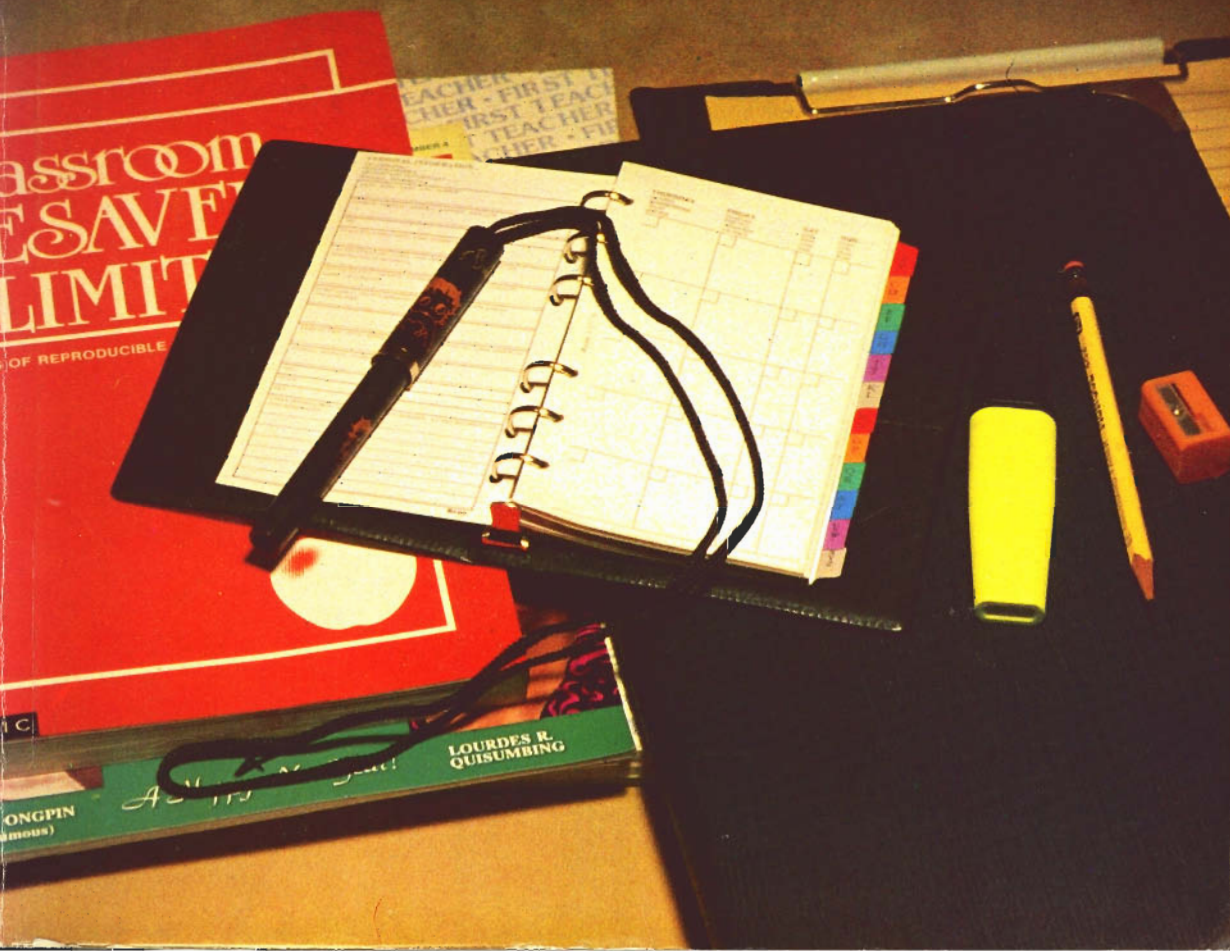




THIRD  
EDITION

# Principles and Methods of Teaching

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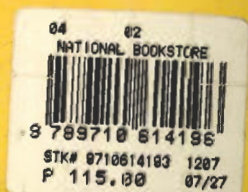
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Amparo S. Lardizabal  
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# Principles and Methods of Teaching

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**Third Edition**

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# **PREFACE**

This book is intended primarily for beginning teachers who need to have a strong foundation and thorough grasp of the teaching-learning theories and principles. It is also intended for teachers who are already in the service and who want to improve their competency and to update themselves on current trends, techniques, and approaches in the teaching profession.

There are ten chapters of the book and each chapter presents, describes, and discusses carefully the different principles, methods, techniques, and approaches in teaching.

Chapter 1 starts with a discussion of the teacher and his responsibilities to the profession. The chapter also gives insights into the personal and the professional qualities of an effective teacher. Chapter 2 deals with the teaching and learning principles and their effect on methodology. Chapter 3 gives pointers on how to plan lessons as well as on how to write and frame instructional objectives. Chapter 4 provides the learner with a discussion of the types of lessons applicable to different disciplines as well as the steps involved in the presentation of the lessons. Chapter 5 gives the reader the time-tested methods, complete with discussions on the uses, steps, and corresponding cautions. Each method is also illustrated in sample lesson plans which have been successfully tried out by teachers in their particular classes. These time-tested lessons are followed by a presentation and explanation of improved methods of teaching, including the discussion procedures in chapter 6. In addition, current approaches to teaching have also been included and sample lesson plans for these approaches are provided in this chapter. Chapters 7 and 8 discuss the various materials or aids necessary to effective teaching. Chapter 7 deals with multisensory aids, while chapter 8 discusses the recitation, the assignment, and the art of questioning. Any teacher conversant with their correct use will find it easy to apply them in their everyday teaching. Chapter 9 presents and

discusses the importance of classroom management to effective teaching. To cap all the discussions in the previous chapters, chapter 10 gives ample theories and suggestions for proper assessment of instructional objectives. Evaluation procedures are explained and their underlying principles are identified. Sample lesson plans are likewise provided to illustrate the feasibility of applying theory into practice.

The authors attempted to give the teacher a ready reference for trends, effective approaches and methodologies, and improved techniques for teaching. Current strategies in teaching have been included in an effort to equip the teacher with up-to-date materials on teaching methodology.

Lastly, the book is dedicated to all who believe that there are better and more effective ways of teaching. After all, effective teachers are not born; they are made.

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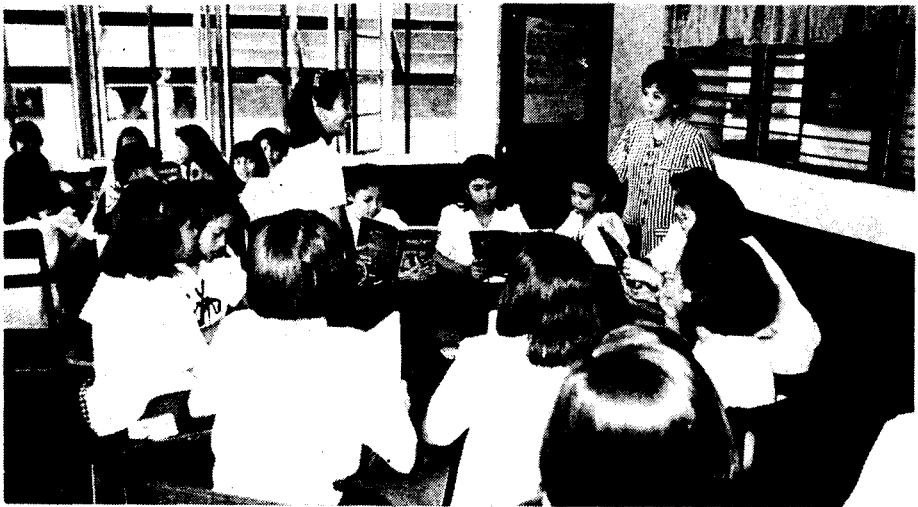
## THE TEACHER AND HIS PROFESSION

### OBJECTIVES

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1. To know and understand the various tasks and responsibilities of a teacher
2. To gain insight into the professional and personal qualities of an effective teacher
3. To realize the importance of undergoing preservice and in-service education for professional development
4. To understand and realize the need for a teacher to be governed by specific rules in his personal and professional conduct

What makes a good teacher? This is a question which every young person who is contemplating to become a teacher must fully consider. A great deal



*The teacher's task requires that he possesses a wide variety of positive personality traits and professional qualities.*

has been said of teaching as one of the most important professions from the standpoint of human welfare. Properly understood, however, it is also one of the most technical, difficult, and challenging professions.

To know what makes a good teacher, one must know the task of a teacher. Experiences of successful teachers have shown that the teacher's job is not confined solely to the transmission of knowledge and information. Some modern technological devices such as teaching machines, television, films, and computers can do that. What is more important is the teacher's personal influence in promoting the development of basic skills, understanding, work habits, desirable attitudes, values, judgments, and adequate personal adjustment of the learners. It can be said that teaching is effective to the extent that the teacher acts in ways that are favorable to the development of a desirable personality in the learner.

What do the above statements imply? The implication is that the task of a teacher is complex and many-sided and demands a variety of human traits, abilities, and competencies. It is a task that calls for an assessment of one's own personal qualifications and a genuine desire to improve on them.

Although various studies have been conducted to define scientifically the distinguishing characteristics of an effective teacher, a common criterion has not yet been established. However, these studies generally point to two major categories in which the characteristics of an effective teacher may be grouped: (1) professional qualities and (2) personal qualities.

Professional qualities refer to the teacher's knowledge of general subject matter to be taught, his understanding of psychological and educational principles, and his understanding and appreciation of the teaching profession. Personal qualities are those that stem from the teacher's personality, his interests, attitudes, and beliefs, his behavior in working relationships with pupils and other individuals, and the like.

## PROFESSIONAL QUALITIES

What are the professional qualities of an effective teacher? From various studies made on this matter, the following emerge as basic qualities that have a definite relationship to teaching competence:

1. *Mastery of the subject/field one teaches.* The first essential of effective teaching is that the teacher must have a thorough grasp of the subject he teaches. This is contrary to the common notion that a teacher does not have to know very much to teach children. Effective learning demands that the teacher possesses solid knowledge of the subject or field that he teaches.

To master one's field is to keep on learning more about it. A teacher cannot simply learn the rudiments of the subject, master them thoroughly, and then stop. Everyone is aware that at present there is an explosion of knowledge in every field. If a teacher is to keep up with the newer developments in his area, he has to continue to learn.



It follows from this that if a teacher is to continue learning about his subject matter, *he must like it*. It is almost impossible for anyone to go on learning something he dislikes. As Gilbert Highet (1965) writes: "The teacher who dislikes his subject or is indifferent to it always runs the risk of becoming a hypocrite."

While it is true that the higher the grade level one teaches, the greater is the need for deep, specialized knowledge; today, depth in academic preparation is needed even in elementary level teaching. Because of this demand, even prospective elementary school teachers are expected to specialize in an academic area.

2. *Understanding of the learner.* A second essential of effective teaching is knowledge of children. This means understanding the basic principles of human growth and development. If a teacher expects to guide learning effectively, he must know how much children at various levels of maturity are capable of understanding. He must know their interests and previous experiences which he can utilize in motivating them. He must know the adjustments children have to make at various stages of development and the physical, emotional, and social problems they face in growing up. He must develop the special skills needed in gathering information about children.

It is not enough, however, for a teacher to know the characteristics of children. Equally important is that *he must like them*. One can hardly be expected to stimulate children's growth if he does not find any satisfaction in working with them. Only a teacher who has genuine and sincere love for children can imbue them with love for learning.







3. *Understanding of teaching principles and skill in the use of techniques for their implementation.* The old notion that "If a person knows his subject, he can teach it" is not true. To promote learning effectively, a teacher must know not only *what* (subject matter) but also *how* (method) to teach. Hence, the third essential of effective teaching is *skill with teaching methods*.

Teaching methods involve understanding of curriculum theory and practice, the nature and principles of learning, types of learning outcomes, and the psychology of motivation and individual differences which are bases for selecting and organizing learning experiences. Teaching methods also involve skill in the techniques of facilitating purposeful learning—discussion, questioning, group work, audio-visual materials, directed study, etc. They also involve skill in the techniques of various procedures in evaluating pupils' progress as well as techniques of classroom management. This is the skill which teacher-educators aim to develop in prospective teachers—the skill which is fully discussed in other chapters of this book.

4. *General understanding of other branches of knowledge.* Present-day teaching demands that a teacher possesses a general understanding of other branches of knowledge. If a teacher expects to help children understand and appreciate the world they live in, he must understand the interrelation and interdependence of the various areas of knowledge. He must be able to show how his subject relates with other fields, particularly in the solution of life's problems.

Furthermore, children at present have wide ranges of interest, background, experiences, and abilities. Even primary grade children talk with some degree of understanding about astronauts and space travel. A teacher, therefore, must be ready to cope with possible questions relating to other fields of knowledge children might raise. A broad general background is espe-

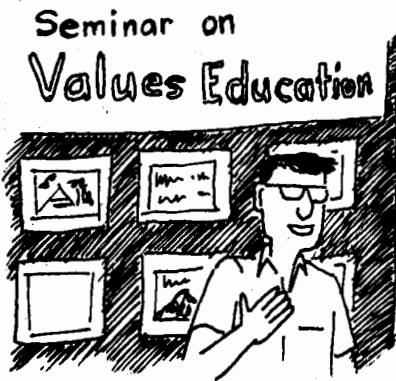


cially needed by the elementary schoolteacher of the self-contained classroom wherein he teaches the content of most subjects. Such a background must include the study of the arts, languages, philosophy, mathematics, literature, and physical sciences.

Though all these branches of knowledge are important, special emphasis is placed on the teacher's *communication skills*. Ability to communicate ideas effectively, to listen intelligently, and to read critically are considered essential to effective teaching.

5. *Understanding and appreciation of the teaching profession.* The degree of a teacher's success depends to a great extent on his attitude toward his job. Teaching involves varied relationships among various individuals. A teacher must know how to work effectively not only with pupils but also with all other persons involved in the school—administrators, coworkers, parents, and other members of the community. He must be aware of the value of high ethical professional relationships.

A teacher must understand the importance of his profession as socially useful work and recognize its rewards as well as its restrictions and trials. He must be aware of the value of professional organizations to himself and to education in general. Lastly, he must be aware of the need for keeping abreast with changes in education through various in-service education programs.



## PERSONAL QUALITIES

What are the personal qualities of an effective teacher? This is a question which educators find difficult to answer. Personal qualities are so interrelated with professional qualities that it is quite hard to isolate them. Besides, personal qualities are intangible and, therefore, difficult to measure.

Various studies, mostly on students' opinions, have been made to identify the personal qualities of an effective teacher. It is generally believed that students are the best judges regarding personal characteristics of teachers.

These personal characteristics are related to the five aspects of personality: intellectual, social, physical, emotional, and moral. Among those rated highly are the following:

1. pleasing personal appearance, manner, courtesy, pleasant voice
2. intelligence, emotional stability, and self-control
3. sympathy, kindness, helpfulness, patience
4. integrity, trustworthiness, honesty, loyalty
5. flexibility, creativity resourcefulness
6. sociability, friendliness, cooperativeness
7. fairness, impartiality, tolerance
8. sense of humor, cheerfulness, enthusiasm

In the Philippines, classroom teachers are rated by their supervisors to help them improve on their teaching performance. In rating a teacher, the supervisor evaluates the teacher's level of performance in the following instructional and personal/social competencies:

#### I. Instructional Competencies

##### A. Teaching skills

1. Identifies specific needs, interests, and capacities of individual pupils and provides adequately for these
2. Analyzes and identifies specific learning tasks
3. Shows evidence of mastery of subject matter
4. Provides varied learning experiences for the development of communication, for work, and for interpretative and other basic skills involved in the learning tasks
5. Selects, prepares, and utilizes instructional materials and aids effectively in achieving teaching goals
6. Selects appropriate available community resources and uses these effectively in the teaching-learning process
7. Motivates the lessons and asks questions effectively to develop critical thinking and creativity
8. Creates and tries out appropriate strategies and materials that meet the peculiar needs and problems of children
9. Communicates ideas effectively in Filipino
10. Communicates ideas effectively in English

##### B. Guidance skills

1. Shows interest in pupils' problems and needs and helps meet them
2. Provides for the maximum involvement of pupils in the learning activities
3. Stimulates and compliments pupils to elicit positive and active interaction

4. Functions effectively as a member of the learning group
5. Helps pupils develop self-discipline in and through the learning process

**C. Management skills**

1. Prepares adequately for the day's learning activities
2. Starts learning activities promptly
3. Provides a permissive and stimulating atmosphere that encourages pupils to raise questions and suggest alternative solutions to problems
4. Administers tests effectively and returns corrected papers and other pupils' work promptly
5. Achieves teaching objectives to the optimum degree possible for the particular subject, lesson, or activity within a reasonable period of time

**D. Evaluation skills**

1. Uses specific criteria for the accurate evaluation of individual performance
2. Selects, evolves, and utilizes criterion-referenced tests
3. Analyzes and interprets evaluation results skillfully
4. Utilizes evaluation results as a basis for improving instruction

**II. Personal and Social Competencies**

1. Observes the Teachers' Code of Ethics and other pertinent rules and regulations of the school service
2. Sets the example in moral and ethical behavior to pupils, peers, and the community
3. Shows honesty and integrity in all his activities
4. Accepts and performs leadership roles competently in the school and in the community
5. Accepts the followership role whenever the need arises and assumes this intelligently
6. Shows evidence of professional and cultural growth
7. Gets along well with pupils, the school staff, and the community without compromising rules of propriety
8. Participates actively in cultural, professional, and other community organization activities
9. Shows evidence of mental health and stability
10. Shows evidences of sound physical health
11. Observes proper grooming and attire at all times
12. Shows creativity and resourcefulness in his performance
13. Prepares and submits neat and accurate reports on time
14. Observes official time and is ready to serve beyond the call of duty when the need arises
15. Uses free time wisely

## THE TEACHER'S JOB

Knowledge of the duties and responsibilities of a teacher will help one realize why teaching is a complex and many-sided task demanding a variety of traits and abilities. The following paragraphs attempt to bring out briefly some of the important aspects of the teacher's job, although most of these are discussed at length in the succeeding chapters.

1. *Guiding the learning process.* The major task of a teacher is to promote learning. To do this, he has to guide the learning process of children by planning and organizing meaningful learning experiences, creating a desirable learning environment, using a variety of instructional materials, providing for individual differences, and appraising pupil growth and development.
2. *Counseling and guidance.* Counseling and guidance are not the responsibility of the school guidance counselor alone. Every teacher shares in this responsibility. Because of his close contact with pupils, the teacher is in the best position to know much about them—their interests, needs, difficulties, habits, attitudes, beliefs, and aspirations. The teacher finds such knowledge about his pupils helpful in assisting them with their many and varied problems. In performing this guidance function, the teacher uses various sources and procedures to know his pupils and their needs, works closely with the guidance counselor, and learns the techniques of individual as well as group guidance. This responsibility is especially important when there is no guidance program in the school.
3. *Sponsoring extra class activities.* Extra class activities are part of any school program. These activities are considered important in contributing to the development of children. The extent of extra class programs varies from one school to another. Some of these activities are student organizations, publications, athletics, speech, drama, and music.

Sponsoring one or more of these activities is one of the teacher's duties. In assigning a teacher to any extra class activity, an administrator usually considers the teacher's interest and ability. To discharge this duty efficiently, a teacher must develop interest in one or more of these activities and become familiar with the principles in planning and administering them.

4. *Working with parents and the community.* The community environment is an important factor in the development of children. Today's teacher is expected to become familiar with the community and to work with people to improve community conditions. The teacher's important responsibility is the establishment of harmonious relationships be-

tween the school and the community. To perform this responsibility, the teacher interprets his work and that of the school to parents by conferring with them about their children at school or at home, cooperates actively in community organizations, and participates in various PTA activities and in community activities for social, economic, and political improvement.

5. *Professional responsibilities.* The teacher has certain duties and responsibilities as a member of the teaching profession. It is his responsibility to improve himself by maintaining high standards of personal and professional conduct and by continuing to grow professionally. A teacher who truly loves his job takes pride in his profession. Not for a moment does he lose faith in the worthwhileness of teaching as a profession.

## PREPARATION FOR TEACHING

There are two types of teacher-education: (1) preservice and (2) in-service. Preservice education is the college education needed to become a teacher. In-service education is any activity pursued by one already teaching for purposes of professional development and advancement.

### Preservice Education

To help prospective teachers develop the qualities considered essential to effective teaching, the curriculum of any teacher-training institution is composed of three basic areas: (1) subject matter education, (2) general education, and (3) professional education.

In the subject matter education courses, the prospective teacher masters the field or fields of knowledge which he chooses to teach. In the general education courses, he studies different areas of knowledge outside his special subject field. He gets a broader outlook of his specialized field. In the professional education courses, the prospective teacher gets to know and understand the educational and psychological bases of the teaching-learning process as well as the methods and techniques of teaching.

There is no definite agreement on how much each of these three basic areas should be provided for in the curriculum. The question consistently raised with regard to this point refers to the proper balance among these three areas.

In the Philippines, the *Policies and Standards for Teacher Education* as formulated by the Department of Education, Culture and Sports specifically states two main concerns in the preservice education of teachers, namely, (1) preparation of teachers imbued with the ideals, aspirations, and traditions of Philippine life and culture and (2) preparation of teachers sufficiently

equipped with knowledge of effective delivery system. Emphasis in the preservice teacher education program is on the development of teachers who possess the following traits and competencies:

**A. Personal/Social traits**

1. Conscious of their significant role in the early realization of social and economic development goals for the entire Filipino nation
2. Show appreciation for and promote desirable Filipino values, cherished ideals, and traditions that make the Filipino unique
3. Possess an objective and scientific outlook, and keep abreast with the development and progress in science and technology
4. Develop a feeling of involvement and concern in national and international issues that affect the security and well-being of the Filipino nation
5. Cherish and value a deep love of country as it serves as a wellspring of dedicated work and abiding faith in one's fellowmen
6. Value high moral integrity, and abide by ethical and spiritual principles not only in one's professional life but also in personal actions
7. Practice and believe in the principles of human rights as a foundation for sound citizenship participation

**B. Professional competencies**

1. Translate national development goals into viable programs of instruction through relevant curriculum, effective classroom strategies, and workable institutional objectives
2. Know and understand the nature, needs, and motivations of their pupils/students as well as the nature, needs, and problems of the community where they come from so as to devise and use suitable materials, methods, and techniques in teaching and in preparing a learning environment
3. Demonstrate performance on the qualitative as well as quantitative aspects of teaching and be directly involved in assessment procedures
4. Practice sound educational management and processes that break from established routine, if necessary
5. Encourage independent and creative thinking through a learning environment that liberates thinking and fosters creative undertaking
6. Understand the legal aspects of education and of the rights, privileges, and corresponding responsibilities of teachers under Philippine laws

## **In-service Education**

An important commitment of any teacher to his profession is to continue to grow professionally. No matter how superior a teacher's preservice education has been, his preparation for teaching is never complete. He has to keep abreast with all that is happening in his profession. This involves keeping up

with the changes and newer developments in his subject field, in the theory and practice of teaching, in current experimentations in education, and in other areas of knowledge relevant to his teaching.

Such professional growth can be obtained through participation in in-service activities. In the Philippines the most common in-service activities are

1. faculty and departmental meetings, and individual and group conferences with principals and/or supervisors
2. attendance at lectures, seminars, and workshops
3. study groups, professional readings
4. visitation of other classes, preschool conferences
5. conventions and conferences, local or national
6. membership in professional organizations
7. graduate studies

## THE ETHICS OF THE TEACHING PROFESSION

Teaching is a profession. One of the responsibilities of the teacher then is to maintain a high standard of personal and professional conduct. Considering that teaching involves varied relationships, it has become important to have specific rules of conduct that will govern the teacher's behavior in these relationships. In any profession, such rules of conduct are collectively known as the code of professional ethics. By observing a code of ethics, the teacher will be able to provide his pupils/students and the community where he works with an admirable role model of the professional teacher.

The ethical conduct expected of a teacher in his relationship with the various groups he has to work with, based on the Code of Ethics for Filipino Teachers, includes the following:

- A. Relationship with the state
  1. The teacher should consider it an obligation to see to it that the national objective of education is achieved by the school he serves.
  2. He should consider himself as a trustee of the cultural and educational heritage of the nation; hence, he should uphold moral principles, promote a sense of nationhood, deepen love of country, instill respect for constituted authority, and foster obedience of the law of the land.
  3. He should earnestly endeavor to help carry out the declared policies of the State in accordance with the Philippine constitution.
- B. Relationship with his students
  1. The responsibility of guiding every pupil/student to develop his potentiality and capability to the utmost should be the foremost concern of the teacher.
  2. He should make the learning experiences of the pupils/students enjoyable, fruitful, and meaningful.
  3. He should be firm but gentle in matters of discipline.



4. He should never allow himself to be influenced by any consideration other than merit in the evaluation of the pupil's/student's work.
5. He should always maintain his dignity and self-respect when dealing with pupils/students and should refrain from receiving favors directly or indirectly from any of his pupils/students or their parents.

C. Relationship with his associates

1. The teacher should maintain wholesome and cordial relationship with his associates. His relationship should be based on the principles of democratic cooperative action and mutual respect.
2. He should exercise discretion in matters concerning confidential information about associates.
3. He should make due acknowledgment of assistance received from his associates and should not appropriate the work of others to claim credit for himself.
4. He should be willing to share his professional knowledge and experience with fellow members of the profession.

D. Relationship with parents

1. The teacher should maintain a harmonious and cooperative relationship with parents.
2. He should keep continuous contact with parents to inform them of their children's progress and problems in school.
3. He should be prudent and tactful in his relationship with parents.
4. He should keep in confidence all information gathered during visits and interviews with parents.

E. Relationship with school officials

1. Teacher-administrator relationship should be a partnership characterized by mutual cooperation and sharing, imbued with frankness, honesty, loyalty, and professionalism.
2. The teacher should know and abide by the policies, rules, and regulations of the school.
3. He should develop openness regarding the professional aspect of his work.
4. He should devote official time fully, faithfully, and honestly in the accomplishment of official functions and responsibilities.

F. Relationship with nonteaching personnel

1. The teacher should accept nonteaching personnel as partners and coworkers in the task of achieving the goals of education.
2. He should treat the nonteaching personnel with courtesy, respect, and consideration.
3. He should be punctual in the submission of requirements, requests, and other support documents to avoid unnecessary delay in office transactions.

**G. Relationship with the community**

1. The teacher should actively participate in as well as initiate community movements for moral, social, educational, economic, and civic betterment.
2. As an intellectual leader, he should be willing to share his knowledge, training, and experience with the community.
3. He should conduct himself in such a way as to merit the confidence and respect of the community within and outside the school.

**H. Relationship with the profession**

1. Service in education calls for the highest standards of integrity and morality. The teacher should conduct himself accordingly and behave properly at all times.
2. He should be physically, mentally, and morally fit.
3. He should observe propriety and good taste in language at all times.
4. He should continually grow in his profession and uphold the highest possible standards that will earn for him social recognition as well as material compensation for service rendered.

**SUMMARY**

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The key factor in any teaching-learning situation is the teacher. Attempts to answer the question "What makes a good teacher?" have been made, but a common criterion has not been established. However, some degree of agreement on the essential traits and abilities generally related to quality teaching has been reached. These essential traits and abilities may be grouped into two categories: (1) professional qualities and (2) personal qualities. These professional qualities are mastery of the subject, understanding of the learner, understanding of teaching principles, skill in the use of techniques for their implementation, general understanding of other branches of knowledge, and understanding and appreciation of the teaching profession. Personal qualities, although difficult to isolate from professional qualities, relate to the teacher's personality, interests, attitudes, beliefs, and working relationships with pupils and other individuals.

Teaching is considered a complex and many-sided task. The teacher's major task is to guide learning, but he also has other responsibilities. Among these are sharing responsibility in counseling and guidance, sponsoring extra class activities, working with parents and the community, and observing professional responsibilities. To prepare for this job, the future teacher goes through a preservice education. Equally important is the in-service education pursued by one who is already in the field. Knowledge of ethical standards for teachers is likewise important for them to do a good job of teaching.

