Guides Observes Role plays	Discusses Classifies Lists Dissects
SYNTHESIS	Putting together component parts to form a comprehensive whole	Reflects Extends Reorganizes Analyses Evaluates	Discusses Generalizes Relates Compares Contrasts Predicts
EVALUATION	Judging the value of materials and methods; applying standards and criteria	Accepts Reveals criteria Concludes Harmonizes	Judges Disputes Debates Critiques

While each of these levels has a definite role to play in the cognitive functioning of the individual, Bloom felt that problem solving was best suited to the higher levels of application, analysis, synthesis, and evaluation levels.

MORE INFORMATION

For more information on useful questioning techniques, see "Maximizing learning for all students" by Kathy Checkley on the companion website.

More Views on Questioning

In many classrooms, teachers use standard questioning triggers such as the "5 Ws" to guide and remind them about varying the types of questions they use with students.

Who? Where? When? What? Why?

Indeed, these are important elements to remember. All too often, however, the questioning of students stops at these five. Close examination of these types of questions reveals they have mainly one thing in common: With the exception of “Why,” the rest of these questioning triggers focus primarily on factual responses. This kind of questioning focuses on **convergent thinking** and on usually eliciting one expected response or “right” answer. If memorizing factual information was all there was to learning, this might be considered an effective strategy. However, since the type of questioning used with students determines and even generates the kind of thinking in which they will engage, it is imperative that teachers be familiar with using higher levels of questions to elicit higher levels of thinking. Therefore, teachers need to ensure that students are challenged, not only to seek out factual details to use as a common base of information, but also to search for different interpretations in giving responses to questions; in other words, to incorporate **divergent** as well as **convergent** thinking into their problem solving repertoire.

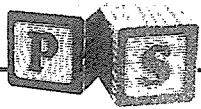
As well, teachers need to ask more “process” questions, which are much more divergent in their orientation. For example,

How? Why? What if?

The benefits of using these kinds of questions are listed below.

- “**How?**” focuses on the process that is happening.
- “**Why?**” focuses on the reasons behind something or the interconnections between and/or among ideas.
- “**What if?**” focuses on various possibilities if things are tried in different ways.

Convergent questions are not superior or inferior to divergent questions. Rather, the important thing is to ensure that teachers regularly use both kinds of questions in the classroom. Convergent questions serve an essential role in providing students with a common base of specific, factual information from which to pursue their learning in greater depth. Divergent questions serve an equally vital role, however, in providing students with greater insights into the range of relationships and connections that exist between and among ideas. The following example illustrates how using more “process” types of questions can be beneficial to students’ learning.



PERSONAL STORIES

Enhancing Questioning Skills

A grade 6 class was given the task of designing and making a robot as a follow-up to a unit on "Motion". The robots were to be made from various scrap materials, including gears, springs, washers, screws, nuts, and bolts from the class "Take Apart Centre".* An additional requirement was that the robot had to incorporate some form of motion, tying it to the curriculum unit being studied.

When the robots were completed, each student presented his or her robot to the class, explaining the design and the function of the robot. At the end of each presentation, the class was given an opportunity to ask questions of the presenter. When the presentations began, the class asked very simple and predictable questions of the presenter:

- "What job does your robot do?"
- "Where would you use your robot?"
- "When would you use your robot?"
- "Who would use your robot?"

*The "Take Apart Centre" was an activity provided to give older students experiences to stimulate problem solving and generate interest in individual projects, while enhancing their fine muscle control (a common need for this age level, particularly among boys!). The teacher provided simple tools such as a hammer, pliers, wrenches, screwdrivers, clamps, and safety glasses to assist the students as they dismantled various small appliances or motors. The teacher clipped any appliance cords for safety's sake and provided various containers to hold the inevitable stray pieces to facilitate sorting and organizing the materials. The teacher initially introduced the centre by providing an old alarm clock; from then on, the students provided a wealth of things to work on through the school year.