**STUDY GUIDE**

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1. Why is teaching considered a complex and many-sided task? Give specific examples of the various responsibilities of the teacher.
2. What professional qualities are considered important for successful teaching? Substantiate your answer.
3. How do personal qualities affect teaching success?
4. Is teaching considered a profession? Why? How does it compare with other professions? What do you think are the factors that make up a profession?
5. What various relationships with other people does a teacher have while teaching? How can he establish harmonious relationships with others?
6. What are the three areas of preservice teacher education? How much of each area do you think should be given to prospective elementary schoolteachers? to prospective high school teachers?
7. What are the common in-service activities engaged in by teachers? Explain how each kind of activity will help the teacher in his work.

## TEACHING AND LEARNING PRINCIPLES AND METHODOLOGY

### OBJECTIVES

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1. To explain what is expected of a teacher as facilitator of learning
2. To discuss the meaning of *learning*, its characteristics, and distinct phases involved
3. To discuss the principles and conditions that facilitate learning
4. To define *method* and discuss its importance
5. To describe the place of method in the teaching-learning process
6. To explain the factors that determine the choice of method
7. To give the characteristics of a good method

### THE LEARNING PROCESS

Learning is an integrated, ongoing process occurring within the individual, enabling him to meet specific aims, fulfill his needs and interests, and cope with the living process.

Conceptually, the process of learning involves five distinct phases:

1. *Unfreezing*. The individual becomes ready to consider changes in knowledge, skills, attitudes, and behavior.
2. *Problem diagnosis*. The forces supporting the need for change and the forces working against the changed needs are identified and presented.
3. *Goal setting*. The desired changes in knowledge, skills, attitudes, and behavior are stated specifically.
4. *New behavior*. The individual learns and practices those newer knowledge, skills, attitudes, and behaviors which are desired.
5. *Refreezing*. The newer learnings have been found to be beneficial and are assimilated into the individual's ongoing framework of knowledge, skills, attitudes, and behavior.

## Characteristics of Learning

1. *Learning is developmental.* As the individual grows and develops, he acquires various types of knowledge, habits, and skills which may be essential to his successful adjustment during different stages of development. These depend on his native capacities, degree of maturation attained, and previous experience.
2. *Learning is interactive.* It is only when the learner reacts to the environmental stimuli that he is going to learn. This reaction may be in the form of verbal communication, perceptual discrimination, reinterpretation of old concepts, behavioral manipulation, and habit re-learning.
3. *Learning is basic.* Learning is fundamentally a kind of relationship that exists between stimulus and responses. Because this connection between stimulus and response exists, learning is basically a matter of forming an association between them, and this association can be strengthened by constant exercise. When the connection becomes established, it then takes the character of a habit.

Learning is the core of the teaching-learning process. What the pupil/student learns, however, depends on what the teacher does. The teacher as facilitator of learning (1) provides the conditions for effective learning; (2) seeks to meet the needs and interests of the learner; (3) helps to create conditions for openness, respect, trust, acceptance, confrontation, and self-evaluation; (4) places emphasis on the uniqueness and rights of the individual; and (5) seeks feedback which will improve his effectiveness as a facilitator of the learning process.

Basic to the teacher's success as facilitator of learning is his understanding of certain psychological principles underlying the relationship between teaching approaches and learner's performance. Psychologists generally agree on the following principles that facilitate classroom learning (Magoon and Garrison 1976):

## Principles of Learning

1. *The learner must clearly perceive the goal.* Effective instruction occurs when maximum communication exists between teacher and learner regarding the goals and objectives of instruction.

Learners readily understand and internalize concepts and ideas which are relevant to their own needs and problems. This is because learning is a process which requires the exploration of ideas in relation to the self.

2. *The learner must be psychologically and physiologically ready.* This principle is in consonance with Thorndike's law of readiness and law of effect. Edward L. Thorndike is a well-known American psychologist

and educator. The *law of readiness* states that when a person is prepared to respond or act, giving the response is satisfying and being prevented from doing so is annoying. This law is related to the law of effect and accounts for the motivational aspect of learning.

This implies that generally teachers either wait for readiness or accept the present level of readiness of a learner and be satisfied with a slower learning rate in presenting a new learning experience. An example is the finding that the child, among other requisites, must have reached at least the mental age of six and a half years to enable him to cope with formal lessons in school. If he does not have the requisite maturation, the experience of trying to learn in school will be annoying and frustrating. It is presently accepted that a child must not be forced beyond his level in reading, arithmetic, or social activities. A child who is forced to read before he is ready may acquire some reading skills but may not necessarily develop the desire to read. He may even develop the attitude that he will read only when forced to do so.

The *law of effect* states that learning is strengthened when it results in satisfaction but is weakened if it leads to annoyance. A person tends to repeat what has previously been satisfying and to avoid what has been dissatisfying. A teacher then should provide learning experiences that are pleasant and gratifying to the learner so that he will want to continue learning.

3. *The learner must be motivated to learn.* That the learner must be motivated to learn is a basic principle in the teaching-learning process. Every learner in the classroom, however, is a unique individual. The learner's experiential background varies from learner to learner. He brings with him certain concepts about himself, about others, and about every element in the learning situation.

The problem on why some students are more interested in learning a task than other students arises in all learning situations. Ruth, for instance, may learn mathematics more successfully than social studies. Rommel may be interested in English but not in science. Such a problem involves motivation which a teacher has to understand



within the framework of each student's experiential background and personality as well as within the context or situation in which learning is to take place.

There are two types of motivation which a teacher may utilize in motivating students to learn—the extrinsic and the intrinsic motivation. Extrinsic motivation comes in the form of reward and punishment such as grades (high and low), honors, monetary rewards, medals, disqualification from joining cocurricular activity, and the like. Intrinsic motivation, on the other hand, means creating a desire to learn a subject because it is worth knowing.

Some principles on motivating learners which are significant for teachers are enumerated below.

- a. Intrinsic motivation is better than extrinsic motivation.
  - b. Goal setting is an important motivational aspect of learning.
  - c. Successful experiences are important motivators.
  - d. Feedback about one's progress can be an effective motivation.
  - e. Considering learner's interest is important in classroom learning.
  - f. Reward rather than punishment is a better motivation for learning.
  - g. Meaningful materials and tasks serve as good motivators.
  - h. Success generally increases the level of aspiration and achievement of the learner.
  - i. Teacher's expectations of the learner's performance influence the latter's achievement.
4. *The learner must be active not passive for maximum learning.* This principle is adroitly expressed in the Chinese adage:

I hear and I forget,  
I see and I remember,  
I do and I understand.

Very little learning takes place without personal involvement and meaning on the part of the learner. The process of learning is primarily controlled by the learner and not by the teacher. Changes in perception and behavior are mere products of human meaning and perceiving rather than any forces exerted upon the individual. Learning is not only a function of what a teacher does, says, or provides a learner. More significantly, learning has to do with something which happens in the unique world of the learner. Learning readily takes place when teaching serves as a facilitating process that helps the learner to explore and discover the world around him. Learning by doing is important.

5. *The learner must repeat or practice what he has learned in order to remember.* Thorndike's *law of exercise* states that constant repetition of a response strengthens its connection with the stimulus and disuse of a response weakens it. Educational practices such as drill, review, and examination exemplify this principle. However, mere repetition

is not all there is to learning. The learners must understand poems, know the rationale of multiplication tables or formulae in algebra or chemistry before they are made to memorize or repeat them. Frequency of repetition is still important in acquiring skill and in guaranteeing retention.

6. *The learner must put together the parts of a task and perceive it as a meaningful whole.* This is an extension of the principle formulated by the Gestalt school of psychology. The principle places emphasis upon the concept that learning is a process of discovering and understanding relationships and of organizing and finding significance in the sensory experiences aroused by the external situation. Learning is interpreted as the organization or reorganization of the subject's perceptual system into meaningful patterns. Emphasis is placed upon cognition and insight in the perception of new meanings in a situation. Such perceptual organization is referred to as *insight*. This is best illustrated in problem solving. A learner will arrive at the solution to the problem when he becomes aware of the important relationships involved in it.
7. *The learner must see the significance, meanings, implications, and applications that will make a given experience understandable.* Of importance to an educative experience are the background and previous experience of the learner. Unless new experiences are built upon those of the past, continuity is likely lacking, and the amount and effectiveness of learning is reduced. Apperception is paramount, for past experience is important in the meaning of new experiences. What has been experienced bears upon subsequent activity and upon the modification or strengthening of behavior. School-structured experiences should be related to the total environment of the learner so that continuity of schooling and out-of-school activity is maintained.
8. *The learner must be prepared to respond.* There are times when the individual is more ready and better able to engage effectively in a particular set of learning activities. A number of factors influence this, among them is readiness which is related to maturation. A teacher sometimes may encounter situations where learners learn automatically and spontaneously or learners who are able to perform skills and activities without much apparent effort. These situations can be credited to readiness on the part of the learner. Readiness varies with different learning tasks and among individuals. Without readiness, much effort is exerted by the teacher and the learner and this effort may result in little or no learning at all on the part of the learner.
9. *The process of problem solving and learning are highly unique and specific.* Each individual has his own unique style of learning and solving problems. As individuals become more aware of how they learn and



solve problems and become exposed to alternative models used by other individuals, they can refine and modify their personal learning style so that this can be employed more effectively.

## Conditions Which Facilitate Learning

Equally important to ensure the teacher's success as manager of the classroom situation is his awareness of conditions that facilitate learning. The teacher plays an important role in determining the kind of psychosocial climate that will prevail in the classroom. Studies have shown that the climate prevailing in the classroom has considerable effect on pupils'/students' learning.

The teacher is also responsible for setting up the physical environment most conducive to learning. This responsibility involves attention to physical conditions such as lighting, ventilation, and room appearance. It also involves the implementation of certain conditions enumerated below that put the learner at ease and thus facilitate learning.

1. *Learning is facilitated in an atmosphere which encourages learners to be active.* The learning process flourishes when there is less teacher domination and talk. Listening to the learners and encouraging them to consider the teacher as a resource person and a sounding board facilitate active exploration of ideas. Learners are not passive receptacles into which the teacher can pour in the "right" values and answers. They learn better when they feel they are a part of what is going on and when they are personally involved.
2. *Learning is facilitated in an atmosphere which promotes and facilitates the individual's discovery of the personal meaning of ideas.* Learning occurs when the objectives of the teacher accommodate, facilitate, and encourage the individual's discovery of personal objectives and personal meanings in a situation. The act of helping individuals to change their behavior requires the development of goals which will provide enough elbowroom for individuals to explore and internalize behavior that is productive and satisfying.
3. *Learning is facilitated in an atmosphere in which different ideas can be discussed but not necessarily accepted.* Differences in ideas must be tolerated if differences in people are to be accepted.
4. *Learning is facilitated in an atmosphere which consistently recognizes the individual's right to make mistakes.* Growth and change are facilitated when error is accepted as a natural part of the learning process. The learning process requires the challenge of new and different experiences, and the unravelling of the unknown involves the making of mistakes. For individuals to learn, they need the opportunity to explore new situations and ideas without being admonished for mistakes which are integral to the activity of learning.

5. *Learning is facilitated in an atmosphere in which evaluation is a cooperative process.* Since learning is a personal process, individuals need the opportunity to formulate the criteria to measure their progress. Self-evaluation and peer evaluation enable individuals to really judge how much they have learned and grown. New insights evolve as individuals see themselves as they really are. For learning to occur, the individual in the group needs to see himself accurately and realistically. This can best be accomplished through self- and group evaluation.
6. *Learning is facilitated in an atmosphere when individuals feel they are respected and accepted.* A genuine expression of care on the part of the teacher and a warm emotional climate generate an atmosphere of safety in which individuals can think, explore ideas, and genuinely encounter other people without any threat. Confrontation and differences of opinion become constructive forces in a group when individuals experience that they are respected as persons. Accepting a person means allowing him to hold on to his values and be himself. When an individual does not have to defend himself and his values, then he is free to think and take a look at himself and his values and then to change freely when necessary.

## METHODOLOGY

The schools have been blamed for many things, such as increase in drug addiction and alcoholism among the youth, juvenile delinquency, child prostitution, immorality, and the general deterioration of morals in our society. That is why the Department of Education, Culture and Sports is stressing the teaching of values. In the revised secondary curriculum, a new subject, values education, is included. How are values to be taught? There is a need to upgrade and revise the teaching methodology to make it more productive of results, particularly in achieving changes in attitudes and values which must be reflected in a marked change in conduct and behavior of the products of our schools. *Methodology* here refers to the orderly, logical procedure in doing something, more specifically in ways of teaching.



## Method in the Educative Process

In the educative process the three most important factors are the child, the teacher, and the subject matter. Take away one of the factors and it is doubtful if there can be any education. The child who is to be educated is the most important factor. The teacher is necessary to guide the child in the educative process. Without the teacher, the child may learn the wrong things or learn improperly. He has to acquire knowledge and information through subject matter. The teacher sifts the subject matter and decides what is to be taught to the child.

Transmission of subject matter from the teacher to the child is done through method. By means of method, the child is guided as to what parts of subject matter to appreciate and what attitudes to develop. Also through method, the child acquires new knowledge, habits, rote associations, and skills.

## Importance of Method

A beginning teacher who faces a class of forty or fifty pupils for the first time in his life is usually bewildered about what he should do. He can be taken aback by the number of things he has to attend to all at once. Control of routine factors, mastery of the environment, getting the attention of the class, maintaining discipline while teaching are just few of the things the young teacher has to attend to. He may master the subject matter, but his problem is how to get the children to learn it. Young teachers fumbling their way through or going about in a hit-or-miss fashion are a common occurrence. They seem to have no clear direction and no definite procedure in how to conduct a class. Doing things by trial and error is a waste of time and is expensive in more ways than one. In cooking food, the housewife follows a method or recipe; otherwise, the food may be ruined. The farmer follows an accepted planting method or he may not get a good harvest. The carpenter follows a method or he may not turn out good work. The salesman follows a method in selling his wares. Like all these people, the teacher must follow a method if he expects to achieve the desired results.

Method is probably more important in the elementary grades than in high school or in college where the students are more mature and can study by themselves. The learning of young children must be guided, and method provides this guidance.

## Meaning of Method

What is *method*? The word *method* comes from the Greek *methodos*, which in turn comes from two Greek words: *meta* (after) and *hodos* (way). The dictionary defines it as a mode of procedure, especially an orderly or systematic mode; a way of doing something especially in accordance with a definite plan; an

established way of doing anything; or the means or manner in which something is to be presented or taught.

As applied to classroom teaching, method is a series of related and progressive acts performed by the teacher and the pupils to accomplish the general and specific aims of the lesson. It has to do with the way a teacher communicates the subject to the students, and it involves regular steps to guide the mental processes of the learner in mastering the subject matter being presented to him.

In the past, acquisition of facts and information was the emphasis, and so method had to deal mostly with the job of imparting subject matter. In class teaching, *method* meant any orderly routine to be followed in accomplishing certain definite results. *Method* has a broader meaning today because educational goals have changed, and the emphasis on the outcomes of education has also changed. Outcomes of education such as habits, skills, attitudes, and appreciations are the ones now stressed. Education is not only acquiring a body of knowledge but also developing desirable attitudes, emotions, and a well-adjusted personality.

Presently, method includes everything the teacher does or neglects to do which causes behavioral changes in pupils. A teacher's kindly facial expression and friendly manner may encourage a shy pupil to take part in the recitation. A teacher's warm personality and beautiful voice may arouse a love for music in the class. These qualities of the teacher form part of his methods. What a teacher refrains from doing, if this influences behavior, also forms part of his method.

## Relation Between Method of Teaching and Method of Learning

With this broader concept of method in mind, how then is it related to methods of learning? Teaching and learning are just two sides of the same coin. Method facilitates learning. Since, as psychologists tell us, there are many different ways of learning, there should also be different methods of teaching.

In any method, certain definite steps are necessary as a guide to the learner. Hence, method should follow psychological principles in the learning process. A method is good if it causes a child to learn.

## Function of Method

Method forms the bridge between the child and the subject matter. This bridge enables the child to get to the other end. Method makes learning easier. Method also links the child and the society. By means of the classroom method used, the child's personality unfolds and he learns to adjust to his surroundings. The attitudes, character traits, and emotions desirable to society are developed, and the child learns restraint and self-control. In group work, for instance, a child learns to cooperate with others. Dividing the class into

committees gives children opportunities to develop their interests. The sharing period teaches children to give and take. The inductive method educates the child to think logically. The deductive method educates the child to postpone judgment until further verification.

The traditional concept of method placed more emphasis on the *how*. Today's newer and broader concept of method places more stress on the *why* rather than the *how*. This is in line with the suggested reforms in teaching methodology which advocate adoption of "more and more teaching strategies that are inquiry and problem oriented in order to develop the ability to think, rationalize, and make proper decisions."

### Factors That Determine Method

With changing educational goals, the choice of method becomes important. How then will the teacher decide what method to use? The following factors can help the teacher to decide:

1. the educational objective and the aim of the lesson
2. nature of the subject matter or the lesson
3. the nature of the learners
4. school equipment and facilities
5. the teacher

*The educational objective and the aim of the lesson.* If the educational objective is to train citizens for a democratic way of life, the traditional question-and-answer method would be clearly out of place. On the other hand, the socialized form of the recitation would be out of place when the objective is to demonstrate a dictatorship.

If the aim of the lesson is to make certain responses automatic, the drill method would be the most appropriate. If the teacher wants to arouse certain feelings and attitudes, the appreciation lesson would be the most suitable. If training in logical thinking is what the teacher desires, then the problem method should perhaps be used.

*Nature of the subject matter or the lesson.* Different types of subjects and different types of lessons call for different methods. Take arithmetic and literature. The methods most often used in the teaching of arithmetic will not be the same methods used in the teaching of literature. A spelling lesson may make use of drill, but a lesson in science would probably utilize the laboratory or experimental method.

*The nature of the learners.* Since the child is considered the center of the educative process, the method must be suited to him. His age, grade, maturity, ability, interests, needs, experience, health, and growth must be considered. The lecture method may be more appropriate in college where students are more mature and have a longer attention span than in the high school or in the grades where learners are still young and immature. Likewise, the use of dramatic play and games may be very appealing to children in the primary grades but not to those in the high school.

*School equipment and facilities.* Some schools have modern equipment and facilities, such as audiovisual rooms, projectors, TV, radio, laboratory rooms, music rooms with pianos, a gymnasium, a well-equipped library and laboratories, and plenty of teaching aids. In a school with a gymnasium, physical education can be taught effectively, and children can experience the different types of physical education activities. A school without a playground and where facilities for physical education are inadequate will be limited in sports or physical fitness activities.

*The teacher.* People have their own convictions and ways of doing things. Teachers also have theirs. They may prefer certain methods over others and use these more often. Some teachers are more at home with the traditional methods, while a number favor the current ones. It does not really matter what method the teacher uses provided he gets the desired results in the shortest time possible. He must master the method, however, and he must know the principles, the steps, and the techniques to use.

## Distinctions Among Method, Device, and Technique

A teacher should make good use of teaching devices or materials. A device is a "little method." It is a teaching aid or a tool to facilitate instruction. It is used to make the teaching clearer, more meaningful, and more interesting. Pictures, flash cards, and objects are examples of devices.

The teacher's procedure comprises the method of teaching. He may be relating a story and therefore is using the telling method. To make the story more graphic and interesting, the teacher may use pictures. The pictures are devices or teaching aids. *Technique* refers to the art or skill of performance. How well the teacher tells the story depends on techniques, such as using action and gestures, changing facial expression to depict different characters, varying voice pitch, tempo, and timbre. Two teachers may use the same method and devices in teaching the same subject matter, but they may differ in technique.

## Characteristics of a Good Method

Is there a typical or ideal method that will be good for any subject, any class of pupils, any age? In the past there was a search for this general method, but method cannot be standardized simply because children do not belong to the same mold. Perhaps there should be as many methods as there are individual differences among children. There is no single best method, but there are many good methods.

A teaching method is good if

1. It makes use of the principles of learning and permits the operation of these principles such as readiness, exercise, and effect as provided for. Review and repetition make use of exercise. Play activities are

pleasurable to children, and a method that makes use of games gives children satisfaction. The lecture is a good method for college but not for small children.

2. It utilizes the principle of "learning by doing." Since one learns through self-activity, provision should be made for direct experiencing. Activities should be planned so as to give children opportunities for doing, reacting, and undergoing. Field trips and experiments provide firsthand experiences.
3. It provides for individual differences. A method should be flexible enough to serve the bright, the average, and the slow learners. There should be provision for meeting different needs, interests, aptitudes, and emotional maturity.
4. It stimulates thinking and reasoning. If the method merely encourages memorization and glib responses to factual questions (although memorization in itself is not bad), it is not a good method. Problems come up every day in this modern world, and the child must learn to be independent and to solve his own difficulties. He should get this training in the classroom.
5. It provides for growth and development. Children should grow in knowledge and ideas; in habits, skills, and abilities; in attitudes and sentiments. Varied activities and experiences that will take care of development in various directions should be included in the lesson procedure.

## **Influence of Differing Schools of Thought on Method**

There are various teaching methods and strategies. This book classifies them into three categories: (1) time-tested methods, (2) discussion procedures, and (3) improved instructional practices. The traditionally conservative schools use the time-tested methods, while the modern progressive schools make use of improved instructional practices and discussion procedures. The two schools differ in (1) objectives, (2) role of the teacher, (3) curriculum, and (4) discipline. These differences are reflected in the methods used.

### *Objectives*

The traditional school is subject centered. It emphasizes the 3 Rs and the tool subjects and, therefore, equips the children with the basic skills necessary for a livelihood. It acquaints the children with the cultural heritage of the race and inculcates such traits as industry, patience, perseverance, responsibility, self-sacrifice, courtesy, honesty, etc. It develops disciplined minds and trains future leaders of the country.

The progressive school is child centered and aims at the full development of the child—socially, emotionally, and mentally. It aims to satisfy the needs of the child to grow and develop as a worthy member of society who is aware

of his duties and privileges. The progressive school also provides varied and rich learning experiences to suit the needs, abilities, and interests of all children. It develops the children's feelings of worth and dignity as individuals.

### *The Teacher*

In the traditional school, the teacher is an important figure in the classroom. He is the source of knowledge and information. Because of this role, the teacher must be a subject matter expert and he should see to it that he gets the desired results in the children. Hence, he has to resort to "memorizer" methods where repetition, drill, review, and application play a big part. Because certain definite accomplishments are expected of the pupils, the teacher must be methodical and logical in his lessons. However, since the teacher in the traditional school follows a rigid or fixed method and does not allow for individual differences among learners, a tense atmosphere is sometimes created in the classroom. Pupils who cannot cope with sets of standards drop out of school sooner than later. However, since the traditional school emphasizes the instructional function of the teacher, it results in the early intellectual development of children.

In the progressive school, the teacher plays a variety of roles, with emphasis on the guidance counselor function. Sometimes, the teacher acts as a big brother or sister, or an assistant, rather than as an instructor. Since the progressive school is child centered and individuals differ, the teacher must plan a highly flexible program and provide a stimulating environment for the children to develop varied interests and abilities and to satisfy their needs. A teacher must be highly qualified to do varied procedures required in teaching.

In the progressive school, the classroom is not only for study; it is a place for work and play, to live and learn in. The social and intellectual development of the child may be delayed, but it comes naturally. The teacher is not pressed to accomplish certain definite results; he therefore does not "push" the children, and the result is usually an emotional and social climate that is relaxing for both the teacher and the children.

### *The Curriculum*

The traditional school believes that educational objectives can be realized through the curriculum which is considered important because the child's existence in society depends upon the values fostered by education. The nature of the child and his society mainly influences and determines subject matter. The three Rs, the social sciences, and humanities comprise the curriculum. Experts decide the subject content which the teacher passes on to the child by having the latter consolidate skills and memorize facts, dates, and events as in history and science. A resourceful teacher, however, overcomes this monotony that accompanies repetition through varied and enjoyable drill exercises.



In the ultraprogressive school, the subject matter may be whatever the child likes or is interested in. There is permissiveness and freedom, and the child can switch from one activity to another. Content is not of much importance, and consequently the child may have gaps in his knowledge. Emotional frustration is prevented, but this sometimes results in conflicting wants and lack of group cooperation. In the moderate progressive school, the curriculum is cooperatively determined by both the teacher and the class. The teacher structures the environment, plans the situations, and guides the pupils to formulate the objectives and undergo the experiences. Much emphasis is placed on the group method of study—planning, doing, sharing, or evaluating.

In the conservative progressive school, subject matter is meaningful where content is predetermined and guided. The environment is geared toward the subject matter, primarily determined by the teacher himself and not by a group of experts. The teacher expects the pupils to manifest individual differences, as the curriculum stresses not only social and emotional development but also learning of facts. The curriculum aims to develop the "whole child" through "developmental" methods and activities such as field trips, dramatic play, discussion periods, and other activity programs. Because many kinds of pupils constitute the class, the teacher has to use a variety of methods such as experimentation, committee study, problem solving, project, individual reports, and the like.

### *Discipline*

In the traditional school, the teacher enforces strict discipline. He expects the class to measure up to established norms or expected standards. He injects fear in the classroom to maintain the silence that is conducive to learning and communication among pupils. Whatever noise is heard comes from the passing of books, pencils, and other materials. An attitude of passivity develops, and once in a while, rebellion erupts. However, in this kind of classroom atmosphere, the learners develop good work habits.

In the progressive school, the approach to discipline is preventive rather than remedial, by action rather than by precept. Self-discipline is developed in the pupils, but different approaches are used to suit different patterns of development. The philosophy behind classroom control is that people live up to what is expected of them. So no child is condemned or rejected. He is, instead, praised for little achievements, encouraged to perform services for others, and guided to work at his own pace. There is little noise in the classroom, but this comes from class activity such as group discussion.

## SUMMARY

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The teacher as the key factor and facilitator of learning provides the conditions for effective learning. He is aware of the five distinct phases involved in learning, namely, (1) unfreezing, (2) problem diagnosis, (3) goal setting, (4) new behavior, and (5) refreezing. He is also aware that learning is developmental, interactive, and basic.

The teacher is guided by psychological principles of learning and the basic laws of learning, namely, (1) law of readiness, (2) law of exercise, and (3) law of effect. He also provides conditions which facilitate learning among which are (1) an atmosphere which encourages learners to be active, (2) an atmosphere which promotes the individual's discovery of the personal meaning of ideas, (3) an atmosphere in which individuals feel they are respected and accepted, and (4) an atmosphere in which evaluation is a cooperative process with emphasis on self-evaluation.

*Method* refers to the teacher's systematic procedure of getting the lesson across to the child. Method also facilitates learning and is considered effective if it (1) makes use of the principles of learning, (2) utilizes self-activity, (3) considers individual differences, (4) stimulates thinking, and (5) provides for growth and development.

There are various teaching methods and the choice of method is influenced by the two schools: the traditional and the progressive. These two schools differ in (1) objectives, (2) role of the teacher, (3) curriculum, and (4) discipline.

## STUDY GUIDE

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1. Analyze the five distinct phases in the learning process. Explain how they take place in the teaching-learning situation.
2. What are the characteristics of learning? How do the principles of learning dovetail with these characteristics?
3. Explain how the different conditions that facilitate learning can be provided in the classroom learning situation.
4. What is method?
5. Why is it important to have a method of doing things?
6. How will method help the young teacher? the pupils?
7. What factors determine the choice of method? Show how each factor may help determine method.
8. How is method related to teaching aids and technique?
9. Give the characteristics of a good method.
10. Trace how (1) objectives, (2) the teacher, (3) curriculum, and (4) discipline in the traditional and the progressive schools have influenced method.

**OBJECTIVES**

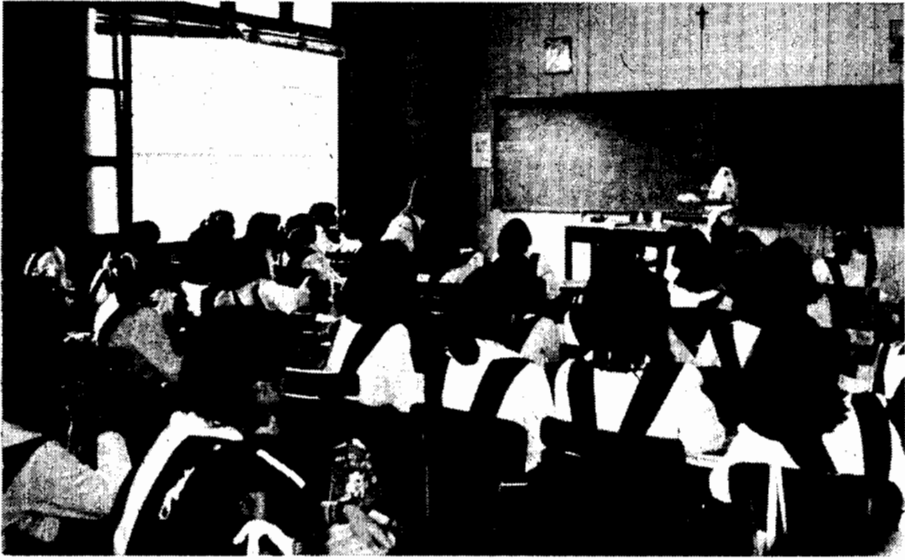
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1. To give the advantage of having a lesson plan
2. To differentiate the different kinds of lesson plans
3. To tell the parts of a lesson plan
4. To make a lesson plan based on any subject matter
5. To explain the five elements in an instructional objective
6. To state and discuss the three-scheme category in classifying learning outcomes
7. To discuss the taxonomy of educational objectives for the three domains

**THE LESSON PLAN**

When student teachers are asked what their difficulties in practice teaching are, one of the usual answers given is "Making lesson plans." Critic teachers also complain that students do not know how to make lesson plans when they should have been taught how in their methods classes.

A lesson plan is an indispensable tool to a teacher. An engineer would not dare build a bridge without a plan. An architect makes a plan for every house he constructs and no homeowner can dispense with the services of an architect if he wants a good house. Neither can a teacher afford to teach without a lesson plan.



*An organized and orderly institution is the result of a well-prepared lesson plan.*

#### Why is a lesson plan important?

First, a pupil's educational growth depends on the selection of subject matter, activities, experiences, and methods adapted to his interests, needs, abilities, and level of maturity. The wise teacher who plans his lesson well gets optimum results in his teaching.

Second, a lesson plan includes framing objectives and choosing subject matter, procedures, materials, and evaluation techniques. A teacher who has to do all these things is forced to prepare and organize his lessons well.

Third, making a lesson plan involves foreseeing what is likely to happen and choosing experiences that will change children for the better. Foresight contributes to good teaching which, incidentally, is the aim of every teacher. A lesson plan stimulates the teacher to be creative.

Fourth, a lesson plan serves as a guide to the apprentice teacher. With so many things on his mind, the student teacher may forget the subject matter or its sequential organization. The lesson plan serves as a reminder.

Fifth, planning prevents waste of time that usually accompanies unorganized or haphazard teaching. A lesson plan helps the teacher to be systematic and orderly. It also helps him determine what is to be taken up so that it will neither be too broad nor too limited. If too much is attempted, teaching becomes superficial and not much learning results. If too little is covered, needless repetition may ensue. In either case, time is wasted.

Sixth, a lesson plan prevents wandering away from the subject matter by making the teacher conscious of what he has to accomplish for the day. A chance question may easily lead the discussion away from the topic, but the lesson plan can always direct the teacher back to his lesson.

Seventh, a lesson plan gives a feeling of security especially to the beginning teacher who usually feels nervous and tense. A well-prepared lesson plan gives a measure of self-confidence and minimizes feelings of inadequacy.



Eighth, the principle of self-activity applies to the learning of both teachers and pupils. If children learn by doing, so do teachers. By making lesson plans, the teacher learns to be a more effective teacher inasmuch as a good preparation insures good instruction. In the course of time, he gains insight into effective preparation of lessons.

Ninth, lesson plans are of use not only to teachers but also to principals and supervisors. Through lesson plans, principals and supervisors can trace what the teacher has taught and what the class has covered. They come to know whether the teacher has covered enough subject matter. They also can determine his efficiency to a certain extent since his lesson plans will show his choice of subject matter and methodology.

Tenth, past lesson plans will be of use to a substitute teacher who may take over in an emergency. A substitute teacher will frame future lessons based on what the class has already covered.

## Definition of a Lesson Plan

What is a lesson plan? An engineer or an architect usually has a blueprint of the bridge or building to be constructed. A teacher also needs a blueprint of what he intends to build—whether this be attitudes, habits, skills, or knowledge. The lesson plan is the teacher's blueprint.

Nelson Bossing (1961) defines *lesson plan* as "a statement of achievements to be realized and the specific means by which these are to be attained as a result of the activities engaged in day by day under the guidance of the teacher." This definition shows a change in emphasis. In the past, the teacher emphasized knowledge as an end in itself. Today lessons are means of acquiring desirable habits, attitudes, and skills that will lead to the social and personal development of the individual. The spotlight is on the child with the teacher in the background, serving as guide. Attention is focused on activities of the learner rather than on the subject matter itself.

## Parts of a Lesson Plan

What are the important parts of a good lesson plan? Most lesson plans have the following parts: (1) objectives, (2) subject matter, (3) materials, (4) procedure, and (5) assignment. At present, however, new terms are used for some parts of the lesson plan and these new terms are *thrusts* for objectives, *strategies* for procedure, and *agreement* for assignment. A new teacher cannot make a good lesson plan if he does not have a clear understanding of what each part of the lesson plan is all about.

No lesson plan can afford to dispense with aims or objectives or to have them vague and ill defined. Objectives provide goals to be attained, give direction to the class discussion, and call for what outcomes to expect.

Objectives may be general or specific. A general aim is usually broad in scope and may be the objective of a course, subject, or semester. It cannot be attained in one lesson. A specific aim is usually attainable in a specific lesson and contributes to the accomplishing of the general aim.

"To develop appreciation of poetry" is a general aim that cannot be accomplished in one lesson, but "To arouse appreciation of the poem 'The Arrow and the Song'" is a specific aim that can be attained in a day's lesson. It is good to have both general and specific objectives in a lesson plan. If only specific objectives are included, lessons will be independent experiences with no continuity and pupils will not see the interrelation of the specific lessons in the whole course. On the other hand, if only general objectives are included, specific outcomes for each day's lesson may not be accomplished.

Objectives may also be classified as teacher's or pupil's. Teacher's objectives are usually serious, mature, and educationally oriented. Those of the child's are not. Once in a while, teacher's and student's aims may be identical, as that of a group of students preparing to take a civil service examination and the teacher who tries to help them pass it. In this case, the students are relatively mature and serious with regard to their study. Oftentimes, the purposes of pupils differ from those of the teacher. However, a teacher cannot afford to ignore the purposes of pupils. A teacher should know what these purposes are and make use of them in accomplishing his own objective. The teacher's purpose may be "To teach . . ." The child's purpose may be "To play . . ." The teacher can utilize the child's aim to achieve his own by making use of play activities in his teaching.

Presently the trend is toward behavioral objectives. Current lesson plans use behavioral objectives because these are directed to the development of certain changes in the behavior of the individual. Such objectives are visible and measurable. The success of the teacher-learning situation can actually be measured to the extent by which a child can perform the behavioral objectives. Examples of behavioral objectives are

At the end of the lesson, the pupils are able

1. To identify the change or tempo in a music composition
2. To enumerate prohibited drugs and to discuss their effects
3. To construct a simple electromagnet
4. To count numerals in bases other than ten

From the foregoing aims, it is easy to see that behavioral objectives begin with verbs that denote specific action. Behavioral objectives are sometimes further broken down into cognitive, psychomotor, and affective objectives. Cognitive objectives usually refer to learning facts and information; psychomotor to habits and skills; and affective to attitudes and appreciations.

The specific subject matter and its sources—textbooks, library references, etc.—should be stated in the lesson plan. Although less emphasis is placed today on facts and information as an outcome of education, still factual data are indispensable.

Materials are necessary aids to teaching and should be included in a lesson plan. Materials include teaching aids and devices, such as maps, graphs, flash cards, pictures, objects, slides, radio, TV, and movies. The various teaching aids are discussed in another chapter. The teacher should weigh and consider carefully the kind of materials that will give maximum benefit. Organization of these materials and the learning activities accompanying them count a lot toward effectiveness in teaching.

Procedure is a very important part of the lesson plan. This includes both teacher and pupil activity in the detailed plan. We know that individual differences exist. We also know that there are different theories of learning, and that people learn in different ways; therefore, there should be varied types of procedure. The definite steps of the method being used should be shown in the procedure.

A lesson plan is incomplete without the assignment. A good assignment insures a good recitation because it tells definitely what is to be done, how it is to be done, and why it must be done. Another chapter discusses the assignment in detail.

## Prerequisites to Lesson Planning

How does one go about preparing a lesson plan? This is the problem that has stumped many a student teacher. There are certain prerequisites to good lesson planning. They are

1. *Knowledge of the subject matter.* No teacher can expect to teach something he himself does not know. The B.S.E.Ed. curriculum prepares the student to teach the different subjects in the elementary school. New fields of specialization are being offered in the B.S.E.Ed. course. In the high school, the subjects are comparatively more difficult and that is why the B.S.E.Ed. curriculum offers majors and minors. The B.S.E.Ed. student specializes in an area that he expects to teach. Knowledge of subject matter involves planning learning activities or experiences that may be taken up in the classroom. It means anticipating difficulties that may arise and planning their solutions. It also means knowing the information, and understanding the skills and attitudes to be learned.

2. *Knowing the children or the students.* Good planning requires knowledge of what to teach as well as of who should be taught. Knowing children means understanding their traits and interests and planning for them. It is necessary for the teacher to know not only the history of Philippine education but also the nature of children in order to plan activities and experiences for them. Sometimes student needs and interests may be a strong factor in determining what subject matter to teach. Thus, it is necessary for a teacher to understand the theories of learning and the psychology of the mental process.
3. *Familiarity with different strategies.* The teacher must know various ways of imparting learning in consonance with children's nature and with the type of subject matter. He must know different approaches, methods, and techniques of teaching. Method, which includes all activities taken up in the classroom, must consider group and individual interests, aptitudes, capacities, and needs. It must also take into account the environment that may influence the class, collectively and individually.
4. *Materials.* A teacher needs materials that will facilitate the teaching process. He should know the materials he will need in a learning situation. As mentioned before, another chapter discusses the different kinds of teaching aids.
5. *Understanding of objectives.* This includes the aims of education especially of Philippine education, the aims of the course or subject, and the aims of the specific lessons. Otherwise, the recitation will have no direction and not much will be accomplished.

### *Suggestions in Making Lesson Plans*

Certain pitfalls in making lesson plans can be avoided. The student teacher should bear the following suggestions in mind:

1. The lesson plan is an aid to teaching. It should not be a bible to be followed to the letter. Otherwise, one will be teaching the lesson plan instead of teaching children. Sometimes there may be a need to put aside the lesson plan to meet an emergency or to take advantage of a learning situation that comes up.
2. A lesson plan should not be too detailed. Numerous details may obscure the main points and cause confusion. Neither should a lesson plan be too skimpy and inadequate, especially for a beginning teacher. A lesson plan that is too fragmentary will not be of much help.
3. Lessons should be planned within the time allotment for the subject. Beginning teachers sometimes cover too much ground resulting in



teaching becoming superficial and the class does not learn much. They are tempted to leave subject matter half taught in an effort to cover everything in the syllabus.

4. The textbook should not be regarded as infallible. After all, textbooks are made by human beings who are also subject to mistakes. The teacher may consult other sources and persons of authority in organizing lesson content. The present practice is to use several sources rather than only one textbook.
5. The lesson plan may serve as a basis for future plans and a means of evaluating the success of learning. A lazy teacher who teaches the same subject year after year may continue using the same plan. But subject matter grows; the environment changes. How can the same lesson plan be perennially used? However, one need not throw away an old plan. It can be improved and can serve as the basis for measuring the results of teaching.

In lesson planning, problems will come up and errors will be committed. As one continues making plans, these will disappear, for it is by continuous practice that one attains skill and proficiency. Problems and errors should serve as bases for improvement.

## TYPES OF LESSON PLANS

Bossing (1961) gives two types of lesson plans—the memorized and the written. It is obvious that the written type has more advantages, among which are

1. Expression in written form leads to clarity of thought.
2. Protection against forgetting is insured.
3. A written lesson plan is an aid to mastery.
4. A written plan forms the basis of later improvement.

Among types of lesson plans given by Gerald A. Yoakam and R. G. Simpson (1949) are (1) syllabus or outline, (2) unit plans dealing with a division of subject matter or a complete activity, (3) detailed study guides, (4) mimeographed exercises, (5) workbooks, and (6) daily plans.

Schorling gives three types of plans—(1) the curriculum area or subject of the year, (2) the unit plan, and (3) the daily lesson.

These types of lesson plans can be shown in this example. History is a curriculum area and Philippine history is a subject in the second year. Since there are many periods that make up Philippine history such as the pre-Spanish, the Spanish, the American, the Japanese occupation, and the Republic, the teaching of this subject may be planned for a year or a semester. Each period in Philippine history may constitute a unit. A unit lesson cannot be finished in a day. It may take several days, hence, the need for daily lesson plans.

Daily lesson plans may be classified as (1) detailed, (2) semidetailed, and (3) brief. Student teachers are usually given training in all three types. The detailed lesson plan is anticipatory teaching. It puts down in writing the classroom activities that may occur. The teacher writes down all the questions he is going to ask under the column *Teacher Activity*, and the expected answers from the pupils under the column *Pupil Activity*. In planning the detailed lesson plan, the teacher tries to visualize how the children will react, what difficulties they are likely to encounter, and how they may be guided to achieve desired results.

A beginning teacher should be trained in writing detailed lesson plans for many reasons: (1) it helps him master what he is to teach and gives him confidence; (2) it helps him foresee children's reaction and forewarns him about problems that may arise; (3) it gives critic teachers a chance to go over what the student teacher plans to do and to give suggestions or to make corrections and thus prevents mistakes in actual teaching.

In the classroom, teachers do not make detailed lesson plans. They make semidetailed or brief lesson plans. The semidetailed lesson plan omits pupil activity. It contains only the lesson procedure or the steps of the lesson. A few of the pivotal questions may be included.

The brief lesson plan is even shorter than the semidetailed. Teachers who have taught the same subject for years usually make brief plans. Although the parts of a lesson plan are present, they do not write them out every day.

Student teachers should also learn how to write semidetailed and brief lesson plans. The critic teacher may decide when the student is adept enough at writing detailed plans and therefore can shift to the writing of semidetailed plans.

At most, student interns teach only one subject at a time, but there is a day when they are assigned to teach all the subjects. On the day they do straight teaching, they should make brief lesson plans for each subject. Time thus saved may be devoted to the preparation of materials and other teaching aids.

What follow are samples of a detailed, a semidetailed, and a brief lesson plan based on the same subject matter.

### DETAILED LESSON PLAN IN MATH FOR GRADE III

by Eugenia C. Sereño

Former Head, PNC Off-campus Unit

#### I. Objectives

At the end of the lesson, the pupils are expected to

- A. Write 3- or 4-digit numerals
- B. Explain the value of the numerals in 3- or 4-digit numbers
- C. Change numbers in words to figures

#### II. Subject Matter

Expanded Notation  
Place Value

**III. Materials**

Board exercises, sticks

**IV. Procedure**

**A. Preparation**

*Teacher Activity*

*Pupil Activity*

1. Let's see how well you can answer these:

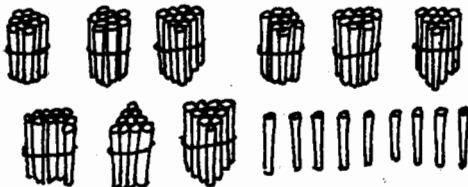
- |                                   |                            |
|-----------------------------------|----------------------------|
| a. 27 = ___ tens and ___ ones     | 2 tens and 7 ones          |
| b. 58 = ___ tens and ___ ones     | 5 tens and 8 ones          |
| c. 90 = ___ tens and ___ ones     | 9 tens and 0 ones          |
| d. 45 = ___ tens and ___ ones     | 4 tens and 5 ones          |
| e. 73 = ___ tens and ___ ones     | 7 tens and 3 ones          |
| f. 44 = ___ tens and ___ ones     | 4 tens and 4 ones = 40 + 4 |
| g. 33 means ___ tens and ___ ones | 3 tens and 3 ones = 30 + 3 |
| h. 19 means ___ tens and ___ ones | 1 ten and 9 ones = 10 + 9  |
| i. 63 means ___ tens and ___ ones | 6 tens and 3 ones = 60 + 3 |
| j. 56 means ___ tens and ___ ones | 5 tens and 6 ones = 50 + 6 |

2. Write the numerals which mean these.

- |                                  |    |
|----------------------------------|----|
| a. _____ means 6 tens and 7 ones | 67 |
| b. _____ means 8 tens and 2 ones | 82 |
| c. _____ means 5 tens and 3 ones | 53 |
| d. _____ means 7 tens and 6 ones | 76 |
| e. _____ means 6 tens and 9 ones | 69 |
| f. _____ means 3 tens and 2 ones | 32 |
| g. _____ means 2 tens and 4 ones | 24 |
| h. _____ means 8 tens and 8 ones | 88 |
| i. _____ means 4 tens and 5 ones | 45 |
| j. _____ means 9 tens and 7 ones | 97 |

**B. Presentation**

Let's count how many sticks there are.



- |   |                      |
|---|----------------------|
| How many are there?   | 9 tens and 9 ones    |
| When we add one more stick to the ones, how many do we have then? | 10 tens and 0 or 100 |
| What do the numbers at the right mean?                            | 1 hundred            |
| Let's write the numeral which means this.                         |                      |

### C. Application

#### 1. Write the numeral for each exercise.

Three hundreds	300
Five tens	50
One seven hundreds	700
Three tens	30
Five one hundreds	500
Six tens	60
Three three hundreds	900
Two tens	20
Seven eight hundreds	5600
Four tens	40
One eight	8

#### 2. Give the missing digits.

- |  |                                 |
|--|---------------------------------|
| a. 785 means ____ hundreds,<br>____ tens, and ____ ones. | 7 hundreds, 8 tens, and 5 ones  |
| b. 804 means ____ hundreds,<br>____ tens, and ____ ones. | 8 hundreds, 0 tens, and 4 ones  |
| c. 500 means ____ hundreds,<br>____ tens, and ____ ones. | 5 hundreds, 0 tens, and 0 ones  |
| d. 513 means ____ hundreds,<br>____ tens, and ____ ones. | 5 hundreds, 1 ten, and 3 ones   |
| e. 930 means ____ hundreds,<br>____ tens, and ____ ones. | 9 hundreds, 3 tens, and 0 ones. |
| f. 644 means ____ hundreds,<br>____ tens, and ____ ones. | 6 hundreds, 4 tens, and 4 ones  |
| g. 493 means ____ hundreds,<br>____ tens, and ____ ones. | 4 hundreds, 9 tens, and 3 ones  |
| h. 836 means ____ hundreds,<br>____ tens, and ____ ones. | 8 hundreds, 3 tens, and 6 ones  |
| i. 406 means ____ hundreds,<br>____ tens, and ____ ones. | 4 hundreds, 0 tens, and 6 ones  |
| j. 899 means ____ hundreds,<br>____ tens, and ____ ones. | 8 hundreds, 9 tens, and 9 ones  |

### V. Assignment

- Write the numbers from 1 to 100.
- Write the numbers by fives from 1 to 100.
- Write the numbers by tens from 1 to 100.

**SEMIDETAILED LESSON PLAN IN MATH FOR GRADE III**

by Eugenia C. Sereño

Former Head, PNC Off-campus Unit

**I. Objectives**

At the end of the lesson, the pupils are expected to

- A. Write 3- or 4-digit numerals
- B. Explain the value of the numerals in 3- or 4-digit numbers
- C. Change numbers in words to figures

**II. Subject Matter**

Expanded Notation  
Place Value

**III. Materials**

Board exercises, sticks

**IV. Procedure****A. Preparation**

1. Let's see how well you can answer these:

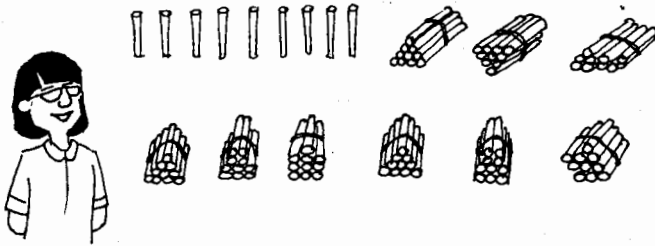
- a.  $27 = \underline{\quad}$  tens and  $\underline{\quad}$  ones
- b.  $58 = \underline{\quad}$  tens and  $\underline{\quad}$  ones
- c.  $90 = \underline{\quad}$  tens and  $\underline{\quad}$  ones
- d.  $45 = \underline{\quad}$  tens and  $\underline{\quad}$  ones
- e.  $73 = \underline{\quad}$  tens and  $\underline{\quad}$  ones
- f. 44 means  $\underline{\quad}$  tens and  $\underline{\quad}$  ones
- g. 33 means  $\underline{\quad}$  tens and  $\underline{\quad}$  ones
- h. 19 means  $\underline{\quad}$  tens and  $\underline{\quad}$  ones
- i. 63 means  $\underline{\quad}$  tens and  $\underline{\quad}$  ones
- j. 56 means  $\underline{\quad}$  tens and  $\underline{\quad}$  ones

2. Write the numerals which mean these:

- a.  $\underline{\quad}$  means 6 tens and 7 ones
- b.  $\underline{\quad}$  means 8 tens and 2 ones
- c.  $\underline{\quad}$  means 5 tens and 3 ones
- d.  $\underline{\quad}$  means 7 tens and 6 ones
- e.  $\underline{\quad}$  means 6 tens and 9 ones
- f.  $\underline{\quad}$  means 3 tens and 2 ones
- g.  $\underline{\quad}$  means 2 tens and 4 ones
- h.  $\underline{\quad}$  means 8 tens and 8 ones
- i.  $\underline{\quad}$  means 4 tens and 5 ones
- j.  $\underline{\quad}$  means 9 tens and 7 ones

**B. Presentation**

Let's count how many sticks there are.



(9 tens and 9 ones, 99)

When we add one more stick to the ones, how many do we have then?

(10 tens and 0, 100)

What does the number at the left mean?

Let's write the numeral which means this.

**C. Application**

1. Write the numeral for each exercise.

- a. three hundreds, five tens, and one
- b. seven hundreds
- c. three tens and five ones
- d. one hundred, six tens, and three ones
- e. three hundreds, two tens, and seven ones
- f. eight hundreds, four tens, and eight ones

2. Give the missing digits.

- a. 785 means \_\_\_\_ hundreds, \_\_\_\_ tens, and \_\_\_\_ ones.
- b. 804 means \_\_\_\_ hundreds, \_\_\_\_ tens, and \_\_\_\_ ones.
- c. 500 means \_\_\_\_ hundreds, \_\_\_\_ tens, and \_\_\_\_ ones.
- d. 513 means \_\_\_\_ hundreds, \_\_\_\_ tens, and \_\_\_\_ ones.
- e. 930 means \_\_\_\_ hundreds, \_\_\_\_ tens, and \_\_\_\_ ones.
- f. 644 means \_\_\_\_ hundreds, \_\_\_\_ tens, and \_\_\_\_ ones.
- g. 493 means \_\_\_\_ hundreds, \_\_\_\_ tens, and \_\_\_\_ ones.
- h. 836 means \_\_\_\_ hundreds, \_\_\_\_ tens, and \_\_\_\_ ones.
- i. 406 means \_\_\_\_ hundreds, \_\_\_\_ tens, and \_\_\_\_ ones.
- j. 899 means \_\_\_\_ hundreds, \_\_\_\_ tens, and \_\_\_\_ ones.

**V. Assignment**

1. Write the numbers from 1 to 100.
2. Write the numbers by fives from 1 to 100.
3. Write the numbers by tens from 1 to 100.

### BRIEF LESSON PLAN

- I. To be able to write 3- or 4-digit numerals, change numbers in words to figures, and explain their values
- II. Place Value and Expanded Notation
- III. Board exercises, sticks
- IV. A. 1. Tell how many tens and ones are in 27, 58, 90, 45, 73.  
Expand and tell the meaning of 44, 33, 19, 63, 56.
2. Write the numeral which means
  - 6 tens and 7 ones
  - 3 tens and 2 ones
  - 5 tens and 3 ones
  - 7 tens and 6 ones
  - 6 tens and 9 ones
- B. Use sticks to illustrate the following:
  - 9 tens and 9 ones. Add 1 to 9 ones.
  - 10 tens = 100. The first digit stands for the hundred's place.
- C. Change numbers in words to figures. Identify each digit whether in the hundreds, tens, and ones place.
- V. Assignment
  1. Write the numbers from 1 to 100.
  2. Write the numbers by fives from 1 to 100.
  3. Write the numbers by tens from 1 to 100.

## WRITING BEHAVIORAL OBJECTIVES

Earlier it was mentioned that the present trend is to use behavioral objectives in planning lessons. The following discussion will give ample and detailed suggestions on how to use educational objectives.

Educational objectives, specific or otherwise, serve a valuable function in the educational process. Effective instruction occurs when learners are provided with instructional experiences that are designed to help them achieve goals stated in instructional objectives. Instructional objectives require specification of student learning in terms of observable and measurable behavior. Statement of educational objectives in behavioral terms facilitates the evaluation of educational programs and improves the validity of the measures and scales used in the evaluation process (Metfossel and Michael 1967).

## Basic Concepts in Writing Educational Objectives

Instructional objectives should contain the following five elements:

1. Who is to perform the desired behavior (e.g., the pupil, the student, or the learner)
2. The actual behavior to be employed in demonstrating mastery of the objective (e.g., to write, to identify, or to distinguish)
3. The result (i.e., the product or performance) of the behavior which will be evaluated to determine whether the objective is mastered (e.g., an essay or the speech)
4. The relevant conditions under which the behavior is to be performed (e.g., in a one-hour quiz or at the end of a forty-minute period)
5. The standard that will be used to evaluate the success of the product or performance (e.g., 90 percent correct or eight out of ten correct)

## Taxonomy of Objectives

A classification scheme categorizes a wide range of learning outcomes into more manageable clusters that share some common dimensions. The three-scheme category classifies the type of learning outcome as cognitive, affective, and psychomotor.

According to Gagne (1977), classification of objectives is necessary for planning and sequencing of instruction.

### *Cognitive Domain*

Bloom's committee found that the majority of objectives in the educational literature were found related to the cognitive domain. The objectives classified as cognitive emphasize intellectual learning and problem-solving tasks. Behaviors in this domain range from performing simple recall tasks to placing previously learned material into new contexts and synthesizing bodies of learned information. The following is an abstract of the taxonomy of educational objectives for the cognitive domain:

1. *Knowledge*. Knowledge involves the recall of specifics and universals, the recall of methods and processes, or the recall of a pattern, structure, or setting. Knowledge objectives emphasize most the psychological processes of remembering.
  - a. Knowledge of specifics—This involves the recall of specific bits of information. This knowledge, which is at a very low level of abstraction, may be thought of as the elements from which more complex and abstract forms of knowledge are built.
  - b. Knowledge of terminology—This includes knowledge of the most generally accepted symbol referents or knowledge of the referent most appropriate to a given use of symbol.



*Example.*

To define technical terms by giving their attributes, properties, or relations

Knowledge of specific facts. This refers to knowledge of dates, events, persons, places, etc.

c. Knowledge of ways and means of dealing with specifics—This is knowledge of the ways of organizing, studying, judging, and criticizing. This includes the methods of inquiry, the chronological sequences, and the standards of judgment within a given field. This knowledge is an intermediate level of abstraction between specific knowledge and the knowledge of universals.

1) Knowledge of conventions—This refers to knowledge of characteristic ways of treating and presenting ideas and phenomena. For purposes of communication and consistency, styles, practices, and forms are employed.

*Example.*

To make pupils conscious of correct form and usage in speech and in writing

2) Knowledge of trends and sequences—This refers to knowledge of the processes, directions, and movement of phenomena with respect to time.

*Example.*

To identify the different periods in Philippine history

3) Knowledge of classifications and categories—This refers to knowledge of the classes, sets, divisions, and arrangements for a given subject/field, purpose, argument, or problem.

4) Knowledge of criteria—Knowledge of criteria by which facts, principles, and conduct are tested or judged.

5) Knowledge of method—Knowledge of the methods of inquiry, techniques, and procedures employed in a particular subject/field.

d. Knowledge of the universals and abstractions in a field—Knowledge of major schemes and patterns by which phenomena and ideas are organized. These are the theories and generalizations generally used in studying phenomena and solving problems. These are at the highest levels of abstraction and complexity.