After a couple of presentations, the teacher became frustrated at the lack of depth to the questions being asked, and she called the students' attention to the need to ask more processing questions. They discussed how the questions being asked only required a simple answer, and how these questions could be expanded to promote even higher levels of thinking. The teacher then purposefully demonstrated the use of more divergent questions. Within a very short time, the students were asking more thought-provoking questions and the level of thinking as well as discussion appeared to increase dramatically:

- "Why did you design your robot that way?"
- "How did you make your robot so it would move back and forth?"

Since they still had some problems generating even more abstract kinds of questions, the teacher demonstrated the following:

- "What if your robot had to work in a temperature of 200°C?"
- "How would you modify it?"

The examples above illustrate how much more thought is required on the part of both the people asking the questions and those providing the answers when using process-type questions. This also highlights the fact that there are many possible answers for each question, and that the students are required to justify their responses more when they are responding to more complex questions.

In response to this experience, the teacher realized she needed to post reminders—in the form of visual clues—within the classroom

to help students remember to ask different levels of questions. This helped promote more student metacognition about their own questioning skills as they became more aware of what they were doing.

It is interesting to note that the teacher also reported enhanced questioning skills on her own part, since she also used the visual reminders to help her vary the kinds of questions she asked.

Another simple strategy that can facilitate appropriate discussions in response to presentations is the use of “Two Thumbs Up and a Wish.” This strategy works well for all ages, and requires the students to respond to a presentation by telling the presenter two things that they liked about what was presented and telling the presenter one thing that they wish had been included. This strategy also enables them to be more critical in their thinking while still being positive and supportive of the efforts of their peers.

The Importance of “Wait Time”

Adults spend nearly ninety percent of their time in the interrogative when they are around children—the questions are non-stop.

~ Bob Samples, 1987, p. 168

Mary Budd Rowe’s (1974) contribution to the whole area of questioning has been invaluable to teachers. Her concept of “wait time” had an immediate effect on the quality of teachers’ questioning. According to her research, the average teacher waits less than three seconds after asking a question before asking another question on the same topic. She found that when teachers waited or extended this time frame by as little as from three to five seconds, more students were able to answer the questions and the quality of their responses improved dramatically (Rowe, 1974). Her research is consistent with what is currently known about how the brain functions—the preference on the part of the brain to “mull things over” in its search for meaning and to establish a meaningful context for remembering (Jensen, 1998). In response to this important research, teachers need to

- refrain from rushing in to ask auxiliary questions or “stacking” questions when answers are not immediately forthcoming
- allow for more thinking time for students in the questioning process
- develop more of a tolerance for “dead air” once a question has been asked

Incorporating Cooperative Learning Strategies into Questioning

Today, many teachers incorporate cooperative learning strategies into their repertoire of skills to enhance their questioning even further. For example, by using such effective techniques as **Think–Pair–Share**, teachers are able to focus the students' attention specifically on the question being posed and, in doing so, enhance the responses that students make (Lyman, 1992). This strategy is most effective in that not only does it incorporate appropriate levels of "wait time," but it also encourages greater involvement on the part of the students. The Think–Pair–Share process is as follows:

- Initially, students are asked to **think** about a question individually and are given a short period of time to ponder it on their own.
- Then, they discuss their ideas quietly with a **partner**, who is sitting close by.
- Lastly, they are given opportunities to **share** their ideas with the rest of the class.

Teachers find that using just this simple strategy ensures that no one is left out, that greater attention is focused on the task, and that enhanced involvement is facilitated. Many teachers report that using this strategy virtually eliminates the common response of "tuning out" once someone else has raised their hand and volunteered an answer.



REFLECTIVE PRACTICE

According to Bob Samples, (1987, p. 106) "Children never give a wrong answer... they merely answer a different question. It is our job to find out which one they answered correctly and honour what they know."

Form groups to discuss the merit of Samples' observation. Next think about the following questions:

- How might a teacher identify such a question—i.e., a question that is answered correctly but is not the one that had been posed?
- How could this be explained to the other students?
- This statement may seem to be a contradiction. Why might it be important to address this issue?