1) Knowledge of principles and generalizations—These are abstractions that are of value in explaining, describing, predicting, or determining the most relevant action or direction to be taken.

2) Knowledge of theories and structures—These are the most abstract formulations, and they are used to show the interrelation and organization of a great range of specifics.

2. *Comprehension.* This refers to a type of understanding such that the individual can make use of the material or idea being communicated

without necessarily relating it to other materials or seeing its fullest implications

- a. **Translation**—Translation is judged on the basis of accuracy, that is, the extent to which the material in the original communication or text is preserved although the form of the communication has been altered.
  - b. **Interpretation**—The explanation or summary of a communication. It involves a reordering, rearrangement, or review of the material.
  - c. **Extrapolation**—The extension of trends or tendencies beyond the given data to determine implications, consequences, corollaries, effects, etc., in accordance with the conditions described in the original communications.
3. **Application**. The use of abstractions which may be technical principles, ideas, and theories in particular and concrete situations.
  4. **Analysis**. The breaking up of a communication or text into its constituent elements or parts such that the relative hierarchy of ideas is made clear and/or the relations between the ideas expressed are made explicit.
    - a. **Analysis of elements**—The identification of the elements included in a communication.
    - b. **Analysis of relationships**—The connections and interactions between elements and parts of a communication.
    - c. **Analysis of organized principles**
  5. **Synthesis**. The putting together of elements and parts to form a whole. This involves the process of working with pieces, parts, elements, etc., and arranging and combining them to constitute a pattern or structure not clearly seen or observed before.
  6. **Evaluation**. The judgments about the value of the material and methods for given purposes. Evaluation involves quantitative and qualitative judgments about the extent to which material and methods satisfy criteria. The criteria may be determined by the student or by the teacher.

### *Affective Domain*

The affective domain contains behaviors and objectives that have some emotional overtones. It encompasses likes and dislikes, attitudes, values, and beliefs. The following is an abstract of the taxonomy of educational objectives for the affective domain.

1. **Receiving**. At this level, the concern is for the learner to be sensitive to the existence of certain phenomena and stimuli, that is, he is willing to receive or attend to them.

The category of receiving has been divided into three subcategories to indicate three levels of attending to phenomena.

- a. Awareness—Here the learner is conscious of something that accounts for a situation, phenomenon, object, or state of affairs.
  - b. Willingness to receive—At this level, the behavior is willingness to tolerate a given stimulus, not to avoid it.
  - c. Controlled or selected attention—At this point, the learner controls the attention so that the favored stimulus is selected and attended to, despite competing and distracting stimuli.
2. *Responding*. At this stage, the concern is with responses that go beyond merely attending to the phenomenon. One is doing something with the phenomenon besides merely perceiving it.
  3. *Valuing*. Behavior categorized at this level is consistent and stable to have taken on the characteristics of a belief or an attitude. An important element of behavior characterized by valuing is that it is motivated not by the desire to comply or obey but by the individual's commitment to the underlying values that guide the behavior.
  4. *Organization*. As the learner continuously internalizes values, he encounters situations for which there are several relevant values. Thus arises the necessity for (a) the organization of the values into a system, (b) the determination of interrelationships among them, and (c) the establishment of the dominant and pervasive ones. Such a system is built gradually, subject to change as new values are incorporated. This category is intended as the proper classification for objectives that describe the beginnings of the building of a value system.
  5. *Characterization by Values or Value-Complex*. At this level of internalization, the values already have a place in the individual's values hierarchy. They are organized into some kind of internally consistent system which controls the behavior of the individual.

### *Psychomotor Domain*

The major organizational principle operating in this domain is that of complexity with attention to the sequence involved in the performance of a motor act. Harrow's (1972) taxonomy for the psychomotor domain includes

1. *Perception*. This is an essential first step in performing a motor act. It is the process of becoming aware of objects, qualities, or relations by using the sense organs. It is necessary but not sufficient for motor activity. It is basic in the situation-interpretation-action chain leading to motor activity.
2. *Set*. Set is a preparatory adjustment of readiness for a particular kind of action in experience.

3. *Guided response.* This is an early step in the development of skill. Emphasis here is on the abilities that are components of the more complex skill. Guided response is the overt behavioral act of an individual under the guidance of an instructor or in response to self-evaluation where the student has a model or criteria with which to judge personal performance.
4. *Mechanism.* At this level, the learner has achieved a certain confidence and degree of proficiency in the performance of the act. The act is part of one's repertoire of possible responses to stimuli and the demands of situations where the response is an appropriate one.
5. *Complex overt response.* At this level, the individual can perform a motor act that is considered complex because of the movement pattern required. At this level, skill has been attained. The act can be carried out smoothly and efficiently, that is, with minimum expenditure of time and energy.
6. *Adaptation.* At this level, motor activities are altered to meet the demands of a new problematic situation requiring physical response.
7. *Origination.* This involves creating new motor acts or ways of manipulating materials based on understandings, abilities, and skills developed in the psychomotor area.

Specifying learning outcomes places an additional but necessary burden on teachers, curriculum planners, and other individuals involved in the design and/or implementation of instruction. This classification, however, allows for greater ease and clarity in identifying a wide variety of specific and general outcomes.

## **SUMMARY**

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Every teacher needs to have a lesson plan. It is useful not only to the teacher, but also to principals, supervisors, and substitute teachers. A lesson plan is the blueprint of what the teacher intends to accomplish. It contains the objectives, subject matter, materials, procedure, and assignment. Lesson plans may be classified as (1) detailed, (2) semidetailed, and (3) brief. To make good lesson plans, it is necessary to have knowledge of the (1) subject matter, (2) children, (3) methods, (4) materials, and (5) objectives.

The discussion on educational objectives focused on procedures for classifying and sequencing instructional objectives. A behavioral taxonomy was considered as a classification scheme to organize instructional objectives. Taxonomies for the cognitive, affective, and psychomotor domains were also presented.

A behavioral taxonomy serves as a guide in determining (1) what is the appropriate level of behavior associated with a desired learning outcome and (2) the extent to which objectives for a unit of instruction reflect various levels of behavior.

**STUDY GUIDE**

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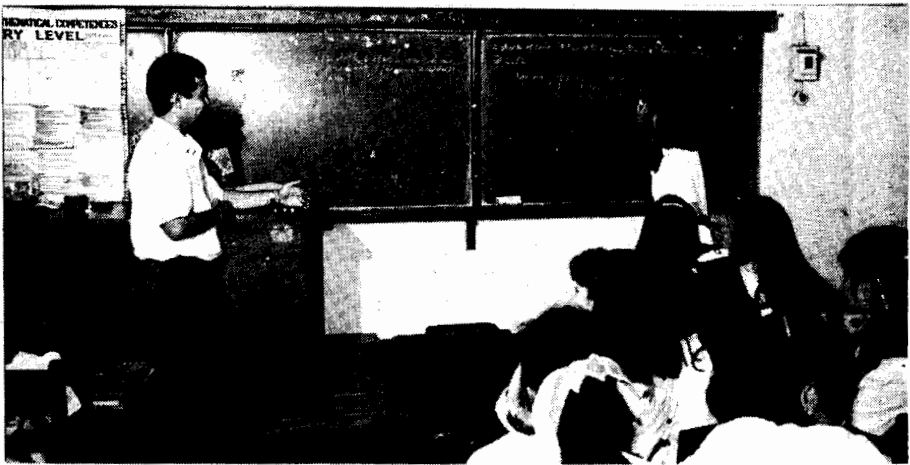
1. What is a lesson plan?
2. Why do teachers need to make lesson plans?
3. What are the different forms of lesson plans?
4. What types of lesson plans are used in Philippine schools?
5. Formulate behavioral objectives within the hierarchy of the major levels and sublevels of the taxonomies of educational objectives as set forth by Bloom for an instructional unit in (a) araling panlipunan, (b) science, and (c) physical education.

## TYPES OF LESSONS

### OBJECTIVES

1. To tell the kinds of development lessons and give examples
2. To differentiate the drill from the review
3. To show the forms that application lessons may take
4. To give the conditions necessary to effective appreciation

Some lessons may not follow a specific method or may use a combination of methods. Such lessons may be classified into types, depending on the objectives and the subject matter. Daily lessons may fall into the following categories: (1) development lesson, (2) review lesson, (3) drill lesson, (4) application lesson, (5) supervised study lesson, (6) tests or examination lesson, and (7) appreciation lesson. It is also possible for a lesson type to make use of a specific method, as illustrated in the following pages.



*A well-done assignment aids the learner to prepare for the written or oral review.*

## THE DEVELOPMENT LESSON

### Nature

The development lesson is one in which something new is presented or developed. It may be a fact, a principle, a skill, a generalization, or some knowledge. It must be something the class did not know before.

### Types

Development lessons are of two types, the formal and the informal. The formal development lesson uses formal time-tested methods such as the inductive, deductive, or problem solving. The informal development lesson does not make use of a definite method with definite steps. It may use the question-and-answer- or Socratic method. It may use the conversational method or what some authors call "developmental method" where the child is encouraged to see the facts, form his judgment, discover truths for himself, and make a conclusion. The developmental method differs from the telling method because the class is not just told or given the information. As Thomas M. Risk (1965) says:

The developmental procedure is used when the learners go through the steps of the learning process in order to attain some understanding, interpretation, generalization, or solution. This is the antithesis of the authoritative method, through which the learner receives the information given by some authority—generally the teacher or the textbook. As ordinarily interpreted, the term "developmental study method" is applied to a direct learning procedure, under the directions of the teacher, in which students participate step by step.

Many lessons in the primary grades are of the informal development type. The logical thinking required by the inductive or deductive process is usually not in keeping with children's mental development, short attention span, and the short periods allotted to subjects.

### Steps

An informal development lesson may have the following steps:

1. *Preparation.* The preparation consists of the cognitive and motivational aspects. The teacher may review facts or recall old experiences related to the new lesson. It is in the preparation step that the right mental set for the lesson is established. The motivation of the lesson is taken care of in the preparatory step.
2. *Presentation or development.* The teacher directs children's learning by means of questions and teaching aids, leading the class to examine, analyze, compare, contrast, generalize, observe, judge, or discover something.

During the presentation step, the teacher makes the class aware of what is to be learned through clear perception of the object, specimen, fact or event, and the like.

3. *Application.* This step is the test of whether the pupils have really learned or not. No impression has been made if there is no correlative expression. No learning has, therefore, occurred if a child cannot apply or make use of what he has learned. If he learned a rule in the lesson, he should be able to apply the rule in solving other exercises. If he learned a fact, he should be able to recognize this fact in other situations.

Learning is facilitated where the developmental procedure is used well because the steps coincide with the steps of the learning cycle which are (1) stimulus, (2) assimilation, and (3) use or application.

The conditions necessary to a good development lesson are

1. *The teacher's mastery of the subject matter.* Since the learning of the pupils depends on the guidance and direction of the teacher, the latter should plan and organize the subject matter well. He should know what experiences and activities must be included in the lesson and the type and sequence of questions to ask.
2. *Recall of past experiences or information that have a bearing on the new lesson.* Since the apperceptive basis is important in determining the mind set and motivating learning, the teacher should plan this step with care.
3. *The teacher's clear awareness of what is to be perceived, presented, or developed.* The use of teaching aids and mastery of the means of communication may be of use here. The teacher should also adjust his vocabulary and materials to the age of the pupils.

### Advantages

In addition to what has been cited before, that the developmental procedure corresponds to the learning cycle, there are other advantages of the method. They are (1) the rule or principle that what is taught is better understood and mastered because meanings are experienced; (2) learning is facilitated because it is done step by step; (3) satisfaction results because the pupil feels that he is doing things independently; and (4) valuable concomitant outcomes are developed such as (a) ability to think for oneself, (b) skill in attacking and solving problems, and (c) self-confidence.

### Disadvantages

The developmental method, however, has certain limitations such as (1) where a rule, definition, or principle may be easily understood by reading, use of the method would be a waste of time; (2) it is not suitable for some subjects, activities, or outcomes, as for instance, certain types of literature; and (3) since the method is under the direction of the teacher, the child instead of becoming self-dependent may become more dependent on the teacher.



The following lesson plans illustrate informal development lessons where children learn concepts.

**A LESSON PLAN IN ART EDUCATION FOR GRADE 3**

by Flordellza Regala-Paredes

Supervisor

St. Jude College, Manila

Lessons in science and health are good sources of art activities. After learning the nutritional value of eggs, the pupils can work and play with eggshells. This lesson in art will encourage the pupils to use their creativity and make use of discarded materials.

- I. With cleaned, dried eggshells, the pupils should be able to**
- A. Talk about their toy dolls and toy soldiers
  - B. Make dolls out of eggshells
  - C. Prepare beautiful eggshell dolls for decorations

**II. Art Activity: Eggshell Dolls**

Ref.: Noncreative

Materials: eggshells, water color, paint brush, stick, straw, pieces of cloth, thread, etc.

**III. Procedure**

- A. Preparation of all art materials
  - B. Motivation
- Ask:
- 1. What do we get from eggs?
  - 2. What can we do with the eggshells?
- C. Recall the standards to be followed while working.
  - D. Activity proper

Making eggshell dolls

(Note: The teacher may set up the cassette player to give a jolly atmosphere while the class is working.)

**IV. Evaluation**

Let the pupils answer the following:

- 1. How did you work?
- 2. Show your finished work and tell something about it.

**V. Agreement**

Find other ways of using eggshells in art activities.

**A LESSON PLAN IN LANGUAGE PHASE  
FOR PREPARATORY LEVEL**  
by Flordeliza Regala-Paredes

**I. Objectives**

After the activities, the pupils are expected to

- A. Read the action words
- B. Act out and guess the action words shown
- C. Express enjoyment in playing simple games

**II. Subject Matter**

Action Words: *run, jump, play, sleep, bit, stand, dance, write, cry, swim, dig, sing, walk*

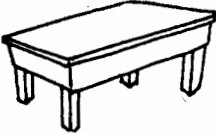
Ref.: *Reading for Beginners*, pp. 61-66

**III. Procedure**

- A. Action Song: "A-Hunting We Will Go"
- B. Review: "Catch the Ball" and use of *is* or *are* in sentences  
Seatwork/Boardwork: Box the correct answer.



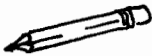
is, are



is, are



is, are



is, are

**C. Lesson Proper**

- 1. Get one picture from the chart. Do the action. Let the other pupils guess.

(Note: Picture should not be seen by the class.)

- 2. Read all the action words learned from the game.

**D. Song: "Farmer in the Dell"**

**IV. Seatwork**

Copy the action words that describe the pictures.

Example:



sleeping

1.



\_\_\_\_\_

2.



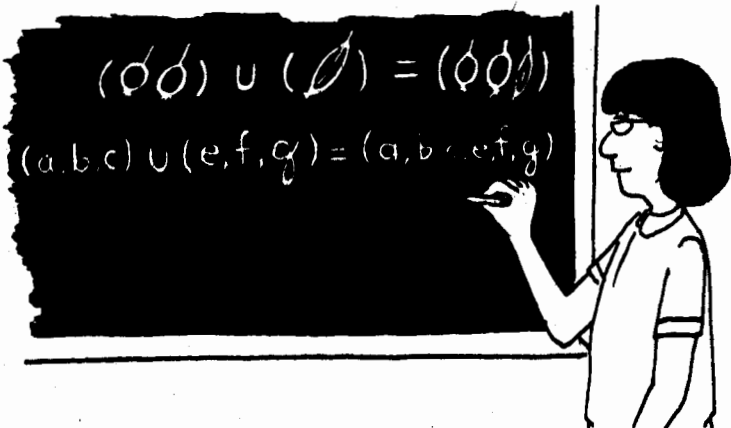
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Add some more.

**THE REVIEW LESSON**

**Nature**

A development lesson is often followed by a review lesson. A review lesson aims to renew study of the same subject matter or to recall what has been taken up in the past and view this again from a different perspective or point of view. New associations, new relationships, new interpretations may be discovered in the second study that may not have been evident in the first lesson.



A popular but incorrect concept of the review is that it is a mere repetition of facts or of past lessons. A review means a new view of old facts in a broader setting that should result in new meanings, associations, attitudes, and ways of acting. Hence the method used in a review lesson should be a different one from that used in the first presentation.

### Misinterpretations

Review is often misinterpreted to mean drill. Although both require repetition, their objectives differ, as will be discussed later. Review is also used interchangeably with test, as evidenced by teachers who say, "Tomorrow, we shall have a written review." The written review turns out to be a test that recalls factual material and which makes no provision for review of past information. Review is a teaching, not a testing, procedure.

### Purposes of the Review

Although the review lesson aims mainly to give a new view, it has other purposes, such as

1. *Retention of material learned.* Although this is actually a by-product rather than an objective, still any form of repetition serves to fix learning in the mind. Review used to be associated with retention of facts and information; hence the review before an examination.
2. *Organization of materials and experiences into large wholes.* Facts learned in the daily lessons need to be tied together into a meaningful whole. Without the review, pupils may assimilate many unrelated facts; this results in no learning at all. For learning to be significant and meaningful, facts learned in the various lessons should be seen and manifested in the daily experiences of the learner.
3. *Development of ability to evaluate material.* Daily lessons impress on the learner that facts and topics are of equal worth. When the small units are organized into a large unit, the pupils get a new perspective of the whole. They eventually see the important points and the minor details that support the points.
4. *Supplementation of materials and experiences.* During the presentation of a new lesson, it may not be possible to take up all the details. It is during the review that elements of new learning may be given to round out the units, to clear confusion, and to make understanding complete.
5. *Foundation for further learning.* A review of the past lesson may be necessary to form the apperceptive basis of a new lesson. The teacher may need to recall facts or events as background of the new learning, or the apperceptive basis may function to arouse the proper mind set.
6. *Diagnosis of pupil weakness.* A review usually will reveal the weaknesses of the pupils. This weakness may be insufficient preparation or inability to analyze, interpret, or generalize from information acquired.

7. *Diagnosis of teacher weakness.* The weakness of the pupils may be due to the teacher's shortcomings. If the review shows that the pupils cannot recall even 50% of what they learned, the teacher had better analyze his own teaching. Did he provide for activity and direct experiencing? Did he present the lesson in a clear and interesting manner? Did he utilize teaching aids and materials suited to the mental level of the child?
8. *Development of interest in old materials.* Shakespeare's plays have more interest for the college student than for the high school pupil. It is usual for the student not to be interested in what he is taking at the present because it does not seem to have any use. Later, when he realizes its value, he begins to be interested. The review serves the purpose of awakening interest in old materials.
9. *Stimulation of original thinking and creativeness.* There is a saying that there is nothing new under the sun, that inventions are just new ways of putting old elements together. Thinking about old facts and ideas may suggest new ways of using them and thus lead to creativity.
10. *Tracing the core or main thought throughout a unit.* A unit of work may take days or a week to complete. Piecemeal information may be taken daily which should be tied together by means of the review.
11. *Reorganization of previously organized information into a new pattern.* This is the chief objective of a review lesson. The same subject matter may be taken up but from a different angle, and something new may be learned every time. Take the story of Jose Rizal. It may be taken up the first time as a simple biography of a hero. The second time the story is taken up, the emphasis may be on Rizal's versatility and therefore his different talents and accomplishments may be listed. Another time, the focus may be on Rizal's patriotism. His life may be reviewed and proofs of his love of country cited.

### Types of Review

There is no single form of review that will serve all purposes, but there are many types of review. Just which type to use will depend on the subject and the objectives. Some types may be adapted to some areas, but not to others. Reviews may be classified into three types.

1. *The short prelesson daily review for three or five minutes.* This type of review can provide the apperceptive basis for the new lesson. It stimulates and directs study toward definite goals. A weakness of the daily review is that too much time may be used up and wasted. One or two review questions assigned the day before should overcome this weakness.
2. *The postlesson unit review.* This takes up more time than the daily review—a whole period or more. This review may be used in organizing materials and experiences into large whole units or reorganizing previously organized information into a new pattern. The pupils

should have thorough preparation to gain much from the review. A good assignment with problems and thought-provoking questions will aid the pupils to prepare for the written or oral review.

3. *Extensive large unit review involving coordination of many units.* There may be recall of facts, but the emphasis is on major issues and significance of big movements. Such a review can take place toward the end of the semester or school year and spread over several days.

Bossing (1961) gives another classification of reviews. He cites oral or written reports and topical outlines as adapted to individual review. These two types give training in ability to organize material, but the teacher must guard against the review becoming mechanical and boring. The third type, problem review, has the advantage of flexibility. Solving a problem changes the student's point of view right away, and he has to recall facts and experiences from other sources for its solution. The problem vitalizes the review. The cooperative review is so called because the students and the teacher participate in a give-and-take situation. The exchange of social ideas is one advantage of this type of review. The problematic approach may also be used here. In the summary review, the highlights of the previous day's lesson are taken up at the beginning of the period by the teacher in lecture form. Students may sometimes be asked to do it. This is similar to the daily review. The cumulative review is similar to the summary review except that the former is wider in scope. It is also applied to subject matter with a continuity of theme.

## Techniques of Review

How should the review be conducted? Since the review involves reorganization and reintegration of experiences to see facts in new relationships, many methods can be used. The method used in the review should not be the same as that used in the teaching of the subject. A review deserves as much attention and planning as a development lesson. The following pointers make the review worthwhile:

1. *Time of review.* There is no definite time for the review. It should be given when necessary, as determined by the needs of the class and by the goals and the nature and importance of the subject matter.

A review may be given at the end of a unit to find out how much the pupils have learned. It may be given before a test or an examination to prepare the pupils or to help them organize the subject matter. It may be given at the beginning of the period to serve as apperceptive basis for the new lesson or to straighten facts. It may be given during the recitation to recall something that may have been forgotten. In fact, a review can be given at any time whenever the need arises.

2. *Length of the review.* There is no time limit for the review. The daily review may be only for a few minutes. The review at the end of a unit may use up the whole period, while the review at the end of the year may last for two or three days.

3. *Preparation for review.* The review lesson should be as well prepared as any lesson. It should also have the necessary steps, such as objectives, motivation, approach, and activities. Since a review is a learning exercise, the teacher should plan it well and not leave it in the hands of a student chairman.

### Principles of a Review Lesson

For a review to be worthwhile, certain principles should be followed. Here are some suggestions to make the review lesson effective.

1. *The review must be of value to the learner.* The pupils should know the purpose of the review, recognize the need for it, be convinced that it is worthwhile, and understand it.
2. *The review should be interesting.* It should not be a mere repetition of what has been taken up before or it will become dull and boring. Interesting review activities may take the form of oral discussions, reports, outlining, summarizing, making graphs, maps, charts, scrap-book, collections, and the like.
3. *The review should follow the psychological principles of learning.* This means that the learner should be made aware of how he is progressing. A combination of the whole and part method of practice would be best. If there is more than one review lesson, the review should be distributed. Short and liberally spaced practice periods get better results. Conditions of the review should be such as to prepare the learner for the use of the skill later on.

### Conditions for a Good Review

What are the earmarks of a good review lesson? A good review depends on the following conditions: (1) previous lessons must have been studied; (2) too much should not be covered in one lesson; (3) the teacher should have thorough mastery of the subject and organize it as a whole; (4) the teacher should lead the pupils to organize the subject into large units, seeing the main points and putting the minor points where they belong; and (5) the teacher should help the pupils outline the summary so that the pupils may see the relative value of the parts.

If the pupils did not study the lesson during its first presentation, a review is useless. How can they have a second view if they did not get the first view? Covering too much in one lesson defeats the purpose of the review. Hurried superficial work will not produce the desired result, and the pupils will not see the points in their proper relationships. The planning of the review should be done by the teacher. He should, therefore, should have mastery of the subject so that he can see the relationship between the main points and the minor points of the subject; otherwise the review will be of little or no use to the students, who need the teacher's guidance to see things in their proper perspective.

The following lesson plan reviews the fractional concepts of  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{3}$ , and  $\frac{1}{8}$ . These fractions were developed one by one in separate lessons, presumably making use of the formal or informal approach.

**A LESSON PLAN IN MATHEMATICS FOR GRADE 2**  
**A Review Lesson**

**I. Objective**

Given a set and parts of a set, the children should be able to name the halves, fourths, eighths, and thirds of that set.

**II. Subject Matter**

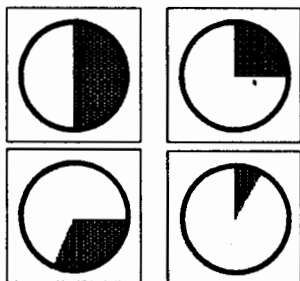
Recognizing Halves, Fourths, Eighths, and Thirds

*Teacher Activity*

*Pupil Activity*

**A. Recall of concept**

(Teacher shows cards of circles with parts of  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ,  $\frac{1}{3}$ .)



I'll flash these cards.  
 Tell us what parts are colored.

$\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{3}$ ,  $\frac{1}{8}$

**B. Fixing of skills**

Let's put our flash cards on the chalkledge. Above each, write the name of the colored part of each circle.

Come up front and show us  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{3}$ ,  $\frac{1}{8}$ .

**C. Further application**

- (Teacher calls on 24 pupils to stand in front of the room.)  
 How many children are there?  
 Come and write that number on the board.  
 (Points to the 24 children)  
 This is a set of 24 children.

24 children



I'll divide this into two groups.  
 Count the members in each group.  
 How many members are in each group? 12  
 What can you say about the group? They are equivalent.  
 What do you call each group? 1/2  
 Write it on the board.  
 This time I'll group them into four.  
 Count each group.  
 How many members are in each group? 6  
 Are the groups equivalent? Yes, the groups are equivalent.  
 How do you call each of the four groups? 1/4  
 Write it on the board.  
 (Teacher groups the children into 3 and 8. Each time, she lets the class count the members in each group and identify the groups as  $1/3$  and  $1/8$ .)

2. Connect the fraction to the frame that it identifies.

$1/2$



$1/4$



$1/8$



$1/3$



D. Seatwork

Draw and color the part that the fraction describes.

$1/2$

$1/4$

$1/3$

$1/8$

## THE DRILL LESSON

### Nature and Purpose

Sometimes a development lesson is followed by a drill instead of a review. Where a review lesson is intended to give a new view of old material, the drill lesson is for automatization of certain facts, habits, or skills. Drills aim to fix associations for permanency or to perfect a skill. Drills are needed for mastery, and all subjects need a little amount of drill.

Drills are necessary for the mastery of the multiplication table and correct usage, correct spelling, and correct grammar and for remembering important

historical dates. Drills are also needed for training in motor skills such as handwriting, typewriting, shorthand, shopwork, and in the mechanics of reading, pronunciation of foreign words, and the habituation of certain acts.

Some authors use *drill* and *practice* interchangeably, but although both make use of repetition, they are really different. The term *drill* refers to activities that involve memorization. The term *practice* refers to activities involving acquisition of skills and skill of application. Thus the spelling of words, number combinations, and the alphabet are drilled on, but applying rules and principles, acquiring motor abilities, and solving problems are practiced.

### Material for Drill

A drill lesson takes up the same material over and over again until it is mastered. The same activity is practiced until it becomes automatic. It follows, therefore, that only material that is important or of lasting value should be drilled on.

Drills are more often used in form subjects rather than in content subjects. It would not be advisable to use drills too much in content courses like science and social studies subjects as the pupils would tend to memorize rather than comprehend and reason. Drills are invaluable, however, in spelling, phonics, handwriting, drawing, and other form subjects.

### Drill Procedure

Mere repetition will not bring mastery. Repetition must be with attention, comprehension, and interest. Observation of drill work in some classrooms often shows boredom, apathy, and listlessness in pupils. Yet children love repetition, as shown by the number of times they play the same game or sing a song over and over. A drill will be effective if the teacher follows certain steps such as (1) motivation, (2) focalization, (3) repetition with attention, and (4) application.

1. *Motivation.* Motivation to do a drill is necessary to arouse pupils to maximum and sustained effort. Pupils should be made to feel a need for the skill or activity and they should be made to want it. Creating interest is the best motive. Sometimes correlating the lesson to children's existing interests can serve the purpose. Interest may be sustained throughout the lesson if the pupils are made aware of the outcomes to be achieved, the standards to be attained, and the progress they are making.
2. *Focalization.* A drill requires concentration and so children's attention should be focused on the specific facts, habits, or skills to be drilled on. If a model is furnished, this should be worthy of imitation. The teacher who drills the class on correct penmanship must see to it that his own penmanship provides a good model. If he is drilling on correct pronunciation, he must speak the language well himself.
3. *Repetition with attention.* As has been said before, mere repetition will not result in learning unless accompanied by attention. Yet one can hardly expect children to be attentive when they feel bored and tired.

Since children's attention span is short, the teacher should devise means to prevent their attention from wandering.

The use of games is very effective in getting repetition with enjoyment and in sustaining interest. Children love to play, and games will encourage participation. Each pupil must participate though, not just listen, if the drill is to be effective. Competition is also very appealing to pupils, but the teacher should use contests with caution, as undesirable results may ensue.

Teaching aids and devices can also break the monotony of repetition. Intrinsic devices are better than extrinsic ones. There should be a variety of teaching aids, and the time devoted to each should not be too long or the child's attention will wander. The drill should be short and snappy.

The teacher should remember that devices are only for getting attention and interest. The time seems short when games and devices are used. A good device is one that is simple, intrinsic, concrete, and based on psychological principles. It should not be so elaborate as to waste time. The teacher should guard against overworking a good device and allowing pupils to depend too much on devices.

4. *Application.* To show that he has profited from the drill, the pupil must be able to apply what he has learned. For example, if the drill is on primary addition and subtraction combinations, a good application would be playing grocery store or plain buying and selling.

The drill should be conducted in the manner knowledge is to be used. If the teacher wants pupils to be able to pronounce *e* and *i* correctly, drilling on the two sounds simultaneously will not be effective. To do so will confuse the pupils. It would be better to drill on one sound alone and to take up the other after the first is mastered.

### Principles in Drill Work

In order to make drills effective, certain principles should be followed. These are

1. *Utilization of the principles of learning.* The pupils should be ready for the drill. They will not be ready to memorize something they have not previously learned. Exercise or practice is necessary to learning, but it must be correct practice. The repetition must be accompanied by active attention, zeal, and understanding of the task. Pleasant effects should result from the work, or it will be difficult to get repetition. Reward and praise may be used to improve performance. Encouragement may be given where needed. First impressions and responses should be correct right from the start.
2. *Way of conducting the drill.* The teacher should conduct the drill in a systematic way—fast, precise, uninterrupted by discussion. The teacher should be dynamic, alert, enthusiastic, perhaps with an air of impatience to hurry the sluggards along. To keep pupils on their toes, there should be no set order in calling for responses. Whatever will slow down the drill should be avoided, such as recording grades, paying attention to irrelevant matters, etc.

3. *Standards.* Attainable standards that can guide pupils in their performance should be set up. Accuracy, speed, quality, and quantity should be considered in setting up standards. Care should be exercised in using props as these may be more of a hindrance than a help. Practice periods should be short at first and gradually lengthened later.
4. *Individualization.* For the teacher to drill the class on the same things is wasteful and uneconomical. Seldom will all children need practice on the same facts or skills. In the multiplication table, children will have difficulty with different combinations. A good way would be to divide the class into groups according to their weaknesses or needs. In the past, concert drill was used. Today that is passé.

## Outcomes of Drill

Drill results in establishing habits, skills, and rote associations. Habits are automatic responses. The teacher aims not just at forming a habit but at developing the habit into a skill. For example, one may learn to type and to use the proper finger for the proper key. This is a habit. To type fast and without looking at the keyboard is a skill. *Rote association* means remembering words or ideas in a definite order, such as in reciting a poem or singing a song. Further drill results in increased command of tools, greater knowledge, and improved habits of work.

The following lesson plan illustrates a drill lesson where reading and writing numbers consecutively are drilled on.

### A DETAILED LESSON PLAN IN MATHEMATICS FOR GRADE 1

by Edita C. Monerrate  
Philippine Normal College

#### The Drill Lesson

Unit: Numeration System

#### I. Objectives

Given sets from zero to nine elements, the children should be able to

- A. Arrange the numbers consecutively
- B. Read and write the numbers consecutively

#### II. Subject Matter

<i>Teacher Activity</i>	<i>Pupil Activity</i>
A. Preparation	
Count the members of your table.	1, 2, 3, etc.
How many are at your table?	We're 5 at our table.
Write the number on the board.	We're 6 at our table.
Read the numbers.	We're 4 at our table. 5 6 4

**B. Focalization**

I place those numbers on these flash cards.

Read the number as I flash the card.  
If the table has no number, what number may I give it?

1, 2, 3, 4, 5, 6, 7, 8, 9, 0  
0

Here are the flash cards. Let's arrange them in their proper order. (Teacher scatters the flash cards on the chalkledge.)

With what number are we going to start?

0

Come up front and put the next number.

1

2

Next, etc., until 9.

0, 1, 2, 3, 4, 5, 6, 7, 8, 9

Let's read the numbers.

(Class, group, then individual pupils will be called to recite.)

**C. Repetition**

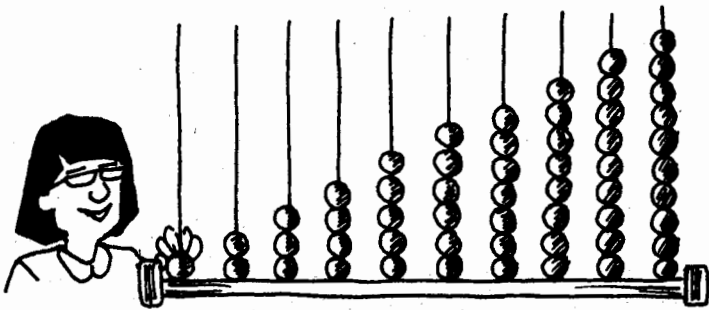
- Who can write the numbers on the board?
- Here are wire pegs and bottle caps. How many bottle caps will I put on the first peg if it is named zero? the next peg?

None

1

(Teacher calls on different pupils to put bottle caps on the next pegs.)

The pegs will look like this.



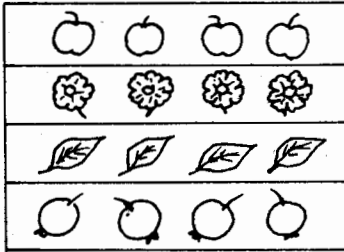
Say the number of bottle caps as I point at the pegs.

0, 1, 2, 3, 4, 5, 6, 7, 8, 9

**D. Application**

- Fill the missing number.  
0, \_\_\_\_\_, 2, 3, \_\_\_\_\_, 5, \_\_\_\_\_  
7, \_\_\_\_\_, \_\_\_\_\_

2. Color the pictures indicated by the number on the left.



3. Write the number of objects in the box on the right.

	0
○	1
○○	
○○○	
○○○○	
○○○○○	
○○○○○○	
○○○○○○○	
○○○○○○○○	
○○○○○○○○○	
○○○○○○○○○○	

## THE APPLICATION LESSON

### Nature and Value

An application lesson often follows a development lesson. It is a truism that there is no impression without a corresponding expression. The application lesson gives the child a chance to express or apply what he has learned.

After arriving at a generalization, one needs to apply it for further verification. After learning a rule in arithmetic, it has to be applied in the solution of problems. The ability to apply the rule correctly is the real test of what one has learned. How many times has it happened that as one reads the assigned lesson, one seems to know it very well; yet the next day, he can hardly explain it. It is not enough to just understand a principle. One must be able to express or to apply it.

In an application lesson, conditions are created that will lead pupils to express through action, construction, or language what they think or feel.

The application lesson is of value to the teacher and the pupils. It is easy to see if pupils have learned, based on their ability to apply what they learned. It is also easy to see what has been accomplished because results are objective. Opportunities for further practice help pupils to understand better and retain longer what they have learned. The teacher is stimulated to be creative because he has to plan different forms of expression and in so doing, the teacher's ability to direct the teaching process is tested.

## Forms

The application or expression lesson may take many forms. The ideas, facts, and principles that have been taught to children can find outlets in any of the following:

1. *Dramatization.* Dramatization is acting out a story or play. It uses language, facial expression, gesture, and action. It tells a story more vividly than does the printed page. Children love dramatization and enjoy it for its own sake although there are other educational values that can be derived from it, such as training in language expression, in physical grace and skill, and in clarification of thought through action and emotional release. Pantomimes, puppet shows, plays, pageants, and operettas are other forms of dramatic activities.
2. *Storytelling.* The story, as a teaching device, is used in reading, language, history, geography, science, and other subjects. Children enjoy a story, and it can be an end in itself. After listening to a story, the children can retell it to their classmates or to other children. They can thus learn to speak in complete sentences and to talk in public. Training in correct oral expression is necessary to written expression.
3. *Oral reading.* While silent reading is thought getting, oral reading is thought-giving. Oral reading gives the child practice in conveying thought to others.
4. *Construction and drawing.* Construction or drawing is the physical embodiment of thought. An idea may be concretized in drawing or construction work. Aside from clarifying thought by making it concrete, construction work develops manual skill.
5. *Written compositions.* Not only is a written theme an expression of what is in a person's mind, but it also is training in grammar, correct usage, and written communication.
6. *Singing.* Children love to sing, individually and in groups. Singing gives practice in tonality, pitch, and expression. Singing also gives emotional release. It is one way of learning language.
7. *Test or examination.* The test or examination lesson is in reality a reproduction of what is supposed to have been learned by the child. Hence, it is an application lesson. However, the examination shows not only what the pupils know or do not know, but also how effective the teaching has been.
8. *Creative work.* Any creative work done by the child is a form of application. Making a kite, writing a poem or a theme, molding a piece of plastic clay are forms of creation. A class in vocational education may be given a lump of clay and told to mold it any way they like. The variety of things turned out will be a surprise and a revelation of the creative abilities of children.
9. Other forms of application work are (a) translation from one language to another, (b) solution of problems, and (c) exercises.

## Technique

Certain points should be borne in mind in order to have a good application lesson. It may go through such steps as the following:

1. *Motivation.* The application lesson, like all other lessons, needs to be motivated. Without a good motive, one cannot force expression from a child. The motive should be real and practical. For example, a child will not be motivated to tell a story or relate what happened in school without an audience. Somebody must listen to him. In construction work, a good motive may be a real use for the object that is to be made.
2. *Statement of a problem or task.* The children should have a thorough knowledge and understanding of what is to be expressed or applied. They should know what is expected of them and what they are supposed to do.
3. *Necessity of information.* In the same way that there can be no impression without expression, there can be no expression without impression. Children cannot express what they do not know. There should be a basis or background for the application. Hence, the pupils should first be given the facts, information, principles, rules, or generalizations that will be applied later on.

## Cautions

Good models should be used, but certain cautions must be borne in mind. The teacher should not set too high a standard and he should assign work within the children's ability. In this way, dishonesty and frustration will be prevented. Constructive criticism should be given so as to encourage the pupils to try their best. In order to discourage procrastination and slipshod work, the teacher should not allow tardy work.

## Characteristics of a Good Application Lesson

An application lesson is good if it has the following characteristics: (1) the pupil's work is original rather than imitative; (2) the pupils feel responsible for their work and try to apply the principles studied; (3) individual pupil effort is present; and (4) not everything assigned is recited on. For example, all the problems assigned need not be checked one by one, especially if the children found no difficulty with them.

An application lesson shown in the plan on page 68 teaches that students are expected to apply to life situations what they have learned about drugs.





**LESSON PLAN IN DRUG ADDICTION  
FOR FIRST YEAR HIGH SCHOOL**  
by Flordeliza Regala-Paredes

- I. At the end of one-hour period, students are expected to
  - A. Enumerate the news read, heard, and learned about the bad effects of drugs
  - B. Perform the actions of drug addicts under the influence of drugs
  - C. Participate in the campaign for prevention and control of drug abuse in the community
  
- II. Subject Matter: Prevention and Control of Drugs  
Ref. *Sociology: Focus on Filipino Society and Culture* by Manuel Garcia  
Materials: pictures, newspapers, books
  
- III. Procedure
  - A. Motivation  
Show a picture of a drug addict.  
Say: Look at this picture.  
Tell something about it.  
How does an addict move if he is under the influence of drugs?  
Show the class.
  - B. Lesson Proper  
Discuss the following:
    1. Drugs used by addicts
    2. Causes and effects of these drugs
    3. Ways of preventing drug addiction
  - C. Application  
List ways of preventing the spread of addiction in your community.
  
- IV. Agreement  
Prepare posters showing ways of preventing drug addiction.

## THE SUPERVISED STUDY LESSON

### Nature

The supervised study lesson is perhaps the first lesson a child should have. He should acquire it as early as possible so that he can apply it in the different subjects of the curriculum throughout the years of his schooling.

What is a supervised study lesson? It is one whose purpose is to teach children how to study a given subject effectively. The pupil studies his lessons under the guidance of the teacher who gives definite directions as to steps, methods, and goals and supervises the individual without interfering with the work of the rest. Supervised study directs the student in the use and mastery of the best techniques of efficient study.

In essence in the supervised study lesson:

1. The pupil is taught the techniques of learning.
2. The teacher acts as guide in the various study procedures.
3. This guidance takes place in the classroom.

## Need for Supervised Study

Observation shows that there is a need for supervised study lessons even in college for a number of reasons. Among these reasons are the following:

1. Many of the failures and dropouts in school are due to poor study habits. Some students just memorize facts and information without understanding them. Others waste time unnecessarily because of lack of concentration.
2. Many homes do not have proper study conditions. Overcrowding, poor lighting, noise, and too many distractions interfere with study.
3. There are improved techniques of study that need to be taught to students. An example is SQ3R (Survey, Question, Read, Recite, and Review).
4. Weak students especially need supervised study.

## Forms of Supervised Study Lessons

Supervised study lessons can be classified into

1. *Individual supervised study.* A child is supposed to graduate to unsupervised study when he has learned the techniques of study.
2. *Group study.* The group is first supervised by the teacher. Later on, when pupils have learned to study, they can study individually.

Unsupervised study may be by groups as well as by individuals. When children study in groups, care should be taken that (a) they do not waste time and (b) the composition of the group is right. It is not good if the bright pupils do all the work or if the slow pupils always tag behind.

3. *Study with books, people, or things.* Study has always been associated with book learning, but study can also be done where people, instead of books, serve as consultants or resource persons. There is also the study where information is gotten directly from things, such as flowers, rocks, plants, or textiles.

Another classification of supervised study includes the following:

1. *The double-period plan.* In subjects having double periods like vocational education and laboratory courses, one period is devoted to the recitation and the other period to supervised study of the next day's lesson.
2. *The divided period plan.* The period is divided into two halves—the first half for recitation and the other half for supervised study. Usually, the period is sixty minutes, but it will do for a period of any length. The objection is the arbitrary dividing of the period and stopping the recitation at an illogical phase.

3. *The daily-extra-period plan.* Supervised study is done at the end of the day by the addition of an extra period. The bright pupils may be exempted, or they may be allowed to leave as soon as they show that they have finished their work.
4. *The library-study plan.* This has two phases. The first is a semilibrary study-hall situation. All students from all classes study here and use reference materials. The defect is that one teacher cannot give assistance to so many students and one teacher cannot be an expert in all areas. The second phase is departmental study where students get assistance by departments. A student who is weak in science may go to the science department and get help there.
5. *The flexible divided period.* This is the same as the divided period plan except that the time division is more flexible. If the pupils can finish the recitation in fifteen minutes, then the rest of the period may be devoted to advance preparation under the teacher's guidance. On the other hand, the recitation may be so interesting that the study time may be correspondingly reduced.
6. *The flexible supervised-study plan.* The above plans do not lend themselves to present-day methods like the unit with its long unit assignment of several days. The supervised study is an important part of the unit method and may cover several days, depending on the unit. This plan can also be applied in the traditional school organization.

A more modern classification of the supervised study consists of the following:

1. *The study period.* This may take place in a regular classroom, a special study room, or in the library, under the supervision of a teacher. The teacher should see to it that pupils start work right away, and that they do not do any visiting or chatting; he should be ready to give assistance when asked.
2. *Programmed instruction.* This is a method of independent study introduced recently. It makes use of programmed textbooks and teaching machines. It is supposed to lighten the drudgery of teaching by making automatic most of the traditional work of the teacher.
3. *Science laboratories.* Laboratory work is always supervised. There is no place in today's schools for the teacher who reads newspapers or who gads about while his pupils are working in the laboratory.

### Techniques of Supervised Study

The success of the supervised study depends a great deal upon the teacher who will train and guide the pupils on how to study. It is well to remember a few important points.

The physical setting should be conducive to study. Distractions should be removed. All necessary tools and equipment for study should be available, such as books, paper, dictionary, maps, etc. The assignment should be made

clear and the purpose of the study understood. This furnishes the incentive, without which the pupils may not work as hard.

Teacher and class must begin right away. There are many temptations to postpone work and waste precious time. The sooner the work is begun, the sooner will concentration come. The class may begin with problems or questions in mind.

The teacher should instruct the class to skim and get a general idea of the lesson. Then the class should be told to note the important topics and separate these from the minor ones. Making an outline can help.

Pupils may be instructed to pause now and then at the end of a paragraph, page, or section and to summarize in their minds what they have read or done. There should be a general summary at the end of the study period.

The teacher should avoid giving too much assistance but should always be available when needed. Skillful questioning instead of direct help will guide pupils to self-activity.

These general study guides presuppose that the pupils know the mechanics of reading. If they do not, they need directed study on how to read, but this would require different specific techniques. It is always better for the child to learn how to study as soon as possible because it is quite difficult to break up old habits. Training on how to study should begin as soon as the child enters school.

The following lesson plan is an example of a supervised study lesson. It is understood that the teacher goes around and supervises the children while they work.

### **LESSON PLAN IN ART EDUCATION FOR GRADE TWO**

by Flordeliza Regala-Paredes

Art activities of any form make the children more aware of colors. Free expression among the very young is not bound by convention or tradition. Their daring spontaneity in the use of colors is refreshing and should be preserved (Payawal 1969). Melting crayons is art activity that has wide potentialities in encouraging the youth to express their ideas.

**I. After the lesson in science about the harmful and useful effects of fire, the pupils are expected to**

- A. Discuss the different firefighting equipment that are used by firemen
- B. Point out the abstract designs made out of melted wax crayon shapes of firefighting equipment
- C. Show appreciation for the noble mission of firemen

**II. Art Activity: Crayon Blowing and Flowing, Art Guide, p. 94.**

Materials: match, candle, crayon shavings, bond paper  
Ref: *Art Activities for Children* by Payawal and Lacanaria

### III. Procedure

- A. Preparation of all art materials
- B. Motivation
  - 1. What did we learn about fire?
  - 2. How can we help prevent fire?
  - 3. What are the firefighting equipment of firemen?
- C. Reading of procedures to be followed while working with lighted candles
- D. Art activity: Follow the procedures printed on the chart on how to melt crayons for blowing-and-flowing art activities. (*Note:* The class may listen music while working to make the work more enjoyable.)

### IV. Evaluation

How did you work?

How did you prevent fire accidents while working?

### V. Agreement

Prepare the bulletin board for fire prevention month celebration. Display all finished artworks.

## THE APPRECIATION LESSON

### Need

Every day we read in newspapers rampant robberies, killings, kidnappings, and other forms of serious crimes. These show a morally degenerating society. Lack of respect for law and order and lack of consideration for the rights of others reflect a serious flaw in the educational system. While pupils can glibly recite the dangers of exposed garbage, they do nothing about the piles of rubbish and garbage in front of their houses. They even add to them. They may know the rules of health and sanitation, yet they fail to apply them.

Perhaps knowledge as an outcome of education has been emphasized too much, while development of proper attitudes and appreciation has been neglected. It is a person's attitudes and appreciations rather than his knowledge or skills that motivate his adjustment to his world. A person may know that smoking is harmful and yet unable to refrain from it. He must be made to hate smoking so that he will not smoke. It is not enough to be aware of the dangers of drug addiction. One must be made to fear it so that he will avoid it like a plague. The training of character is just as necessary, if not even more so, than training in a skill. Character is formed not only during purposeful activities but also during leisure-time activities. The development of proper mind sets, attitudes, and ideals in young people is important as these emotional dynamics will be the motivating forces in their lives.

## Nature and Sources

Attitudes and appreciations cannot be taught in the same way that one teaches scientific facts or gives training in a skill. Love for truth and appreciation of the wonders of nature may be concomitant outcomes of a lesson in science. This third outcome of education must not be relegated to the realms of incidental teaching or thought of as a by-product of teaching. For proper emphasis, this should be the primary outcome of lessons planned to develop right attitudes, appreciations, mental sets, and ideals. Appreciation lessons aim to do just this, for emotions are caught not taught.

What is an appreciation lesson? An *appreciation lesson* is one that is designed to lead the class to understand and enjoy something. One cannot fully appreciate what one does not understand or enjoy. Appreciation then is a combination of understanding and enjoyment, or *intelligent enjoyment* of something. A child who understands and finds arithmetic easy may actually enjoy it, and hence, appreciate it.

However, it is also possible to learn to enjoy something that is not for one's good, like drinking alcoholic beverages. Even vice may be appreciated, as for example, gambling. One may learn the rules of mah-jongg and play it. He may come to enjoy it and successive playing may make it a habit. He may so appreciate the game that not only are other forms of recreation given up, but other duties and obligations may also be neglected.

An appreciation lesson should be a lesson in values, and since education means change for the better, a good appreciation lesson should help pupils weigh values and help them make proper choices.

It is the task of the teacher, therefore, to plan lessons that will guide children to appreciate what is beautiful and worthwhile in literature, music, nature, the arts, religion, culture, and the things around them. The curriculum offers many opportunities for the development of proper attitudes and appreciations.

The sources of appreciation lessons are

1. *Literature.* Textbooks in the elementary and high school contain many beautiful poems and stories that provide worthy models of ideals and good living. The teacher's work is to make the pupils understand and enjoy what they read. People tend to pattern their lives after what they appreciate. If left to themselves, children may not rise above the level of comic books, questionable magazines, dime novels, and "wild West" movies. Nothing can equal literature in the influence it may wield over people's lives.
2. *Music.* A sense of rhythm is innate in people and usually, they appreciate what they become accustomed to. Children can learn to love classical music as well as jazz. The teacher should train the pupils to enjoy listening to others by playing good taped or recorded music, encouraging them to attend concerts, and directing them to listen to selected TV or radio broadcasts. The teacher with a beautiful voice may sing to the class. The class should also be given opportunities to sing worthwhile songs. Later on, they will enjoy singing by

- themselves. Sometimes, too much emphasis on the theoretical side of music kills this interest and enjoyment in singing.
3. *Nature.* Nature abounds in beauty but sometimes people go through life with unseeing eyes. The fragrance and color of flowers, the song of birds, the babbling of a brook, the splendor of a sunset, the majesty of a towering mountain, a star-studded sky—are these not beautiful? All the teacher needs to do is to encourage children to listen and to look around which means observing, investigating, recording, reporting, and appreciating.
  4. *The arts.* Visits to museums and exhibits will give children an acquaintance with the arts. They may learn about rhythm, proportion, and symmetry when they visit some buildings and churches. Later they may apply what they have learned in their own homes and even take up sculpture and painting.
  5. *Religion.* The life of Christ contains many beautiful incidents that are inspiring and worthwhile. Some practices of the Christian faith, although followed, are not fully understood. Children must be made to understand before they can appreciate.
  6. *Culture.* The mores or folkways of a society have much to do with ways of doing things, mode of thinking, system of values, and conduct. Some are outmoded and should be eliminated. Others are worth preserving. The school should reexamine the relationship between mores and behavior and develop appreciation for those that should be preserved.
  7. *The environment.* Many things in the environment that are taken for granted really deserve to be appreciated. The location of a school—far from the noise of traffic and blaring radios—may be worthy of appreciation. The presence of a big campus with old shady trees under which one can relax is something to enjoy.

## Purposes

What are the purposes of appreciation lessons? The fundamental purpose is intelligent enjoyment of what is worthwhile. This involves developing right attitudes, ideals, and standards as well as inspiring pupils with the right feelings, socially and ethically. It also means training pupils to enjoy what is worthwhile in literature, music, nature, the arts, etc., and providing them with ways of spending leisure hours in a wholesome and profitable manner.

There are other purposes of appreciation lessons. Appreciation of art, music, and literature will not be developed to a great extent unless direct provision is made in the nature of enjoyable experiences suited to the child's level. There is a direct relation between appreciation and the formation of attitudes and behavior. For example, an appreciation of music may develop the attitude of favoring the inclusion of music in all types of curricula. Also, values influence character and conduct. Values may be taught through enjoyable activities which the appreciation lesson should plan for. The activity of most values becomes an interest and later, this may become a hobby.

## Types of Appreciation

There is something worthy of appreciation in every subject, although some subjects lend themselves more to appreciation. Some authors classify appreciation into four types: the intellectual, the aesthetic, the moral, and the religious. Others have a twofold classification: technical or intellectual and aesthetic. The majority follow the twofold classification.

*Aesthetic appreciation* is derived from situations that are artistic and inspiring, as may be found in such subjects as music, nature, art, literature, and drama. Enjoyment that comes from experiencing something beautiful; for example, rhythm and grace in a dance, harmony of color and design in painting, blending of tempo and sound in music give aesthetic appreciation. Subject matter that emphasizes refined tastes, high ideals, and love of the beautiful provides a basis for developing this kind of appreciation. Feeling is a predominant aspect of aesthetic appreciation.

*Ethical-social appreciation* comes from satisfaction in recognizing social or moral qualities of goodness and truth in a situation. This type of appreciation is necessary to develop ethical character and good citizenship. Stories stressing human relationships, patriotism, and sacrifice furnish materials for developing ethical-social relationships.

*Technical or intellectual appreciation* stems from admiration of the technique, skill in performance, or the mind that produces a creation. One may admire the technique of a pianist, the leaps and pirouettes of a ballet dancer, the deft hands of a surgeon, or the mind that produces a literary masterpiece or makes a scientific discovery.

## Procedure

There is no single road to enjoyment and therefore no hard-and-fast rule for arousing appreciation. The beginning teacher, however, who may be at a loss as to how to go about it, would welcome some kind of guide. The following procedure for an appreciation lesson in literature may also be applied to other subjects like music and art.

### I. Preliminary stages

Both teacher and class get into a state of readiness. The apperceptive basis is as important in an appreciation lesson as in other types of lesson. The apperceptive basis may be established days before the actual appreciation lesson is taken up. It consists of the negative and positive preparations. If metaphor or biblical allusions that the pupils are not familiar with are used in the poem, this is the time to explain these.

The teacher must exercise judgment in deciding whether the positive preparation step should be a day before or several days before the actual appreciation lesson.

### II. The lesson proper

A. *Immediate preparation.* If the negative and positive preparations have been thorough, all that the teacher needs to do here is to get into the right mood and to put the pupils in the right frame of mind too. A statement of the lesson's aim or a motive question can do this.



- B. *The hour of appreciation.* The first impression is very important. The teacher (not the pupils) should read or recite the poem (or selection) with proper expression and feeling. This implies that the pupils are hearing the poem for the first time.
- C. *Intellectual discussion* (understanding or knowledge). The second presentation should be followed by a checkup of comprehension. Sometimes teachers put the intellectual discussion before the aesthetic, which should not be done in an appreciation lesson. Teachers should not analyze too much or go into too much detail, or appreciation may be lost. After the intellectual discussion, the pupils may read the poem again.
- D. *Aesthetic discussion.* The teacher should encourage the pupils to tell what they consider beautiful in the poem. They may discuss how and why certain points or passages are beautiful. The teacher may read the poem a second time. After a discussion of how and why the selection is beautiful, the children should enjoy the second reading more.
- E. *Reproduction* (memorization in the olden days). Reproduction is the final step in an appreciation lesson. If it was well taught, the class will have the enthusiasm and desire to memorize the poem. If the poem is too long, perhaps the class may be allowed to memorize the stanzas that contain gems or they may be allowed to choose. A story that is appreciated may be reproduced in play or story form.