ORGANIZATION STRATEGIES

In classrooms today, many different things happen at the same time and classrooms function far more fluidly compared with their earlier counterparts. Less and less classroom time is dominated by the teacher as the central focus at the front of the room—"the sage on the stage" approach. In contrast, many classrooms operate in an atmosphere similar to a busy workshop, with students engaged in small group work or individual projects while the teacher circulates, giving individual or small group instruction and support—"the guide on the side" approach.

This provides a more dynamic flow for how the classroom functions throughout the school day. At times, these changes can generate many questions or even concern on the part of some parents, because these approaches are far removed from what they may have experienced in their own schooling. Therefore, it is essential that teachers ensure parents fully understand these changes, how they are being used, and what the benefits are to the students. As parents become aware of the reasons behind these changes, they develop understanding and, what they understand, they can begin to support.

Teachers recognize that learning happens in a variety of contexts, students need elements of choice in their learning, and individual learning styles must be incorporated into the classroom structure. This leads to an examination of some of these organizing structures.

Different Organizing Structures

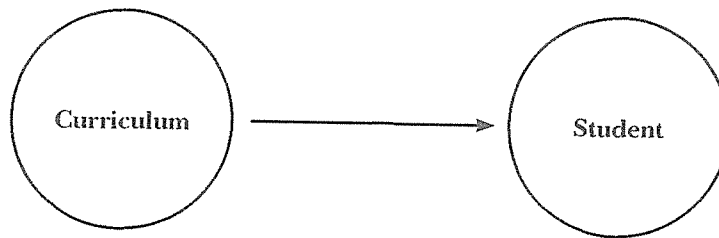
Despite changes in how education is handled in various classrooms, some elements remain the same. The important factor is that students need to experience balance in the ways that they learn. Within a balanced approach, students still have information presented to them from time to time as a whole class, they have opportunities to work in small groups, and they have a chance to become engrossed in individual projects. It is important, therefore, to understand some of the different curricular and instructional contexts in which learning can occur:

The Three Ts: Transmission, Transaction, and Transformation

J.P. Miller outlined three different positions for describing curriculum and instruction practices (Miller, 1993).

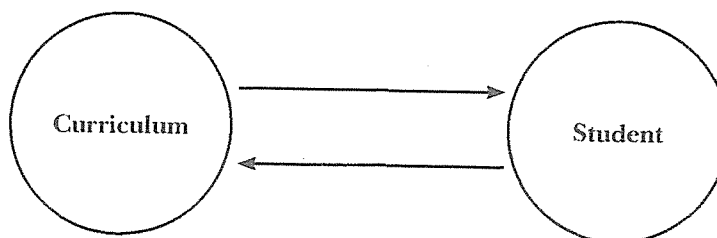
1. **Transmission:** The transmission approach is typically associated with traditional teaching practices. It has been described as a mechanistic view of teaching and learning which is reminiscent of Skinner's behaviourist views. Within this approach, the student is perceived as a passive receptor of information presented by an outside source or authority. Information is separated into discrete bits and is presented in isolation with little attempt to show any connections between or among ideas. This approach is attractive to some educators since acquisition of knowledge using this approach is more easily measured, tested, and verified. Factual information is the order of the day in this position! The following diagram illustrates the one-way nature of this method of instruction.

Figure 7.1 Transmission



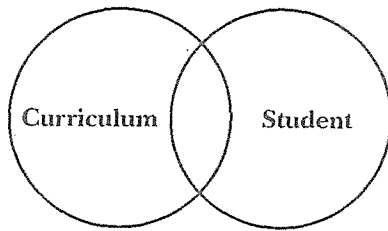
2. **Transaction:** The transaction approach, in contrast, is much more focused on the role of the individual in his or her learning. The focus in this approach is on interaction between the students and the curriculum through problem solving, inquiry, and reconstruction of knowledge. Since interaction with the curriculum is important in this position, the teacher's role is as the conduit for the exchange of information between the child and the curriculum. Assessment involves both awareness of and facility in social interactions, as well as problem solving ability. The following diagram illustrates the interactive nature of this approach.