### Suggestions for Developing Appreciation

Some find it more difficult to teach appreciation lessons than other types of lessons. The following suggestions will facilitate the development of mental sets, attitudes, and ideals:

1. Choose materials and activities that children are interested in and which they can enjoy. Examples of such activities are free reading, group singing, dramatization, watching television, listening to the radio or to phonograph records, etc.
2. Since appreciation is an outgrowth of experience, the learner must participate in the activities and derive emotional satisfaction from them.
3. Appreciation activities should be informal. Regimentation may kill appreciation. So will overanalysis.
4. Make use of memorization. Beautiful passages may be committed to memory. Rhyme and rhythm are important. Have pupils repeat verses, selections, and musical passages. Repetition brings familiarity and familiarity brings enjoyment.
5. Provide follow-up activities that will deepen the pleasurable response of the first impression. In the case of a poem, follow-up activities may consist of drawing a picture to illustrate the poem, finding and reading other poems by the same poet, finding and reading other poems on the same theme by other authors, and composing a poem. Follow-up activities in music may be listening to

the same piece from a record, composing a song to fit the tune, learning to play the piece on a musical instrument, etc. With respect to a prose selection, the follow-up activities may be dramatizing the story, memorizing some parts of the selection, reading other pieces by the same author, and looking up other selections on the same topic but by different authors, etc.

## Conditions for an Effective Appreciation Lesson

What will contribute to the success of an appreciation lesson? The following conditions must be present:

1. knowledge on the part of the teacher of what is to be appreciated
2. appreciation of the piece by the teacher himself
3. stimulation of the children to appreciate the piece
4. encouragement of the children to discuss the parts worth appreciating without the teacher dictating or requiring it

## Outcomes

It is difficult to measure the results of appreciation lessons. While it is easy to measure learning outcomes, no one can definitely tell how another person feels. Nevertheless, there are certain observable outcomes of lessons in appreciation. Interests and hobbies are developed which provide wholesome recreational activities. The enjoyment that is experienced contributes to mental health and sanity. Tastes are refined, sentiments and ideals developed. Appreciation lessons contribute, therefore, to the formation of ethical character and good citizenship. Because of the close relationship between ideals and conduct, appreciation influences behavior.

Here is an appreciation lesson for the elementary grades.

### **A LESSON PLAN IN TEACHING A POEM FOR GRADE 6**

by Rosa V. Antonio

Master Teacher I

Magsaysay Elementary School

Lupon, Davao Oriental

#### **I. Objectives**

At the end of the lesson, the pupils will be able to

- A. Tell what a narrative poem is
- B. Read with correct pronunciation
- C. Discuss the meaning of the poem by stanza
- D. Identify the rhyming words
- E. Identify the contracted words
- F. Give the lesson derived from the poem

## II. Subject Matter

"The Spider and the Fly" by Mary Howitt, *Modern Teacher*, December 1987, p. 265

## III. Procedure

### A. Preparation

Teacher prepares all the necessary materials needed for the lesson.

#### 1. Introduction

The teacher shows the pictures of the spider and the fly. The spider is usually found in the grasses, trees, ceilings of houses, while the fly can be found in dirty places and also in houses.

#### 2. Motivation

Have you tried touching a spider?

What did you notice in your hand after touching one?

#### 3. Vocabulary development

parlour	cunning	sly	flitting
curious	witty	silly	dismal
weary	den	evil	dragged
gauzy	flattering	crest	counselor

a. The teacher reads first the words and lets the pupils follow after.

b. The teacher unlocks the vocabulary through context clues.

- (1) A *counselor* helps persons who have problems.
- (2) Politicians often use *flattering* words.
- (3) Love of money is the root of *evil*.
- (4) The *den* is a cavern or a hollow. The *den* is where the fox makes its home.
- (5) Knights usually had *crests* on their helmets.
- (6) *Weary* persons need recreation.
- (7) Children are *curious* to see new things.
- (8) The fly is fond of *flitting*.
- (9) The *silly* fly was caught by the spider.
- (10) The fly has *gauzy* wings.
- (11) The fly was *dragged* by the spider.
- (12) You cannot see the sun during *dismal* weather.
- (13) A *parlour* should be clean and airy so that visitors will feel at ease.

### B. Presentation

#### 1. First reading of the poem by the teacher

The teacher's ability to read well should be emphasized so that the pupils can get the significance of the poem.

2. Discussion of the poem by the class
  - a. The teacher asks the pupils to describe what they can picture in every stanza as they go on reading the poem.
  - b. The meaning of the poem is discussed; the difficult phrases or expressions are explained.
  - c. The rhyming words in the poem are underlined.
3. Second reading of the poem

The second reading of the poem is done also by the teacher; however, if there is a bright pupil in the class who reads well, he may do the second reading and should be better than the first. This is called the new whole which gives a better understanding and clearer comprehension of the poem.

Each member of the class should be given the chance to read if possible, but care should be taken so as not to make the lesson monotonous.

#### IV. Evaluation

1. Who came near the spider web one day?
  - a. fly
  - b. mosquito
  - c. bird
  - d. rat
2. Did the spider greet her?
  - a. yes
  - b. no
  - c. all of these
  - d. none of these
3. How did the spider describe the way to his parlour?
  - a. It's up a winding stair.
  - b. It's a long way.
  - c. It's a rugged way.
  - d. It's a beautiful way.
4. Did the other creature accept the spider's invitation? Why?
5. Why was the fly caught by the spider?
  - a. The fly gave heed to the flattering words of the spider.
  - b. The fly was innocent.
  - c. The fly likes to visit the spider.
  - d. The fly likes to make friends with the spider.
6. The author gives warning to little children
  - a. to listen to flattering words
  - b. never to give heed to the flattering words of an evil counselor
  - c. to get the things of others
  - d. to disobey their parents
7. "The Spider and the Fly" is a narrative poem because
  - a. it's a song
  - b. it tells a story
  - c. it's a game
  - d. it gives a lesson
8. What stanza in the poem gives the lesson?
  - a. first
  - b. second
  - c. fifth
  - d. last stanza

9. Write the contraction of the following words:

- |            |           |
|------------|-----------|
| a. you are | d. I am   |
| b. I have  | e. I will |
| c. never   |           |

**V. Agreement**

1. Select any stanza in the poem you like to memorize.
2. List the rhyming words in the poem.

**THE SPIDER AND THE FLY**

by Mary Howitt

"Will you walk into my parlour?" said the spider to the fly.  
"Tis the prettiest little parlour that ever you did spy.  
The way into my parlour is up a winding stair.  
And I've many curious things to show when you are."  
"Oh, no, no," said the little fly, "to ask me is in vain.  
For who goes your winding stair can ne'er come down again."

"I'm sure you must be weary, dear, with soaring up so high:  
Will you rest upon my little bed?" said the spider to the fly.  
"There are pretty curtains drawn around; the sheets are fine and  
thin  
And if you like to rest a while, I'll snugly tuck you in!"  
"Oh, no, no," said the little fly, "kind sir, that cannot be:  
I've heard what's in your pantry, and I do not wish to see!"

"Sweet creature!" said the spider, "You're witty and you're wise,  
How handsome are your gauzy wings; how brilliant are your eyes,  
I've a little looking glass upon my parlour shelf.  
If you'll step in one moment, dear, you shall behold yourself."  
"I thank you, gentle sir," she said, "for what you're pleased to say  
And bidding you good morning now, I'll call another day."  
The spider turned him around about, and went into his den  
For well he knew the silly fly would soon come back again;  
So he wove a subtle web, in a little corner sly.  
And set his table ready, to dine upon the fly.

Then he came out to his door again, and merrily did sing:  
"Come hither, pretty fly, with the pearl and silver wing;  
Your robes are green purple, there's crest upon your head;  
Your eyes are like the diamond bright, but mine are dull as lead!"

Alas, alas! how very soon this silly little fly.  
 Hearing his wily, flattering words came slowly flitting by;  
 With buzzing wings she hung aloft, then nearer and nearer drew,  
 Thinking only of her brilliant eyes, and green and purple hue—  
 Thinking only of her crested head—poor, foolish thing! At last.

And now dear little children who may the story read,  
 To idle, silly, flattering words, I pray you ne'er give heed;  
 Unto an evil counselor, close heart and ear and eye,  
 And take a lesson from this tale of the spider and the fly.

## **SUMMARY**

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Lessons may be classified not only on the basis of procedure but also on the basis of objectives. Based on objectives, there are different types of lessons, such as (1) development lesson which may be formal or informal, (2) review lesson, (3) drill lesson, (4) application lesson and its various forms, (5) supervised study lesson, and (6) appreciation lesson. The following points are discussed in connection with each lesson: (1) nature, (2) objectives, (3) steps, (4) outcomes, (5) techniques, and (6) conditions to success. Sample lesson plans are included in the chapter.

## **STUDY GUIDE**

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1. What is a development lesson? What method may be used for the formal type? the informal type?
2. Why do we review? What types of review are there?
3. How does the drill differ from the review lesson? What principles should be followed in drill work?
4. Give the forms of application lessons. What characterizes a good application lesson?
5. Why is it necessary to have supervised study lessons? How can the supervised study lesson be made successful?
6. Why is there a need for appreciation lessons? Where can materials for appreciation lessons be taken?

**OBJECTIVES**

1. To enumerate the time-tested methods
2. To differentiate the inductive from the deductive procedure
3. To explain the difference between problem and project
4. To show the interrelation of the following:
  - a. laboratory and experimental method and demonstration
  - b. induction and type study
  - c. expository and telling method and the lecture
  - d. the Morrisonian technique (unit method) and the mastery formula

The concept of method is probably as old as education itself. Methods go as far back as antiquity. These include the Socratic method, Abelard's scholastic method, Comenius' nature teaching, Pestozzi's object teaching, the Herbartian steps, and others that by themselves would constitute a book. Only those that have stood the test of time and are still used today will be discussed here. Sample lesson plans of the methods to be discussed will also be presented in the chapter.



*The child, as he learns to evaluate how others solve their problems, improves his ability to solve his own problems.*

## THE INDUCTIVE METHOD

### Nature

The inductive method is in reality a discovery method. Through the inductive procedure, one may arrive at a fact, principle, truth, or generalization. Many instances or cases are studied, observed, and compared and the common elements in them discovered and generalized. A lesson that utilizes the inductive method usually calls attention to distinct but related details that lead to the formation of a conclusion, a definition, a rule, a principle, or a formula. The inductive method aims

1. To help pupils discover important rules or truths for themselves through careful observation of enough specific examples that will support the generalization
2. To make meanings, explanations, and relationships of ideas clear to pupils
3. To enable pupils to carry on investigations by themselves, independent of the teacher

### Values

The greatest value of the inductive method lies in the fact that the child learns chiefly through his own activity. He observes the cases, compares them, analyzes them, and then draws his own conclusion. Whatever he learns through induction is more permanently retained because it utilizes repetition and many examples are taken up.

The inductive method is used in mathematics, language, and the laboratory subjects, either as the main method or as a subsidiary method. However, since it is time consuming, it should be used in lessons where the generalizations to be arrived at are important but simple enough to be framed by the pupils. It would be a waste of time to use the inductive method where the telling or demonstration method would do as well. For instance, showing many cases involving liquids of different densities just to illustrate the principle of osmosis would waste precious hours. Likewise, many health facts can just be told instead of taught inductively. If the rule or generalization is too long or too difficult for the pupils to state, then it would be useless to use the inductive method since the aim is defeated.

### When to Use It

The inductive method should, therefore, be used when (1) the rule, concept, truth, principle, fact, or generalization is important enough to justify the time devoted to the lesson and (2) the pupils can state the rule, fact, principle, truth, or generalization by themselves. This means that they have the ability to do so, and the lesson is adapted to their mental level.

### Procedure

The steps in the inductive method are (1) preparation, (2) presentation, (3) comparison and abstraction, (4) generalization, and (5) application.



*Preparation.* This step involves the (a) apperception, (b) motivation, and (c) statement of the aim. The apperceptive basis may be a review of old facts or lessons that can be utilized as background for the new, or it may recall information that can establish the proper mind-set before the new lesson is introduced. The motivation sets the goal to be achieved and gives direction to the activities to be accomplished. It is also the motivation that arouses interests. The statement of the aim, which may be in the form of a problem, simply makes the goal clear to the class.

*Presentation.* Specific cases or instances are presented to the class. There should be enough cases from which to draw a generalization. It is better to have too many cases rather than too few. Otherwise students may get into the habit of drawing conclusions from very few instances.

*Comparison and abstraction.* In this step, the common element among the specific cases is deduced. Each case should be evaluated thoroughly. Teachers sometimes hurry through this part, thinking that the children's minds are as mature as theirs and have already perceived the common element.

*Generalization.* The common fact deduced from the specific instances is stated as a generalization, a rule, a definition, principle, or formula. The children's ability to state the rule in their own words is the test of the success of the lesson. The success of the inductive method depends on the clear organization of the lesson, and for this, the teacher is responsible.



*Application.* This step tests the child's understanding of the rule or generalization just developed. If he understood it, he should be able to apply it to other problems or exercises.

The advantages of using the inductive method are (1) whatever is learned through induction is learned thoroughly and retained longer; (2) pupils are provided with means of solving concrete problems later; (3) pupils are trained to think logically and scientifically; and (4) pupils go through a method of work that is psychologically right.

The disadvantages of the inductive method are as follows: (1) it is not suited to all subject matters, as not all of what is taught has logical value. Some may have value but of temporary duration only. Others may have aesthetic rather than logical value; (2) many teachers cannot master the technique because it requires much clear thinking; (3) it is sometimes too lengthy and thus tires the undisciplined; and (4) it tends to make the lesson too formal, which is undesirable.

Conditions necessary to effective induction are (1) there must be a problem that can be solved by a study of many specific cases; (2) the fact to be

generalized must be pointed at in each case and separated from other facts; (3) there must be enough cases to make the conclusion valid; and (4) the generalization or rule must be carefully worded.

An example of a lesson showing the inductive method follows:

## LESSON PLAN IN MATHEMATICS

Grade 2

Carmelita C. Pagcaliwagan  
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### I. Objectives

At the end of a forty-minute period, the pupils should be able to

- A. Identify the 11th through 15th elements of a given set
- B. Read and write ordinal numbers indicating position beyond the tenth

### II. Subject Matter

Ordinal Numbers 11th through 15th

MLC — 1-A, 3.3.1-3.3

*TE Math 2*, Lesson 14, pp. 25-26

*New Elem. Math Workbook 2*, pp. 12-13

Objects/pictures or cutouts/illustrations

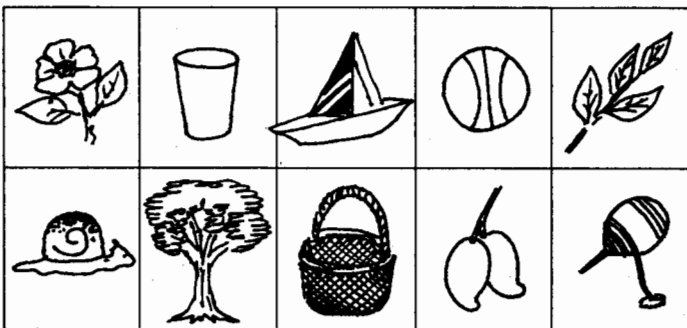
### III. Procedure

#### A. Drill

Rote counting of ordinal numbers 1st to 10th

#### B. Review

1. Have the pupils look at the following illustrations.



2. Identify and count the pictures in line. Then, ask the class for the position of the flower, glass, snail, mango, etc.
3. Write on the board the ordinal numbers both in words and in numbers.

### C. Lesson

#### 1. Motivation/Presentation

- a. Have 15 children with number tags arrange themselves in chronological order. Each one holds a fruit, a flower, a balloon, a top, an umbrella, a notebook, a ball, etc.
- b. Have them count off.

#### 2. Exploration and Comparison

- a. Have the pupils identify who holds a ball, a toy boat, a cup, a candy, a flower, a basket, etc., up to the tenth child.
- b. Introduce the next ordinal numbers.
 

11 — 11th	(Guide the class to see the pattern
12 — 12th	of adding <i>th</i> to the number name
13 — 13th	and number symbol with counting
14 — 14th	numbers to form each correspond-
15 — 15th	ing ordinal number.)

#### 3. Generalization

Have the pupils read the relation of the counting numbers and each corresponding ordinal numbers in the above activity.

#### 4. Fixing Skills

Present pictures of 15 objects. Have each pupil tell which object is the 11th, 12th, 13th, 14th, and 15th.

#### 5. Application

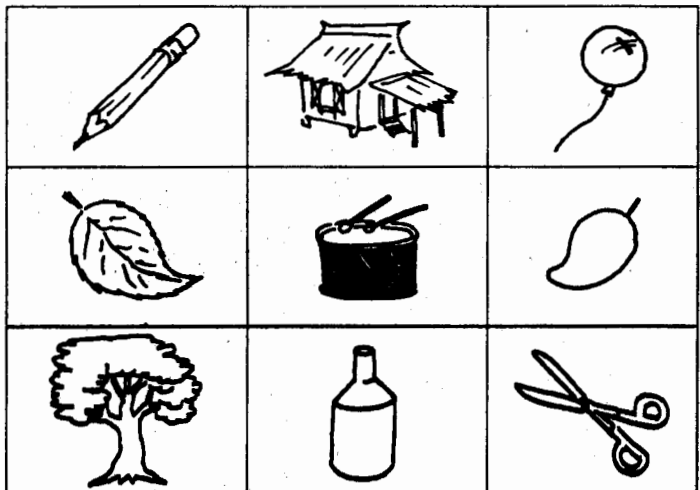
On the table are toys/objects arranged in line.

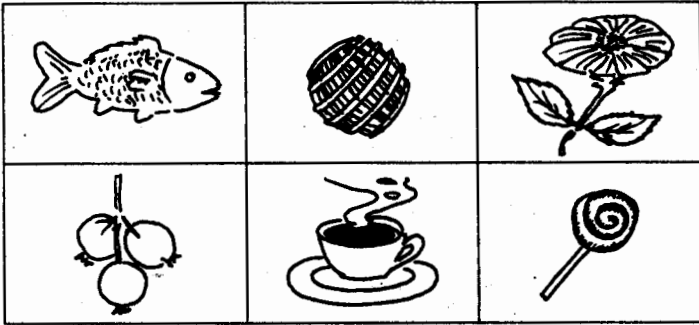
Say: Will someone pick up the 13th object? 15th object? 11th object?, etc.

Have the pupils state the placement of the objects.

#### 6. Evaluation

Answer the following:





- a. Draw the
  - (1) 14th object
  - (2) 11th object
  - (3) 15th object
- b. Select the best answer.
  - (4) 12th can be written as (twelve, twelfth, twelfth).
  - (5) Thirteenth is the same as (12th, 13th, 15th).

#### IV. Assignment

Answer in your notebook exercise 11, nos. 1 and 2, p. 13, *NEM Workbook 2*.

## THE DEDUCTIVE METHOD

### Nature

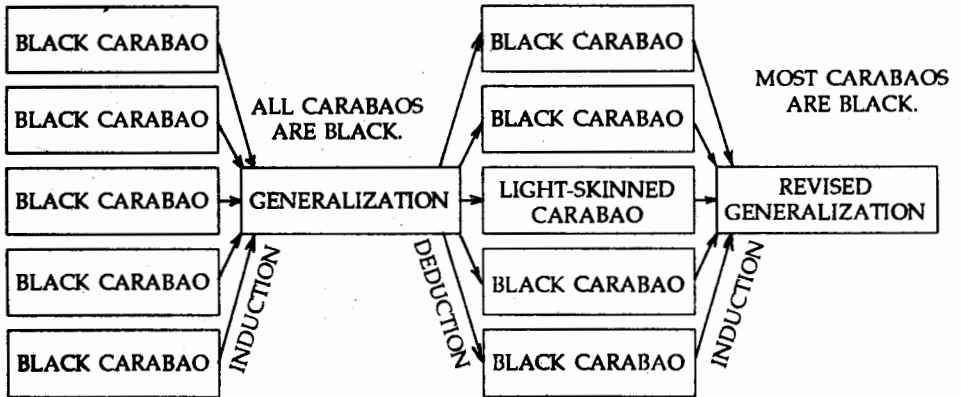
The deductive method is the reverse of the inductive procedure. Where induction starts with a study of specific cases and ends with a generalization or rule, deduction starts with a generalization that is applied to specific cases. Deduction is a process of reasoning from the general to the particular. The deductive procedure starts with a rule that is applied to specific cases for the purpose of testing the rule, illustrating or further developing it, or solving the problem to which it applies.

The organization of subject matter begins with a law, rule, definition, formula, or concept. Then individual cases are studied. The cases are examined to verify the generalization. If the generalization or rule holds, then one can conclude that it is valid. For mastery of the formula or rule, further application to cases may be made until the rule is memorized.

In short, deduction is a process of solving a problem or overcoming a difficulty by applying to the problem or difficulty a generalization already formed.

### Relation of Induction to Deduction

It is hard to separate deduction from induction. The inductive method usually goes on to the deductive, as shown in the following diagram.



An example of how the child’s mind goes from inductive to deductive reasoning and back to inductive may be illustrated in this way. A boy sees farmers plowing a field. He notices that all the farmers’ carabaos are black. He makes the statement, “All carabaos are black.” He goes to town and sees that carabaos pulling carts are black. His observations hold true. He goes to a mudhole where several carabaos are wallowing. When the carabaos come out, he sees one that is light skinned. He revises his observation and says, “Most carabaos are black.”

The boy’s thinking has gone through the following steps:

Induction:

1. Observation
2. Comparison of cases and notation of common fact
3. Statement of common fact as a generalization

Deduction:

1. Beginning with generalization
2. Applying generalization to specific cases to test it
3. Revision of generalization on basis of test

Induction and deduction are just different ways of organization.

### Aims

The deductive method aims at the following:

1. To teach pupils to master difficulties by utilizing truths or rules established by others
2. To teach pupils to delay judgment until truth is proven and not to judge even in the face of seeming certainty until analysis is complete
3. To remedy or overcome pupil’s tendency to jump to conclusions at once

## Types of Deduction

There are two types of deduction: the anticipatory and the explanatory. Anticipatory deduction forecasts details that will be found in a particular situation, while explanatory deduction connects facts at hand with principles that interpret them. This type is often used in the classroom when the teacher asks for the principle that explains this or that phenomenon. Most textbook teaching makes use of explanatory deduction. The principles or rules are given in the book and what remains is to explain them.

The teacher often resorts to deduction when he asks pupils to answer questions, to solve problems, or to master puzzling situations which they encounter by referring to laws, principles, axioms, or other general conclusions already in their possession.

## Steps

The steps of the deductive method are (1) statement of the problem, (2) generalization, (3) inference, and (4) verification.

*Statement of the problem.* The problem should be stimulating and should arouse a desire to solve it. As much as possible, it should be related to a life situation and should be real and vital. It should also be within the ability and maturity of the child.

*Generalization.* Two or more generalizations, rules, definitions, or principles may be recalled. One of these will be the solution to the problem.

*Inference.* This is choosing the generalization, rule, or principle that will fit the problem. Sometimes it may be through trial and error that one arrives at the right conclusion. Application to a few cases may be necessary.

*Verification.* This is trying out and securing the successful generalization. It is determining the validity of the inference by consulting accepted authorities such as the teacher, the textbook, dictionaries, encyclopedias, or other books. The emerging conclusion after verification becomes accurate knowledge.

## Conditions for Effective Deduction

For effective use of the deductive method, certain conditions are necessary, such as (1) starting with a rule or principle that will fit the conditions, (2) applying the rule or principle to enough cases to prove or develop the rule or to make the illustration clear, and (3) at the conclusion, restating the rule or principle used.

## Evaluation

The deductive method has its advantages and disadvantages. The advantages are as follows: (1) The deductive method is much simpler than the inductive method and takes less time. (2) Ordinary subject matter and principles in textbooks lend themselves well to the deductive method. (3) Already established principles are made more meaningful through deduction. (4) In the anticipatory form, a very good motive is furnished for seeking evidences that will support the inferences made, thus arousing the puzzle instinct, which is a valuable aid.

The disadvantages of the deductive method are as follows: (1) Some pupils cannot profit from deductive thinking. (2) It is criticized for encouraging guessing which, however, may be allowed within certain limits. (3) It is restricted to certain topics and is of no value in securing drill or emotional outcomes.

## THE TYPE STUDY METHOD

### Nature

Closely akin to the inductive method is the type study method. In reality the type study method is an inductive procedure except that only one case is studied. A typical case is taken for detailed examination. For example, if one were to study the parts of a river system, it is not necessary to study many river systems. Just one river would be enough, but it must be representative of other rivers and must have all the parts. The Pasig River would be typical of other rivers as it has a source, a mouth, tributary streams, and other parts. In studying the parts of a flower, one needs to study only one flower which has all the characteristics of most flowers.

### Aims

The type study method aims to study a typical case thoroughly and in detail so as to make the concepts gathered as basis for comparison in studying similar cases. It also aims to organize into a coherent whole all necessary and related details.

### Steps

In using the type study method, the following steps can be followed: (1) selection of the topic as a type to be studied, (2) apperception and motivation, (3) statement of the typical case or the model that will serve as basis for comparison, (4) study of details, (5) comparison of details with the model, and (6) generalization.

*Selection of type.* The selection of a typical case is crucial in the type study method. The case or topic must be representative of the group. It is the average rather than the exception that is needed. In studying the taxi business, it should not be the biggest taxi company nor the smallest that should be chosen. An average-sized company would be the best subject for study.

*Apperception and motivation.* A discussion of transportation would be the proper background for the study of the taxi business. A proper motivation may be to find out if the increase in taxi rates is justified.

*Statement of a typical case.* The particular taxi company to be studied may be, for example, the Golden Taxicab Company or the Yellow Taxi.

*Study of details.* The items to be studied about the company may be the following: (1) organization of the company, including the management staff, drivers, and other personnel like office boys, washers, etc.; (2) number of cars and their operation, whether in two shifts of twelve hours each or three shifts of eight hours each; (3) number of drivers and conditions of employment;

(4) salaries of management staff, drivers, and other personnel; (5) expenses, such as installment on cars, insurance, maintenance, etc.; (6) income; and (7) profits.

*Comparing details with model.* The details enumerated above may be studied with reference to the particular company chosen for study.

*Generalization.* Based on the findings, it will be shown whether the company is making money or not. If the profit is enormous, then there is no justification for an increase in rate. One can generalize for all taxicab companies based on the results of this typical case.

## Outcomes

The type study results in rich and meaningful concepts. Many facts of less importance around the central idea are other outcomes.

## Evaluation

There are many advantages in favor of the type study method. One is its simplicity. Another is that it arouses keen interest since the tendency to emphasize details makes the work concrete. It is psychologically valid since in real life we tend to study a thing in detail. Intensive study makes the topic clear. Furthermore, it saves time.

Among its weaknesses is that it is not suited to all types of subject matter. It is of no value in subjects lacking in richness of content. Another limitation is that sometimes teachers choose poor types and so conclusions are not reliable. Its greatest disadvantage, however, is that since children generalize from one case, they may form the bad habit of forming hasty conclusions.

The following lesson plan illustrates the type study method.

**A TYPE STUDY LESSON PLAN IN**  
Elementary Science for Grade 2  
by A. S. Lardizabal

### I. Objectives

At the end of the lesson, the pupils are expected to

- A. Express an appreciation for nature
- B. Explain the relation between themselves and trees
- C. Name the parts of a tree and the functions of each part
- D. Identify the roots, trunk, branches, stem, leaves, flowers, and fruit of any tree

### II. Subject Matter: Parts of Trees

### III. Materials: Pictures, diagrams, small plants

### IV. Procedure

- A. Apperception and motivation
  1. Review the parts of the human body.



2. Link the structure of a tree to that of the human body: A tree also has arms, legs, body, etc. Today we are going to find the arms, legs, etc., of a tree.
- B. Statement of the model  
Present the model of a tree. Ask: What is this? (Hold up a small tree or a picture of one.)
- C. Study of details
1. Compare the tree with the human body: (Show the feet of the tree.) The feet of the tree are called *roots*. (Show the body of the tree.) The body of the tree is called *trunk*. (Show the arms of the tree.) The arms of a tree are called *branches*. (Show the hands of the tree.) The hands are called *leaves*.
  2. Have the parts of the tree named again.
  3. Have the parts in the diagram identified.
  4. Take up the function of each part.
- D. Comparing details with model  
Examine the structure of other trees: Here are other trees. (Show picture.) Let us see if they all have the parts of a tree that we have named here.
- E. Generalization
1. Review tree structure: Tell us again the parts of a tree.
  2. Discuss how trees help man: What would happen to the world if there were no trees? What can we do to preserve these gifts?
- V. Assignment  
Apply knowledge of structure to plants: Bring some plants. Tell what parts they have.

The following is another lesson plan on the type study.