Figure 7.2 Transaction



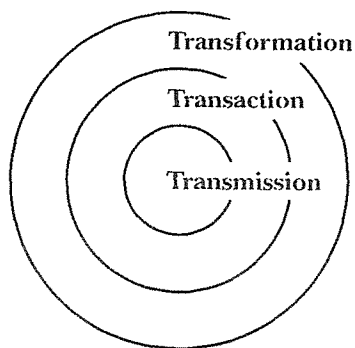
3. **Transformation:** The transformation approach is focused on personal and social change. The child and the curriculum are seen as connected in a holistic manner. Miller saw two strands within this position: humanistic and social. The humanistic aspect is concerned with individual growth and the social is concerned with social change. Thus, growth of self and self-actualization are key components. Assessment in this position is expanded to include self as well as peer-evaluation, and using reflection as a valuable skill. The following diagram illustrates the dynamic nature of this position.

Figure 7.3 Transformation



Miller did not intend that these three positions necessarily be exclusive of one another, but rather that each one be more inclusive than the previous one(s). For example, the transmission position of basic recall of knowledge could be incorporated into the transaction position as a necessary part of the problem solving process, and the more holistic transformation position could incorporate the transaction position into a broader context or world view. The following diagram illustrates the interrelated nature of Miller's three positions.

Figure 7.4 Interactive nature of the three positions



Miller's research provides teachers with an important backdrop against which to consider different methods of instruction: whole class, small group learning, cooperative learning, and individual learning.

Whole Class Instruction

Presenting information to an entire class at the same time does have some obvious benefits, in terms of delivery.

- It is a fairly efficient means of presenting a common message to a group of students within a relatively short time frame.
- It can serve to give the appearance of covering a lot of information quickly.
- It can be perceived as an effective use of the teacher's time since lessons, in theory at least, are considered to be covered and therefore will not have to be taught again.

There are, however, some limitations to using this approach, especially if it is used as the primary source of teaching instruction in the classroom. Of prime importance is the fact that such an approach does little to meet the different needs of individual students. This approach makes several serious assumptions.

- It assumes that all students are ready to receive the same information at the same time.
- It assumes that the students all have similar background experiences in terms of having already established a meaningful context for their learning.
- It assumes that all students learn in exactly the same way.

In addition, there are other potential areas of concern.

- Problems with classroom management are more likely to arise when students are sitting passively and are not actively involved in the learning process.
- Attention to the content will not be as keen when students are only asked to answer the teacher's questions instead of generating some of their own.
- Individuals may be more able to hide their lack of understanding when working in a large group setting.
- A few students can dominate and leave other students out of the class discussion.

All of these problems are more likely to arise when the instruction takes place in a whole class setting, where students play a much more passive role. When information is delivered in this manner, it is reflective of the "Transmission" position (Miller, 1993).

Small Group Learning

Learning in a small group setting has some obvious benefits in terms of student learning.

- Students are called upon to participate more frequently within a smaller group.
- Students feel less threatened working within a small group.
- A spirit of cooperation and support is facilitated more easily.
- More direct involvement in the learning is enabled.
- More problem solving is encouraged.
- Better use of learning materials is evident since these can be shared more equitably.
- Opportunities are provided for different strengths to be developed and validated.
- Leadership skills are facilitated and developed.
- Social skills are practised and learned as students interact with one another.



This approach is not used all the time, but is incorporated to address those learning experiences that can benefit from small group interaction. It is particularly noteworthy that this approach provides many instances where individual needs, strengths, and interests can be accommodated.

Some areas that need to be considered so that small group learning function effectively include the following:

- Expectations for behaviour must be absolutely clear.
- The group's task must be carefully explained.
- Appropriate learning materials must be available and accessible to the students.
- Careful, consistent monitoring and interacting on the part of the teacher must be a prominent feature.
- Social skills must be taught and modelled before small group work begins.