### **A LESSON PLAN IN COMMUNICATION ARTS**

(Reading V-VI)

Type Study Lesson Plan

by Epifania N. Paloma

#### **I. Specific Objectives**

At the end of the lesson, the children are expected to

- A. Identify the different parts of a book
- B. Tell how they differ from one another

#### **II. Subject Matter: Learning the Parts of a Book**

Ref.: *Learning English Through Practice 6*, pp. 246-249

#### **III. Activities/Strategies**

- A. Visiting the school library or public library
- B. Displaying different books in the classroom

C. Examining the books: Each pupil should get a book, examine it, and look for the following parts:

1. Covers
2. Title page—This contains
  - a. title of the book
  - b. names of the authors
  - c. name and address of the publisher
3. Copyright page—This is found at the back of the title page. It tells the date when the publisher got the right to publish, sell, or print the book.
4. Preface—This shows
  - a. author's purpose in writing the book
  - b. scope of the book
  - c. the group for whom the book was written
  - d. author's acknowledgment for help received
5. Table of contents—This lists the chapters or units, the stories under each chapter, and their pages in the order they appear in the book. This part gives the contents subjects of the book.
6. List of illustrations—This includes pictures, maps, diagrams, and other materials.
7. Body of the book—This is the most important part of the book. This is the text of the book.
8. Appendix—This includes supplementary materials.
9. Glossary—This is a short dictionary of unfamiliar words used in the book.
10. Bibliography—This is a list of books used as references.
11. Index—This is an alphabetical list of names and concepts and the pages where these names and concepts are found.

D. Preparing a bibliography

Before working on the problems, prepare a list of books where you can find the materials you need. Such a list is called a *bibliography*. It must include the author's name, title of the book, name and address of the publisher, and the date of publication.

*Example:*

Salvador, Brigida, et al. *Arithmetic for Everyday Use*. Quezon City: Bustamante Press, Inc., 1964.

IV. Evaluation: Something to Do

- A. Get a book. Identify/Copy the different parts of a book. Write the information included in each part.
- B. Turn to the table of contents. Copy ten topics or stories and be ready to read them to the class.
- C. Prepare three items for a bibliography. The bibliography must be arranged alphabetically according to the author's last name.

V. Assignment

Go to the library. Examine five books. See if they have all the parts mentioned.

## THE PROBLEM METHOD

### Nature

What is a problem? The dictionary defines *problem* as any question or matter involving doubt, uncertainty, or difficulty and therefore requiring solution. An obstructed activity presents a problem. A situation in which a difficulty occurs presents a problem. The individual who meets it, however, must recognize that it needs to be solved and must feel it as a challenge. The difficulty may be either mental or physical.

Problem solving is the purposeful activity that will remove a difficulty or perplexity through a process of reasoning. Reflective thinking is utilized in problem solving; it consists of two phases: (1) statement of the perplexity or difficulty which gives rise to thinking and (2) the act of searching, or inquiring, to find the material that will solve or dispose of the perplexity. Problem solving is both a learning and a teaching procedure.

### Types of Problems

Problems may range from the simplest to the most complex. They may be practical or speculative, easy or difficult, natural or artificial, final or preliminary, empirical or scientific, real or imagined. They may be problems involving skills or information. Problems occur when one does not know what to do, when one knows what to do but not how to do it, and when one knows what to do and how to do it but lacks the proper skill to do it.

Yoakam and Simpson (1949) cite intellectual, social, manual, puzzle, or play problems, and those present in every subject. Physics and mathematics present many manual and intellectual problems. There are a number of social problems in history and geography, as for example, "Why is the development of Makati faster than that of Quezon City?" Puzzle problems which children enjoy may be given during the recreatory period. Practical problems may also arise, such as how to keep the campus clean and attractive, thus giving opportunities for collective thinking.

Problems in school may be classified as

1. *Mental*. These are problems that are contemplative, reflective, academic, reconstructive, or imaginative. Arithmetic problems fall under this category.
2. *Symbolic*. These are problems that require written language, drawing, modeling, or construction for solution.
3. *Real*. These are material, physical, or practical problems.



## Functions

The major functions of problem solving are (1) to give training in reasoning, (2) to give practical knowledge and skill, (3) to develop proper thought habits that will enable the child to meet whatever exigencies in life there are, (4) to escape the consequences of some acts, (5) to learn how to act in a new situation, (6) to learn how to make something, (7) to solve a puzzling mental problem, (8) to get out of a difficult situation, (9) to learn to suspend judgment, (10) to learn to define and limit problems, (11) to learn how to find solutions, (12) to improve judgment, (13) to verify an opinion, (14) to discover a new process, (15) to invent a new device, (16) to create a new idea, (17) to improve knowledge, (18) to entertain others, (19) to help another solve a problem, (20) to satisfy curiosity.

## Values

The problem method can have an incalculable value for children. Life is full of problems. There will always be problems. If a child knows the technique of problem solving, he will be able to tackle whatever difficulties he meets. The subject matter he studies now may be obsolete ten years hence, but he will still be able to use problem-solving techniques.

The problem method gives direction to a discussion and prevents wandering off from the topic. It stimulates reflective thinking and furnishes a guide for organizing ideas. It directs attention to the task to be done and encourages concentration.

Problem-solving skill contributes to the development of personality. The child develops independence and initiative. Since the problem is usually adapted to his level, he looks for his own solutions. He is encouraged to think for himself and thereby develops self-reliance. Success in solving problems gives him confidence.

It builds proper attitudes, among which is the scientific attitude of considering all data accurately and objectively and testing the conclusion carefully. Not only does the pupil improve his ability to solve his own problems, but he also learns to evaluate the thoughts and solutions of others.

Because the problem method is based on psychological drives, like curiosity, the child's attitude toward schoolwork is improved. The problem becomes a stimulus and its solution, the goal. The child is encouraged to work on his own ability and the teacher ceases to be a taskmaster. If the child does not feel this way and thinks of the problem as a "job," then the teacher has failed in presenting the problem.

Too often, children can recite facts but cannot apply them to situations. Experience in problem solving will provide opportunities to utilize these facts, to acquire new meanings, and to gain new insights.

## Uses of the Problem Method

The problem method may be used in two ways. A whole unit of subject matter may be presented as a problem, or problem solving may be one of the methods utilized in a unit of work. A word of caution, however: Some teachers try to look for problems in every subject so that they can present the

lesson in problem form. This will make learning too stilted and formal. Besides, a problem will be considered as such by the pupils only if it is real and worthwhile.

## Steps

The essential steps in problem solving, according to Risk (1965, 295), are the following:

1. recognition and statement of the problem, originating in a difficulty or perplexing situation
2. statement of hypothesis—inspection and proposal of solution or solutions
3. critical evaluation of suggested solution
4. verification of accepted solution

In the classroom, the procedure is much more detailed, and the teacher has to guide the pupil's learning. Pupils will probably not be able to recognize the problem without the teacher's guidance. To raise the problem, the teacher must set the stage. The teacher should assist them by directing their observation to related data and recalling past experiences that have a bearing on the problem. It will be better if the pupils were to state the problem themselves.

The next step is working on the problem. This involves organization of facts, principles, and ideas pertinent to the problem, selecting a hypothesis and trying it out, gathering data through reading, observing, etc., evaluating the solution, and forming a conclusion. Although the pupils do the work, the teacher directs it. He assists the pupils to learn procedures in (1) selecting a hypothesis, (2) gathering and organizing data or materials to be used in the solution, (3) evaluating hypothesis or data used in solving the problem, and (4) formulating conclusions or summarizing findings. Before the work begins, however, the teacher motivates the class so that they will develop favorable attitudes.

The last step is checking or verifying results and applying these, if necessary. The teacher also aids the pupils in learning how to check or verify and summarize results. Exercises or problems must be provided by the teacher for practical application of the understanding gained. If the teacher has stimulated a desire on the part of the class to use the knowledge gained, the lesson is successful.

## Relation to Other Methods

Some writers say that the systematic way of solving a problem is by inductive or deductive reasoning. Other writers speak of problem-solving methods and mention the Herbartian formal steps as one of the methods. The Herbartian formal steps, consisting of (1) preparation, (2) presentation, (3) comparison and abstraction, (4) generalization, and (5) application, really correspond to the steps of the inductive method. The modified Herbartian steps and Morrison's teaching cycle can be applied to problem solving. Although not exactly the same, the steps of the Morrison technique, (1) exploration, (2) presentation, (3) assimilation, (4) organization, and (5) recitation, have an

inductive basis. Some authors think of the problem method as a combination of a little exposition, a little deduction, and a little induction. Others think of using the problem method in combination with other methods, such as the laboratory, the inductive, the discussion, etc.

### Characteristics of a Good Problem

What the teacher thinks of as a problem may not always be one to the class. To the pupils, it may just be a task or exercise assigned by the teacher. The characteristics of a problem that can be used to teach problem-solving skill are the following:

1. A difficulty exists which demands solution. It is thought provoking.
2. The problem is clear, definite, suitable to the level of the pupils, and of practical value.
3. It is real, interesting, and worthwhile to the class.

### Evaluation

The advantages of the problem method have been discussed under Values. Some of the disadvantages and dangers may arise from (1) superficial thought, (2) overrationalization, (3) forming hasty conclusions, and (4) losing sight of the main thought. The problem method is one that the children should master.

The problem method may be used in teaching a lesson. Sometimes it may be one of the many methods used in teaching a unit.

#### **A SAMPLE TEACHING UNIT IN SOCIAL STUDIES**

Using the Inquiry Method for Grade 6

by Joseph F. Fadri, Banton, Romblon

- I. **Major Concept:** Social Organization
- II. **Main Idea:** Social behavior at variance with the general norms of society is directed and controlled.
- III. **Subideas**
  - A. Peace and order in a community is achieved only when the behavior and actuations of the people conform with the established norms of conduct.
  - B. Any social behavior which is at variance with the general norms needs to be redirected and controlled.
  - C. The family exerts a great influence in the development of desirable behavior and in the redirection and control of undesirable action.
  - D. The Church helps check misbehavior and delinquency especially among juveniles.
  - E. Civic organizations help redirect and control the behavior of the individual in a society.

- F. The barrio, town, or city government does its part in minimizing, if not eradicating, undesirable social behavior.

#### IV. Objectives

At the end of the subunit, the children are expected to

##### A. Cognitive

1. Define the following terms:  
*control, custom, tradition, law, constitution, ordinances, disciplines*
2. Explain in simple sentences the importance of control to a group
3. Explain how religious teachings, practices, and beliefs control and redirect undesirable social behavior
4. Enumerate existing traditions and customs that may serve as guidelines for social behavior
5. Discuss the functions of the school, the family, civic organizations, and the government in the processes of redirecting and controlling social misbehavior
6. Identify problems and raise questions about the topic under study

##### B. Affective

1. Share in the implementation of laws, ordinances, and disciplinary measures aimed to control and direct social behavior
2. Show willingness to obey existing social control
3. Cooperate and accept duties in group work
4. Assume good leadership and followership
5. Work harmoniously with others
6. Evaluate one's accomplishment and that of others objectively

##### C. Psychomotor

1. Acquire skills in the use of books and other resources in gathering data and information
2. Read news items and articles about social misbehavior and how they are attacked and solved
3. Learn how the Church or any sect controls its members' behavior so that it will conform with society's norms
4. Find out how the school helps in the redirection or control of social behavior which conflicts with the general norms of society
5. Know the laws, ordinances, and articles of the Philippine Constitution that regulate the social behavior of people

#### V. Materials and References

- A. Newspapers, pamphlets, and magazines
- B. Social studies workbooks in grade 6
- C. Balerosa and Del Carmen, *Philippine Community Life*
- D. Pecson and Sulit, *Building Good Citizenship*
- E. Printed matter from the Department of Justice

## VI. Teaching Strategies

### A. Opener or Initiation

News and pictures about honesty, heroism, cooperation, helpfulness, and other good character traits are displayed on the bulletin board together with those that show undesirable ones.

What awards or rewards do the best ten policemen of the year get? Why was the honest driver called to Malacañang? Why was the Boy Scout awarded a medal? There are many more questions that can be asked to lead pupils to think that good social behavior is appreciated.

After a thorough discussion about the pictures or news items depicting desirable social behavior, questioning can now shift to those pictures that tell about undesirable traits. Why was the man sentenced to die in the electric chair? What punishment was imposed on the robber? What undesirable social behavior did they commit against society?

Present another set of pictures showing the role of the family, school, civic organization, Church or religious group, and the government in controlling undesirable social behavior. What do these pictures tell? The learners may suggest titles such as "Means of Controlling Undesirable Behavior," "How Social Behavior Is Controlled," "Social Control," and others. The class may offer many suggestions but select the best.

### B. Raising the Problems

A peaceful place is one which is devoid of trouble and acts of criminality. It is a place where every citizen feels safe. But are there places which are completely peaceful and orderly? Probably none because once a place is inhabited by people who by nature differ in interests, feelings, and intellect, it naturally will experience trouble of many kinds.

Some places, however, have tried and have succeeded in minimizing the occurrences of undesirable social behavior among their inhabitants. Sweden is believed to be a peaceful nation. Do you know how that country and other places like it achieved such a condition? (The learners give several answers or ways like "Probably they redirected and controlled the undesirable behavior of their citizens.") What big problem may be raised about our subunit? The teacher leads the class in the formulation of the expected problem: How is undesirable social behavior redirected and controlled?

### C. Formulating the Hypotheses

Do you really believe that social behavior, which is against the norms of society, can be redirected and controlled? How do you think this can be done? (Children present their answers and the teacher writes them on the board.)

The following are expected to come out:

1. Some traditions and customs regulate individual social behavior.



2. Families impose discipline on their children in accordance with the norms of society.
3. The Church sets up standards of conduct and decency on her followers that are in conformity with those of society.
4. The schools provide opportunities for the development of good social behavior and for the redirection and control of misbehavior.
5. There are some civic organizations which help control undesirable behavior.
6. The government establishes agencies and legislates laws to control undesirable behavior.

Let us raise questions to guide us in providing our answers. (The hypotheses serve as bases for the formulation of these questions.) The following are expected supporting questions to be raised:

1. What are traditions and customs? How do they help in redirecting and controlling undesirable behavior? Give true-to-life situations.
2. How does the family control the behavior of its members so as to conform with that of the norms of society? What discipline does it impose?
3. How does the Church or any sect control the social behavior of its followers? What practices or regulations does it have for its believers?
4. In what ways do schools help in the redirection of social behavior that is against the standards which society sets?
5. Name some civic organizations which help control social misbehavior. What discipline does each organization impose on its members?
6. What agencies of the government help in controlling undesirable social behavior? In what ways do they control or redirect misbehavior?

#### D. Planning Ways to Solve Problems

How shall we answer the questions? Where shall we get the needed answers or information? Pupils may answer in the following manner:

1. Let's read books and magazines in the library and in our homes.
2. Let's make use of newspapers, pamphlets, and leaflets.
3. Let's ask the help of our parents and elder siblings.
4. Let's invite resource persons.
5. Let's interview people who can help us.

After the class has finished mapping out ways of gathering the needed information, the teacher guides the pupils to divide themselves into six smaller groups. Each group gets one problem to solve.

#### E. Gathering Data

The teacher presents all the source materials that are already on hand. The pupils go to the library and look for other references.

A group may invite a resource person or they may go to the resource person's house and conduct an informal interview. During recess, a group may ask the help of other teachers. These and many more ways can be resorted to by the pupils.

In gathering data, the pupils should be reminded that pictures, poems, and songs may be utilized also.

While some members are busy looking for the answers, others may be painting or collecting pictures that will be needed in the presentation of their findings.

#### F. Organizing, Summarizing, and Interpreting Information Gathered

1. Each group makes an oral report through a representative. After each report, the class may raise questions or seek clarification on some doubtful and not-so-clear statements made by those who reported. Of course the reporters have to answer them.
2. A group may present role playing to emphasize a point.
3. Pictures drawn and collected plus real documents may be presented for the class to scrutinize.
4. The class may listen to resource persons—a priest, a councilor, a parent, a club leader, or other knowledgeable persons who can shed light on the different topics being studied.
5. After all reports and presentations have been made, the class may cooperatively work out a summarized outline of all answers presented and discussed. This can be done on the chalkboard.

#### G. Testing and Judging the Hypotheses

The different answers previously given by the pupils which were mere guesses are presented again. These are compared with the data gathered. Statements or findings that prove or disprove the hypotheses are separated.

#### H. Formulating Generalizations

Through skillful questioning, the teacher leads the class to form generalizations. Here are expected generalizations:

1. Peace and order in a society can be had only when every member behaves in accordance with the general norms of the group.
2. The social behavior of an individual can be influenced and redirected through efforts of the family, school, church, civic associations, and the government.
3. Religious teachings and practices, laws and ordinances, rules and regulations, customs and traditions help in the development of worthwhile behavior and in redirecting and regulating misbehavior.
4. The home, school, church, and civic organizations greatly help the government in solving problems of peace and order.

**I. Evaluation**

**1. Attitude test**

- a. Did I do the job assigned to me willingly and correctly?
- b. Did I share materials with others?
- c. Did I consider the rights of others?
- d. Did I help set up plans and directions and follow them?
- e. Did I give in when my ideas conflicted with the rest of the members?

**2. The usual paper-and-pencil test covering the most salient facts and information studied and learned may be given.**

**LESSON PLAN ON PROBLEM SOLVING  
FOR GRADE 2**

Aurora A. Porlucas

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**I. Objectives**

Following the steps in problem solving, the pupil can

- A. Analyze word problem
- B. Write the mathematical sentence correctly
- C. Solve word problem involving addition of one- or two-digit numbers with ease and accuracy

**II. Subject Matter**

Step in Problem Solving

Reference: *Teachers Guide for Mathematics 2*, p. 28

*Living with Math 2*, p. 41

**III. Procedure**

- A. Drill: Flash cards of addition combinations
- B. Review: Identifying solution for the given situation.
- C. Presentation

Mrs. Lopez buys chicken eggs and duck eggs. She pays 34 pesos for chicken eggs and 57 pesos for the duck eggs. How much did she pay in all?

1. Problem analysis
  - a. What is asked?
  - b. What are given?
  - c. What should you do?

**2. Fixing skills**

Read the problems carefully. Answer only what is being asked.

- a. Toto has 35 centavos in his pocket. He still has 20 centavos in his schoolbag. How much money does he have in all?

- b. Lili wants an eraser and a tube of paste. Paste costs 60 centavos. An eraser costs 50 centavos. How much money does Lili need?
- c. Ronald has 34 pesos in his piggy bank. His Uncle Cris gives him 18 pesos. Ronald puts them in his piggy bank also. How much money does he have in his piggy bank?

#### IV. Evaluation

Read the problems silently. Analyze each problem well. Answer the questions correctly.

- A. Mrs. Tan got a raincoat for 90 pesos and a blouse for 100 pesos. How much did she pay for both?
  - 1. Form the mathematical sentence.
  - 2. Solve for the answer.
- B. Twenty-two pupils entered one door of a building, and twenty-five pupils entered another door. How many pupils entered the building?
  - 1. What are given?
  - 2. Solve for the answer.

## THE PROJECT METHOD

### Nature

There has been much confusion regarding the meaning of *project*. Some authors regard the project from a philosophical point of view as a way of life, not with how it is to be attained. The emphasis is therefore on wholehearted purposeful activity that is self-directing and self-propelling. Under this concept, anything wholeheartedly purposeful becomes a project. The other school of thought looks upon project as more of a method than as a way of life. It is this concept, traced to C. R. Richards, head of the Department of Manual Training at Teachers College, Columbia University, who first used the term in 1911, that seems to be more popular today. This concept of project is that it is a problematic activity, carried on in a natural setting and involving the use of concrete materials, particularly in a constructive way. Most educational writers have agreed on the following definitions of the term:

The project is a significant, practical unit of activity of a problematic nature, planned and carried to completion by the student in a natural manner and involving the use of physical materials to complete the unit of experience.

As a learning activity, the project has the following characteristics: (1) it is problematic in nature; (2) the activity should work toward a definite attainable goal; (3) the activity should be purposeful, natural, lifelike, and significant; and (4) the pupil should plan, direct, and execute the activities.

### Relation of Project to Problem

There seems to be an overlap in the understanding of what a project and a problem are. A problem and a project may have the same steps except at the

very end. A problem may be considered ended after the mental solution is reached. Thought may be all that is needed to solve a problem. The project needs to go further and have the solution in concrete form. The project thus would need both intellectual and physical solutions. It is a more purposeful and constructive activity.

Another distinction is that a project is always a real-life situation, while a problem may be hypothetical. The class may work on a problem for one period or part of a period, while a project is usually an extended enterprise, including varied activities. The outcome of a project is always practical, while that of a problem may not be.

## Types of Projects

Projects may be classified as

1. *Construction project.* The motive is to do or make something. Pupils have ideas that they want to put in concrete form, such as preparing articles for a bazaar.
2. *Enjoyment project.* The motive is participation in an activity that is accompanied by enjoyment or satisfaction. An example may be planning and taking part in a school program.
3. *Problem project.* The motive is to master some intellectual difficulty which comes from the learner himself. Curiosity or interest in the subject may be the dominant factor.
4. *Learning project.* The inner drive is toward acquisition of a skill or some knowledge. For example, a pupil may want to learn to swim or master certain combinations in arithmetic.

Risk (1965) classifies projects into three types: (1) physical or material projects, (2) learning projects, and (3) intellectual or problem projects.

Examples of physical and material projects are making a table, digging a well, making a school album, planting a garden plot, or fencing the garden.



Learning projects are study activities on the initiative of the individual, such as a project to speak English fluently, master Spanish conjugation, sight-read music, or write a short story.



Examples of intellectual or problem projects are intellectual questions that can be solved by induction or deduction, such as

1. To determine whether Maria Clara would survive in modern-day society or not
2. To determine if the U.S. bases would stay in the Philippines
3. To determine how Spain lost her colonies
4. To determine if Evangeline was justified in searching for Gabriel

Projects may also be individual or group, depending on whether one person or several make the projects. There are also projects in the various school subjects.

### Characteristics of a Project

A project; no matter what kind, has the following characteristics: (1) the activity is a unit; (2) it is carried on in a natural manner and in a natural setting; (3) it is independent of logical divisions of subject matter and is free from academic artificiality; (4) the learner approaches the task in an attitude of purposefulness as the task is self-imposed; (5) the activity is aimed at definite, attractive, and seemingly attainable goals. The activities of the learner grow out of the goal; (6) the learner marshals his own activities, plans and directs them, assuming responsibility for his efforts and the success of his activities; (7) the nature of the activity is such that the degree of success it attains is apparent in an objective way to the learner and is not dependent upon the judgment of the instructor.

### Steps

The project consists of the following steps: (1) purposing, (2) planning, (3) executing, and (4) evaluating.

*Purposing.* The nature and goals of the project are determined in this step. Goals and activities can be decided upon cooperatively by both students and teacher. By involving students, wholehearted cooperation and genuine interest in the project can be gained. Worthwhile projects can be initiated by the teacher, but by skillful guidance such projects can seem to be pupil initiated and pupil chosen. It is important for the teacher to consider the pupils' needs, abilities, and interests at this step of the lesson.

*Planning.* Even the planning can be the activity of both the teacher and the pupils. No matter how young the pupils are, they can always offer very good suggestions. Some teachers are often tempted to dictate activities rather than enlist the cooperation of their pupils. When activities are planned and initiated by the pupils, they perform their parts willingly and enthusiastically.

*Executing.* This means carrying out activities as planned and envisioned by the class. This may take one class period, a week, a month, or the whole semester, depending on the project being undertaken. If it is a long-range project, it will be well to have progress reports from time to time. Pupils will tell their classmates how far they have accomplished their assigned tasks or projects. Home economics or practical arts projects, scrapbooks, and exhibits are examples of long-range projects.

**Evaluating.** The finished products are displayed and judged by both pupils and teacher. Here is an excellent chance for the teacher to help develop critical thinking among his pupils. They should be trained to look for what is positive, not merely that which is negative.



### Problems Encountered in the Use of the Project Method

Certain problems can occur in connection with the use of the project method. Discipline is harder to maintain when the class is having a project, especially if it is the construction kind. Interest is high and one would suppose that discipline will not be a problem, but it is not always so. There is freer movement on the part of the pupils and discussions may also take place.

The selection of a project presents another problem. If there is a single project for the whole class, not all may be interested in it. It is rare to get 100% acceptance. If the students have separate projects, the task of guiding so many simultaneously will be a herculean task for the teacher.

Choosing projects that fulfill educational criteria is another difficulty the teacher has to surmount. It is not easy to look for projects that have the following characteristics: (1) educational value, (2) adaptability to the needs of the situation, (3) availability of materials, (4) justification of time consumed in terms of its results, (5) adaptability of project performance to school schedule, (6) low cost of materials, (7) decided advantage of this method over others, and (8) capability of finishing the project in the allotted time.

### Values

The project method is adjudged valuable for the following reasons: (1) it provides a motive for learning; (2) it trains pupils to be responsible and to develop initiative; (3) it trains pupils to solve problems in practical life situations; (4) it develops the spirit of cooperation; (5) it gives training in perseverance; (6) it develops such attitudes as alertness, open-mindedness, and tolerance; (7) it develops judgment; (8) it encourages creative activity, and (9) it furnishes the child with a hobby.

### Advantages

The advantages of the project method are (1) it emphasizes the practical in learning; (2) it increases interest as it is practical and tangible; (3) it gives experience in making plans and in selecting tools and materials; (4) it encourages independent research in applying practical criteria to a series of related

activities; (5) it breeds respect for the difficulties and values of constructive labor; and (6) it provides a natural way of learning.

## Disadvantages

The disadvantages of the project method are (1) it is a slow way of learning and is time consuming; (2) it is expensive; (3) much in life does not consist of planning and carrying out activities; (4) it is a failure in the hands of poor teachers; and (5) it sometimes degenerates into a fixed and formal statement of subject matter.

### LESSON PLAN IN HOME ECONOMICS FOR FIRST YEAR HIGH SCHOOL

by Flordeliza Regala-Paredes  
Supervisor  
St. Jude College, Manila

Vitamins and good food are expensive. Children and adults need vitamins and minerals for the body's daily needs. Here is a simple lesson in home economics that will benefit the young future homemakers.

#### I. After this lesson, the students will be able to

- A. Discuss the nutritive values of *malunggay*
- B. Plan and organize Mothers Feeding Club with the help of the school nurse
- C. Express appreciation for the inexpensive, nutritious malunggay

#### II. Concept: The lowly malunggay is very nutritious.

Ref.: *The Youngster*, August 1984, p. 21.

(Note: If there's no available magazine, the teacher can print this information on a chart.)

Did you know that one cup of cooked malunggay leaves, the poor man's vegetable, equals the nutrition content of two eggs and one glass of milk?

"That's why people who eat malunggay leaves are most often healthy and agile," reports the Nutrition Center of the Philippines.

The malunggay is easy to cook, easy to grow, and inexpensive. Here are the nutrients from this vegetable:

1. calcium — needed for strong teeth
2. iron
3. phosphorus
4. Horse iodine-iron compound not found in other vegetables; it strengthens red blood cells and prevents anemia.

Malunggay is good for breast-feeding mothers. It revitalizes the blood and provides plenty of vitamins for breast milk.

Malunggay is also used as medicine. The juice of pounded malunggay leaves is applied on small cuts and bruises, then the wounds are bandaged.



**III. Procedure**

- A. Song — "Magsinop Tayo sa Pagkain"
- B. Sharing time of experiences about cooking and marketing
- C. Review: The nutrients that the class have studied.
- D. Motivation: What are the newly researched vegetables that are inexpensive but nutritious?
- E. Lesson Proper
  - 1. Read the topics for discussion.
  - 2. Talk about the importance of malunggay.
- F. Planning and organizing the Mothers Feeding Club Program

**IV. Application Lesson: Cooking mungo with malunggay leaves**

- V. **Agreement:** Look for breast-feeding mothers in the community with the help of the school nurse or puericulture center nurse to be included in the club.

Here is another lesson plan in home economics that will make children go, grow, and glow.

**TEACHING UNIT IN FOOD AND NUTRITION GRADE 3**

by Epifania N. Paloma  
Magallanes North District  
Magallanes, Sorsogon

**I. Introduction**

Food is an essential need of every living thing. People, animals, and plants need food to live and grow. We have to obtain materials of which our bodies are built, the fuel for the production of energy and warmth, and regulatory substances that help keep our bodies in good health. All these things can be had by eating different kinds of food. Because one of the ultimate goals of education is to produce healthy children who will grow up to build a strong nation, it is the function of the school to teach every child what foods to eat in order to grow and to achieve good health.