Within a small group setting, students are engaged in more interactive learning. When learning occurs in this manner, it provides an appropriate focus for the development of the “Transaction” position (Miller 1993).



COOPERATIVE LEARNING

There can be several different responses in terms of interaction. Basically, interaction can be competitive, individualistic, and cooperative. (Johnson & Johnson 1991)

While most adults would support a competitive learning environment, **competitive** interactions do not always result in positive outcomes since there is usually only one winner, and therefore many losers. A major difficulty with competition is that, inevitably, competition can produce conflict (Yardley, 1991).

Individualistic interactions occur when individuals pursue personal goals on their own. While this can result in individual excellence for some, it does little to foster the necessary interactions and cooperation that expose learners to the ideas of others and develop the social skills that enable all people to function better in society.

Cooperative interactions, in contrast to the other two, promote interdependent goal achievement and foster concern for the well-being of others (Johnson & Johnson, 1991).

It is alarming that, in the current educational scene, more emphasis is being placed on the delivery of a very specific curriculum and the high levels of narrowly focused accountability that accompanying such approaches. As a result, many classrooms are organized primarily for competitive-individualistic learning. The challenge, then, is for educators to balance this situation by incorporating a wider range of experiences to enhance children’s learning through character development and encourage development of broader world views.

What is Cooperative Learning?

One of the major characteristics of cooperative learning is that it provides a planned situation in which students are helped to cooperate with and support one another in their learning. In addition, when people work together, they learn different kinds of communication skills—those which have more of a process orientation. Cooperative learning is characterized by the following features:

- It is organized in mixed ability (heterogeneous) groupings.
- Students work toward a common goal.
- It is success-based (for all).
- The overall focus is on academic improvement.

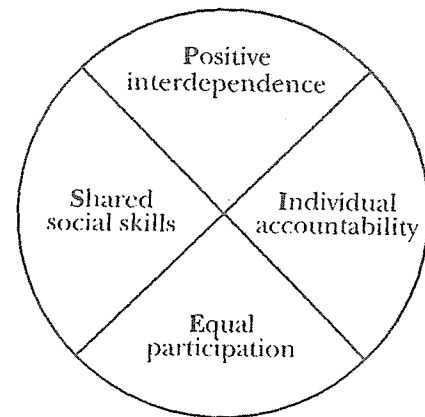
Skills that are taught in cooperative learning include

- leadership
- decision-making
- trust-building
- communication
- conflict management

(Johnson & Johnson, 1991)

Johnson & Johnson (1991) proposed the following mnemonic device to help people remember the necessary components of a cooperative learning experience.

Positive interdependence
Individual accountability
Equal participation
Shared social skills



As an addendum to this reminder, Spencer Kagan, cooperative learning guru, quipped, "Everyone loves **PIES!**"

To facilitate cooperative learning in the classroom, experts recommend that about 25 percent of class instructional time be devoted to cooperative learning (Kagan, 1992). It should also be noted that unless these four main characteristics are in evidence, then the experience may be group work but it is not cooperative small group learning.

The following are but a few examples of some cooperative small group learning strategies:

- Round Robin—students give input, in order, by proceeding in a specified direction around a group.
- Jig Saw—students start out in home groups where they assume a role of becoming a specialist in one aspect of a topic, on behalf of their group. They move to a mixed group with representatives from all other groups where they receive specific input and become

specialists in one area. Then they return to their home group to teach their home group members about this part of the information from their area of expertise. Other group members share until everyone has learned all information from all the experts in their home group.

- **Numbered Heads Together**—a group is established and members number off. Sharing is done on the basis of calling out random numbers of group members.

What Does Cooperative Learning Look, Sound, and Feel Like?

- | | | |
|---|--|--|
| - sitting close to one another | - working toward a common goal | - helping others and being helped |
| - feeling responsible for myself and others | - being accountable on an individual basis | - sharing responsibility |
| - discussing a task together | - using social skills | - caring about my classmates |
| - sharing learning materials | - feeling good about myself and my contributions | - helping everyone learn |
| - trying out different roles | - sharing leadership | - recognizing that we all have different strengths |

Benefits of Cooperative Group Learning

A growing body of research has identified the many benefits to student learning when cooperative learning approaches are used. In particular, low-achieving and average students seem to derive the greatest benefit (Kagan, 1992; Johnson & Johnson, 1991; Bennett et al, 1991). In addition to achievement, there seems to be a basic need that is answered by using cooperative learning approaches.

The following benefits can be derived from using cooperative learning strategies in the classroom:

- Improved academic achievement
- Greater motivation to learn
- More effective problem solving strategies
- Curriculum related to interests, life experiences, and values
- Development of communication skills
- Use of higher levels of thinking

- Greater acceptance by peers
- Awareness of own strengths and weaknesses
- Enhanced active involvement in own learning
- Development of more positive attitudes toward self and others

(Johnson & Johnson, 1991; Bennett et al, 1991)

Schools should be a place where students help one another to become who they are, to achieve all that they can, and to accomplish this in an atmosphere of caring and support.

The Goals of Cooperative Learning

Within cooperative learning groups, students engage in interactive learning which often replicates real-world experiences and, in doing so, facilitates the development of heightened social responsibility. When learning occurs in this manner, it provides an appropriate venue for the development of Miller's "Transformative" position (1993). Learning where transformation is the goal can be incorporated into many different learning environments and approaches. Sometimes, this requires great patience on the part of the teacher since this degree of change may be difficult to ascertain within the confines of a single academic year. In some cases, it may take years for this kind of change to become evident.

Individual Learning

In addition to learning in both large and small groups, students need to spend time following their own interests and working independently. This will provide them with opportunities to delve into areas of specific interest, to develop perseverance in pursuing learning to a degree that reflects not only each individual's temperament but also their preferred learning style, and to bolster individual self-esteem and level of confidence. Often this can be effectively accomplished by using individual written contracts made between the student and the teacher which outline specific goals, timelines, and expectations for both parties.

When students work on individual projects, some form of monitoring system must be put in place so that steady progress toward goals and timely completion of all work can be ascertained. Often teachers

MORE INFORMATION

For more information on cooperative learning, see "Cooperation works!" by Dianne Augustine on the companion website.



develop a tracking sheet which can be quickly checked by both the student and the teacher. Individual work also provides unique opportunities for students to engage in meaningful self-reflection, and the provision of forms, prepared by the teacher in conjunction with the student, become valuable tools to facilitate awareness of strengths and areas for improvement.

The important thing to remember is that all students benefit from having balance in the kinds of groupings they experience. In this way, their learning styles, interests, and preferences are all taken into account in the teaching-learning process. Jot down the advantages and disadvantages of whole class, small group, and individual learning. Share your ideas with members of your class.

THE INTEGRATED DAY APPROACH

It is important to consider how these ideas and approaches can be combined and demonstrated in a practical sense within the classroom. Over the years, many different approaches have been experimented with to determine methods which enable students to become more involved in their learning, more independent in their thinking, more empathetic in their interactions, and more creative in their problem solving. One approach that has met with success is the integrated day.

In the integrated day approach, the flow of the day centres on children

- making choices about what and how to learn
- asking and pursuing their own questions and interests under the guidance of the teacher
- working cooperatively with others in a workshop atmosphere
- tracking their own choices throughout the day
- taking responsibility for their learning
- reflecting on their own learning as well as the learning of others

When teachers make a concerted effort to involve students as active participants in how the classroom functions and in becoming a community of responsible learners, the integrated day can be an exciting next step. In addition to fostering autonomy, this approach sets learning within a more meaningful context where all aspects of learning are seen as being interconnected. Many different life skills can also be learned within the integrated day approach.