**II. Rationale**

Eating the right kind and amount of foods results in a well-nourished child who

- A. Is of normal weight and height for a particular age
- B. Has firm and well-developed muscles
- C. Is mentally alert and a fast learner
- D. Has high resistance to infection
- E. Has a happy disposition in life

### III. Specific Objectives

For every pupil to be able to

- A. Tell the importance of eating the right kind of foods
- B. Define what *food group* is
- C. Identify the different food groups
- D. Enumerate the food sources and nutritional value of each food group
- E. Determine how food groups can be used as basis for planning a balanced diet
- F. Plan a whole day's menu for their families using the food groups as basis
- G. Discuss prepared whole day's menu with parents

### IV. Unit: Have an Adequate Diet

- A. Subunit: Eat the Right Kind of Foods
- B. Submessages
  1. A food group is a classification of foods with similar nutritional values and functions in the human body.
  2. Foods are grouped into three according to their functions as follows:
    - a. Body-building foods
    - b. Energy-rich foods
    - c. Regulating foods
  3. When you include each of the foods from the three food groups every day in proper amounts, you are assured of a balanced diet. This diet includes all the nutrients needed for growth and energy.
- C. The following are sources and functions of each food group:

<i>Sources</i>	<i>Functions</i>
1. Body-building Foods	
Fish and seafoods like anchovy, shrimp, clam, <i>alamang</i> , squid	Essential for growth and repair of body tissues
All kinds of meat like pork, beef, chicken	Help build strong bones
Internal organs like liver, kidney, heart, intestines	Increase body resistance against infection
Beans like mungo, sweet pea ( <i>garbanzos</i> )	Keep nerves steady
Nuts, like peanuts	Stimulate appetite
Eggs and milk	Aid in good digestion
2. Energy-rich Foods	Generate heat and energy for physical activities
Rice, corn, bread, and noodles	
Root crops like camote, <i>ube</i> , gabi; sugar and starch	
Butter, margarine, coconut oil, and other fats	

<p>3. <b>Regulating Foods</b>          Green leafy vegetables like ma-lunggay, pechay, <i>saluyot</i>, <i>kangkong</i>          Yellow vegetables like carrots, squash          Vitamin C rich foods like citrus fruits, <i>kalamansi</i>, etc.          Other fruits and vegetables like papaya, melon, banana, egg-plants, and radish</p>	<p>Protect the eyesight          Keep the skin smooth and clean          Prevent the occurrence of sore, bleeding gums          Promote normal waste elimination</p>
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## V. Activities

### A. In school (teacher to child)

1. The day before the lesson, ask the pupils to bring one kind of food each. Also, secure a copy of the three food groups poster or draw one.
2. On the day of the lesson, tell the pupils the importance of eating the right kind of foods.
3. Using the poster on three food groups
  - a. Define what *food group* is
  - b. Identify the different food groups
  - c. Enumerate the food sources and corresponding nutritional values
4. Let the pupils focus on the foods brought to the school. Make them classify those foods into different food groups.
5. Let them identify the nutrients present in food and give the functions of each food.
6. Demonstrate how food groups can be used as basis for planning a balanced diet.

Using the three food groups, tell the pupils to plan a whole day's menu for their families, taking into consideration the availability of foods and the likes and dislikes of the family.

### B. At home (child to parents)

1. Show list of foods from each food group.
2. Tell the importance of eating those foods.
3. Discuss a prepared whole day's menu with your parents. Make this as an example in planning the whole day's menu for the family.
4. Plan a one-week balanced diet or menu using the three food groups as basis. Include locally available and inexpensive foods that the family would like to eat.

## VI. Evaluation

### A. Using the paper-and-pencil test, determine how many of the pupils can

1. Tell the importance of eating the right kind of foods

2. Define what *food group* is
  3. Identify the different food groups
  4. Enumerate the food sources and the nutritional value of each food group
- B. Determine how many of the pupils were able to plan a whole day's menu using the three food groups as basis
- C. Ask how many of the pupils/parents plan correctly a whole day's menu with the three food groups as basis

#### VII. Follow-up

- A. Ask the pupils to write in their health notebook the whole week's menu they have planned with their mothers that will be served to the family.
- B. Ask the pupils to check in their notebooks the foods served every day. Identify the food group to which they belong.
- C. If parents are not yet using the three food groups daily for family meals, tell the pupils to ask their parents why. Tell the pupils to suggest means to encourage parents to use the three food groups daily in family meals and have them discuss these with the teacher.

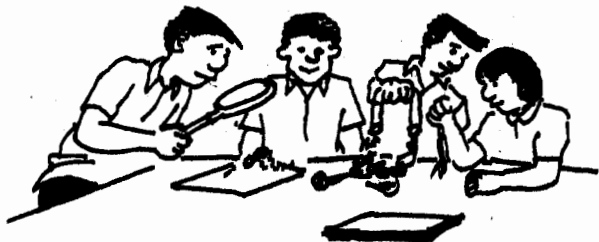
#### VIII. Reference

*Nutrition Information Series for Teachers No. 2, lessons 6 and 6-A, pp. 27-30*

## THE LABORATORY METHOD

### Nature

Originally, the term *laboratory* referred to a place for experimental study in natural science where various chemical materials were tested, analyzed, and prepared. The laboratory method was used to designate a teaching procedure that uses experimentation with apparatus and materials to discover or verify facts and to study scientific relationship. Later, the laboratory method was used not only in the physical sciences but also in home economics and manual arts. Since then, the laboratory method has been tried in all other subjects—physical and biological sciences, social sciences, English, mathematics, vocational, and commercial subjects.



Presently, the *laboratory method* is defined as a teaching procedure dealing with firsthand experiences regarding materials or facts obtained from investigation or experimentation. It is experimentation, observation, or application by individuals or small groups dealing with actual materials. Essentially it is the experimental method, enlarged and expounded.

### Relation to Other Methods

The above definition makes the laboratory method similar to supervised study. In fact, laboratory work now is supervised study. It is also synonymous with the experimental method because pupils do the experiment in the laboratory, as differentiated from the demonstration method where the teacher alone performs the experiment while the class observes. The laboratory method is also called a *research method* because the science classroom offers many opportunities for scientific investigation. Learning activities dealing with original data that lead to the solution of problems are planned in the laboratory.

### Aims

While children get information from books or from the teacher in other methods, in the laboratory method, they get it from real experiences. The laboratory method furthers three types of learning, namely, (1) information gained through observation, (2) experimental solution of problems guided by reflective thinking, and (3) acquisition of skill in manipulation. John Walton (1966) gives the following aims of the laboratory method:

1. To give firsthand experience in the laboratory which may increase student interest
2. To provide student participation in original research
3. To develop skill in the use of laboratory equipment and instruments

### Use

The laboratory method can be used in various ways, but it is usually planned for the individual. Group laboratory work is less satisfactory. In the past, laboratory work supplemented class work, resulting in the lack of correlation between the two. The trend today is to merge the two and make each supplement the other.

### Types

There are two types of the laboratory method: (1) the experimental and (2) the observational. The experimental type aims to train pupils in problem solving with incidental acquisition of information and motor skill. The emphasis is on discovery, original procedure, analysis, and solution of problems. In the observational type, the acquisition of facts is the dominant aim of the method. Facts can be acquired through activities such as visits to museums, exhibits, and art galleries, watching demonstrations, listening to lectures, viewing films, and going on field trips.

## Steps

Risk (1965) gives the following steps of the laboratory method: (1) introductory step, (2) work period, and (3) culminating activities.

*Introductory step for orientation and motivation.* This step includes determination of the work to be done. The teacher should decide beforehand what is to be done and then present this to the class so that the nature and purpose of the work will be clearly understood by the pupils. The teacher should motivate the work at this stage. He should give the necessary direction in written form as much as possible through guide sheets, laboratory manuals, workbooks, etc. Direction should be explicit so that the pupils can proceed with their work without loss of time.

*Work period.* When all the pupils may be working on the same problem or on different problems on their own, this becomes a supervised work period. No matter what they are working on, the students will gain experience in scientific procedure, handling raw material, and using tools.

The nature of the work will determine the length of the work period. If it takes several days, the class may meet as a group at the beginning of the period for discussion of problems, suggestions, or direction. Some students may work independently of the rest and begin where they left off.

Individual differences must be taken into account. Those who finish ahead of the others may be given extra work or they may do other work they are interested in. The very slow ones may be asked to work extra hours so that they can catch up with the rest.

*Culminating activities.* After completion or near completion of the work, the class may get together to discuss and organize their individual findings. They may also decide on how to present results of their individual work which may take any of the following forms:

1. Explaining the nature and importance of the problem the group had worked on
2. Reporting data gathered or other findings
3. Presenting illustrative material or special contributions
4. Special reporting and exhibition of work by those with individual projects
5. Exhibiting various projects and explanation by their sponsors

There are many other activities that can be used for culminating activities and, as much as possible, everyone should be given a chance to participate.

## Suggestions

In using the laboratory method, it would be well for the teacher to remember a few things.

1. Laboratory exercises should be adapted to broader social needs and should be adjusted to the needs, interests, and capacities of the students. Material must be socially valuable and relevant. Problems should be real, interesting, and adapted to the learner's level.
2. For reflective thinking, laboratory exercises must grow out of problems. Following a recipe is not scientific experimentation. Whenever

possible, simple experimentation with its laboratory techniques should supplement information. Experimentation requires greater activity, deeper penetration, and greater initiative than observation. Discussion, laboratory exercises, and interpretation should be put together in the laboratory method.

3. The laboratory manual should be chosen with care. Students should keep a laboratory notebook, where they are to record their observations, procedures, and findings of the experiment.
4. The teacher must be a skillful director of problem solving and of study. He should avoid waste of time and material. Whenever necessary, he should help and he should explain to the pupils the importance of objective observation. Emotional bias and prejudice should be rooted out.

## Evaluation

Advantages claimed in favor of the laboratory method are (1) it is learning by doing; (2) impressions through several senses make learning more effective; (3) undergoing actual experience is more vivid and what one learns by the laboratory method is retained longer. Reality is more vivid than any symbol; and (4) it is a direct preparation for life.

The disadvantages are (1) it is an uneconomical way of learning—the lecture-demonstration may be substituted for better results; (2) it becomes mechanical at times; (3) the expensive apparatus sometimes does not justify results; and (4) loss of time occurs due to indiscriminate overuse of the method. What is wasted in two hours of manipulating instruments may be learned in a short time by reading and thinking, or by a lecture-demonstration.

A lesson plan showing the laboratory method follows.

### **A LESSON PLAN IN SCIENCE FOR GRADE 4**

by **Nenita B. Fronda**  
**Nampicuan, Nueva Ecija**

#### **I. Objectives**

At the end of a forty-minute period, the grade 4 pupils should be able to

- A. Read and record temperature in both Fahrenheit and Celsius units/degrees
- B. Hypothesize reasons for the different temperature readings in the activities to be conducted
- C. Predict the temperature in both Fahrenheit and Celsius units/degrees of various activities to be conducted
- D. Verify the predictions concerning the temperature of various locations outside the classroom

#### **II. Topic/Content: Measuring Temperature of Body and Space**

- III. References:** *Learning and Growing Through Science, Grade 4*, pp. 306-307  
*Science Investigations for Elementary School Teachers*, pp. 21-22

#### IV. Materials

2 glasses  
 1 small tin can filled with water  
 thermometer with Fahrenheit and Celsius units/degrees  
 ice cubes (4 to 6 pieces)  
 a litre of water  
 kerosene burner

#### V. Procedure

##### A. Opener

The temperature of a body or space is measured by an instrument called *thermometer*. A thermometer has a scale similar to a number line. These are Fahrenheit and Celsius units/degrees. Each point on the number line is equal to 10 units/degrees. The instrument has a column that rises and falls.

##### B. Activities

1. Get a thermometer. Read and record the temperature inside the classroom. What is the reading in Fahrenheit? in Celsius?
2. Fill the two glasses with water. Put one ice cube in one glass and three ice cubes in the other glass. After 2 to 3 minutes, dip the thermometer in both glasses. What is the temperature reading in each glass?
3. Prepare the kerosene burner and place the small can with water. After 4 to 6 minutes, take the temperature of the water in the can. What is the reading? Which is higher, the temperature of the water in the can or that of the water in the glass? How do you describe the temperature of the water in the can? How about the water in the glass?
4. From the data collected in activities 1, 2, and 3, fill out the table below.

Activity	Body of Space	TEMPERATURE READING	
		Fahrenheit	Celsius
1	Temperature in the classroom		
2	Glass with one ice cube		
3	Small can with water subjected to heat		

When does the scale rise? When does it go down?

From the chart above, what hypotheses could you formulate?



5. Predict the temperature, on both Fahrenheit and Celsius scales, of various places outside the classroom; for example, the corridor, in the garden, and the water in the drinking fountain. Verify your predictions.

#### VI. Assignment

Below is a chart. Fill it out by taking and recording the temperature reading in a day. Take note of the temperature in the different hours of the day. At what hour of the day is the temperature at its highest and at its lowest? Put the necessary notations in the remark column.

<i>Time</i>	<i>TEMPERATURE READING</i>		<i>Remarks</i>
	<i>Fahrenheit</i>	<i>Celsius</i>	
6:30 P.M.			
8:30 P.M.			
7:30 A.M.			
9:30 A.M.			
11:30 A.M.			
1:30 P.M.			
3:30 P.M.			
5:30 P.M.			

## THE DEMONSTRATION OR SHOWING METHOD

It was mentioned earlier that sometimes it may be better to use the demonstration method instead of the laboratory method. The chief difference between the two is that in the laboratory method, all the children perform the experiment and "learn by doing." In the demonstration method, the teacher does the experiment before the class.

While children may make mistakes when they do an experiment in the demonstration method, the teacher will surely show the correct thing right at the start and thus save time. For example, the teacher can show what pitch means by raising and lowering his voice or he can show how certain games are to be played. The children will surely learn faster observing a demonstration than they would by trying to follow directions or experimenting by trial and error.

The demonstration or the telling-or-showing method has a place in the curriculum. Many things in life are learned through imitation. Where the school lacks facilities, the demonstration method may be used. In the hands of a competent teacher who is a good model himself, the demonstration method can be very effective.

The following lesson plan on page 117 makes use of the demonstration method.

## A LESSON PLAN IN ELEMENTARY SCIENCE

(Process Approach)

for Grade 4

by Petronilo A. Buan

### I. Aims

Given a situation, the pupil should be able to

- A. Observe, describe, and conclude the effect of forces upon objects
- B. Use other processes of science
- C. Give a sentence or two about the effect of equal and unequal forces on moving objects

### II. Conceptual Objectives

- A. An object will not move if the forces acting upon it are equal and opposite in direction.
- B. An object will move when the forces acting on it are unequal or when they act toward different directions.

### III. Materials

ropes, chair

Reference: Bulletin no. 18, s. 1969—*Matter, Energy, and Motion*, Division of City Schools (Manila), pp. 90-91

### IV. Procedure

What objects do you see in the room? Which are heavy and which are light? Which are easy to move and which are difficult to move?

Would you like to find out why objects can be moved?

#### A. Activity I

(Show a rope.) Observe and describe the rope. Let us play tug-of-war. (Call on two boys of equal strength. Assign each boy to hold the ends of the rope.) *Question:* What happens if each boy pulls the rope toward himself? The answers to the question are hypotheses. *Answer:* They remain standing opposite each other. *Question:* Who do you think has the stronger force? The answers to the question are inferences. (Let the boys pull the rope.) *Questions:* Did either of the boys move away? Were the forces applied equal or unequal? So, when equal forces are applied on objects, what happens to the objects? *Answer:* Objects do not move when equal and opposite forces are applied.

#### B. Activity II

Let us observe again. (Call on a big boy and a small boy to play the game.) *Questions:* Who has the greater force? the lesser force? What happens if they pull the rope against each other? The answers are guesses, which are hypotheses. Let us find out. (Let each boy pull the rope toward himself.) *Questions:* Which boy or object moved? Which has the greater force? Which object was not moved? So, if the force is weak, will the object move?

**C. Activity III**

(Call on 5 boys of equal strength. Assign 2 boys at one end of the rope and 3 boys at the other end.) *Question:* Which group will be moved? The answer to this question will be the hypothesis. Let us find out. (Let the groups pull the rope against each other.) *Questions:* Which group has the greater force? What happened? *Answer:* The group of 3 boys had the greater force. The group of 2 boys was moved. *Questions:* Was the game fair? Were the conditions the same? What should be done in order to set the same conditions? *Answers:* The game was not fair. The conditions were not the same. (Assign 3 boys of equal force in each group.) Setting the same condition is the process of controlling variables.

**D. Activity IV**

(Call on 2 boys. Provide each boy with a rope. Tie the legs of the chair with the ropes. With the other ends of the ropes in the hands of the boys, let them stand diagonally.) *Questions:* Are the boys standing opposite each other? What will happen with the chair if the boys pull the ropes? The answer will be a hypothesis. Let us find out if your answers are correct. *Questions:* Was there an opposite force? From what direction did the force come? Therefore, if there was no opposite force, what happened to the object? *Answer:* The object was moved. *Question:* When the force applied came from different directions, what happened to the object? *Answer:* The object was moved.

**V. Assignment/Agreement**

Draw a seesaw with a boy at each end. Show that there is equal force on both sides.

Draw another seesaw which shows unequal force at both ends.

**THE EXPOSITORY METHOD****Nature**

Closely akin to the showing-or-telling method is the expository method. *Exposition* means explaining or interpreting. The expository method is used a great deal in the lower grades as there is much that needs explaining. However, it is also used in the upper grades, in the secondary school, and even in college when something difficult needs explanation by the teacher.

**Uses**

The expository method can be used to advantage under the following conditions:

1. When relevant information is needed to make the class understand a part in the lesson
2. When pupils do not have the information, and time can be saved by the teacher telling it

3. When an idea or principle can be learned only by explanation
4. Where the use of induction will take too much time to justify its use, or whenever the difficulties of its use outweigh its value

Examples of lesson that require exposition are (1) rotation and revolution of the earth, (2) Mendel's laws of heredity, (3) how to extract the square root, (4) what causes the seasons, and (5) how to play Bingo. Geography, hygiene, physiology, government, and arithmetic have many topics that need explanation.

## Steps

To make explanations clear to children, the expository method may follow an organization like the following:

1. *Approach.* The proper mind-set may be established by recalling past experiences related to the present lesson. The points to be explained must be placed before the class.
2. *Presentation.* While explaining, it might be well for the teacher to make use of the following principles:
  - a. Relate the new to previous experiences.
  - b. Teacher and class should have the same viewpoint regarding what is to be explained.
  - c. Exposition means not only explaining but also interpreting.
  - d. Material should be organized so as to permit thinking.
  - e. To make the explanation clear and effective, devices may be used such as (1) analogies and stories, (2) illustrations, (3) models, (4) diagrams, (5) demonstrations, and (6) outlines and summaries to set facts in proper relationship.
3. *Application.* This step will show whether the pupils understood the explanation or not. It may be given in the form of a test, creative work, or another activity.

## Conditions for Effective Exposition

To make the expository method effective, the following conditions must be present: (1) the teacher's thorough understanding of the thing to be explained; (2) the teacher's comprehension of the children's ability to understand the explanation; and (3) the use of language and illustrations within the children's experiences and understanding.



## Evaluation

The expository method is time saving. The teacher may be able to give more material in a period that would take pupils hours to find. It is a good way to learn for those who are ear minded. It is the best way to get appreciation as the teacher usually can interpret better than the pupils.

One disadvantage, however, is that the thought movement or explanation of the teacher may be too rapid for some pupils. The method may be suited only for some types of subject matter where there are plenty of rich, new facts. It is difficult to test pupil results as far as outcomes, other than information, are concerned.

The teacher should guard against committing the following errors when using the method: (1) telling too much, (2) telling too little, (3) telling what can be developed, (4) telling what the pupils can find out for themselves, and (5) telling only what is in the book.

The following lesson plans show the expository method.

### SAMPLE LESSON PLANS FOR TEACHING THE USE OF THE DICTIONARY IN THE INTERMEDIATE GRADES

by Daria E. Judit  
Magallanes North Central School  
Magallanes North District  
Magallanes, Sorsogon



This is a guide to teach all about the dictionary in the intermediate grades.

Overview: A dictionary is a guide in the use of language. It provides pronunciation, spelling, abbreviation, history, meanings, and function of words as well as examples of usage. It is the current record of a changing language in a changing world.

#### LESSON PLAN I

##### I. Objectives

- A. To distinguish among some of the various kinds of information that dictionaries contain
- B. To use a dictionary or dictionaries to find information about words

- C. To observe some of the information provided by dictionaries

## II. Subject Matter

- A. Linguistic Concept: It is usage that gives words meaning. The dictionary helps us to talk and write in a realistic way.
- B. Key Ideas
1. The first dictionary was merely a list of difficult words, with one-word definition for each word.
  2. Modern dictionaries contain much more information about many more words than the early dictionaries.
  3. Modern dictionaries differ in the kinds of information they contain.
- C. Topic and References
1. Old and new dictionaries
  2. David A. Garlin, H. T. Filmor, *Our Language Today*, pp. 205-206
  3. Harold G. Shone, Mary York, et al. *Teachers' Edition English 5—Language, Linguistic Composition*, pp. T49—T51.
- D. Observing some of the information provided by dictionaries
- E. Background Information

It is wiser to accept dictionaries and their compilers as recorders of language rather than as makers of language. Most American dictionaries are descriptive, that is, they record the language as it is spoken and written. Some of the larger dictionaries also record how a word has been used in the past. Point out the impossible task of trying to "preserve words and phrases from mutability."

## III. Procedure

- A. Teaching lesson 1 (Setting the Stage)
- Words to Introduce: *dictionary, definition*
- Motivating Interest: Display several different dictionaries if possible and encourage pupils to examine them. Also show an unabridged dictionary and ask pupils to point out differences between these dictionaries.
- Ask: Do all dictionaries have the same kinds of information? Etc.
- B. Reading the Lesson
- Have the pupils study the paragraphs (historical linguistics) to discover the various kinds of information that are contained in dictionaries.

### Old and New Dictionaries

The first English dictionary, called *A Table Alphabetical of Hard Words*, was published in 1604. This was nothing more than a list of 3,000 difficult words, each followed by a one-word definition. The author, Robert Cawdry, made no attempt to include everyday words in his dictionary.

During the 1600s, more dictionaries were published. Around 1700 one dictionary maker, John Kersey, did define easy words as well as hard ones. But until the 1750s, all dictionaries were rather crude and not very valuable.

A man named Dr. Samuel Johnson changed all this. In 1775, Dr. Johnson produced the first modern dictionary. He included in his dictionary all important records, both easy and hard, and he gave them good meanings. He also gave sentences to show how each word was actually used in speech and in writing. By the end of the 1700s, most dictionary makers followed Johnson's lead. Dictionaries have been getting better and better.

The 1800s saw the greatest improvement in the quality of dictionaries. In England, scholars planned and prepared the *Oxford English Dictionary*, a twenty-volume work. One of the most interesting features of the Oxford dictionary is its word histories.

In America, a Connecticut schoolteacher named Noah Webster produced the first American dictionary called *Compendious Dictionary*. One of the most interesting features of this is the author's attempt to simplify the spelling of certain words. A few examples of the spelling Webster successfully changed are *labor* for *labour*, *theater* for *theatre*, and *magic* for *magick*.

Today there are many excellent dictionaries on the market. The publishers of these dictionaries spend a great deal of time, money, and effort to make sure their products remain excellent. But all of the publishers recognize the great debt they owe to the early dictionary makers like Robert Cawdry, Samuel Johnson, and Noah Webster. They all recognize that in a manner of speaking, their dictionaries have been in the making for 350 years.

#### C. Discussing the Lesson

Have the pupils compare the content of the early dictionary with the dictionary of today. Be sure that they note particularly the inclusion of a greater number of words in today's dictionaries, as well as more kinds of information (pronunciation, illustrative sentences, origin, history). Tell about the contribution of Dr. Johnson and Noah Webster, as well as the features of *Oxford English Dictionary* (point out that a dictionary records what is current usage, etc.).

List the specific kinds of information they have occasion to look for in dictionaries at various times.

#### D. Think and Discuss

1. Why do you think dictionaries are important to the users of language?
2. Where do you turn to for help when you are unable to spell certain words?

3. Do you ever look up common, everyday words like *house* and *dog* and *telephone* in your dictionary? Why do you think dictionaries include such words?
4. Think through your dictionary, and make a list of some of the different kinds of information it contains. Be ready to discuss with your classmates the kinds of information it contains.

#### IV. Practice (Written)

A. Here are examples of words whose spelling Noah Webster changed. Write their present-day spelling in your paper.

NOTE: The older spellings of some of these words sometimes are given as second spellings.

1. gaol — jail
2. centre — center
3. harbour — harbor
4. honour — honor
5. tyre — tire
6. waggon — wagon
7. traffick — traffic
8. favour — favor
9. traveller — traveler
10. defence — defense
11. cheque — check
12. judgement — judgment
13. storey — story
14. fibre — fiber
15. plough — plow

B. Not all of the spelling changes recommended by Noah Webster were accepted. Here are examples of some of his unaccepted proposals. Write their actual spelling on a piece of paper.

- |                         |                      |
|-------------------------|----------------------|
| 1. wurds — words        | 9. tang — tongue     |
| 2. helth — health       | 10. ritten — written |
| 3. rong — wrong         | 11. giv — give       |
| 4. breth — breath       | 12. yeer — year      |
| 5. speak — speak        | 13. det — debt       |
| 6. kee — key            | 14. proov — prove    |
| 7. karacter — character | 15. meen — mean      |
| 8. iz — is              | 16. reezon — reason  |

#### V. On Your Own

Look up the article about dictionary in an encyclopedia. Gather what information you can about the history of the dictionary before the 1600s. Be ready to discuss your findings with your classmates next meeting.



## THE MORRISONIAN TECHNIQUE OR UNIT METHOD

### Nature

The unit method is discussed in greater detail in another chapter as it forms the core of the integrative technique. H. C. Morrison was superintendent of schools in New Hampshire before he became a faculty member of the University of Chicago in 1910. What is known as the Morrisonian technique was developed in the laboratory schools of Chicago as a result of his observations of the schools in New Hampshire. Morrison proposed the mastery formula for learning — "pretest, teach, test the result, adopt procedure, and test again to the point of nature learning" (Risk 1947). This mastery formula is actually applied in the five steps of the Morrisonian technique which are (1) exploration, (2) presentation, (3) assimilation, (4) organization, and (5) recitation. The Morrisonian plan of instruction may be considered the beginning or forerunner of the different kinds of units and the integrative technique. The method is often used in the teaching of geography, history, government, and economics.

### Steps

*Exploration.* The teacher, through questions and tests or in discussions, discovers what previous knowledge or experience the pupils have about the unit to eliminate repetitions of subject matter already learned and to decide on the apperceptive basis for the new unit.

*Presentation.* The essential features of the unit are presented and important points emphasized. The aim is to give the pupil a bird's-eye view of the entire unit. Through proper motivation, the pupil's interest is aroused and goals or objectives are established. The teacher may make use of all available devices. Lectures, demonstrations, maps, pictures, stories, outlines, models, blackboard exercises, etc., can be utilized to make presentation successful.

Sometimes teachers make the mistake of thinking that they should do all the talking in the presentation step. Hence, in many lesson plans that make use of the unit method, it is common to see a lecture in the presentation. Any of the methods discussed in this book can be used in the presentation of the unit, such as the problem method, the discovery approach, etc.

A presentation test may be given, especially if the unit is long. This test should reveal how much the pupils have absorbed during the presentation. Sometimes it will be necessary to present the lesson anew if the presentation test shows that the pupils did not get the material taken up. It would be unwise to proceed when the presentation step is a failure. If it is successful, the teacher can then give the work sheet, which may be written on the board or mimeographed. Pupils answer the questions asked and perform the activities required. This is the start of the assimilation period.

*Assimilation.* The child learns what has been presented by the teacher, absorbs it, and makes it part of himself. It is really supervised study. The assimilation period presents an excellent opportunity for the teacher to check up on the study habits of children. It is an opportunity to develop valuable

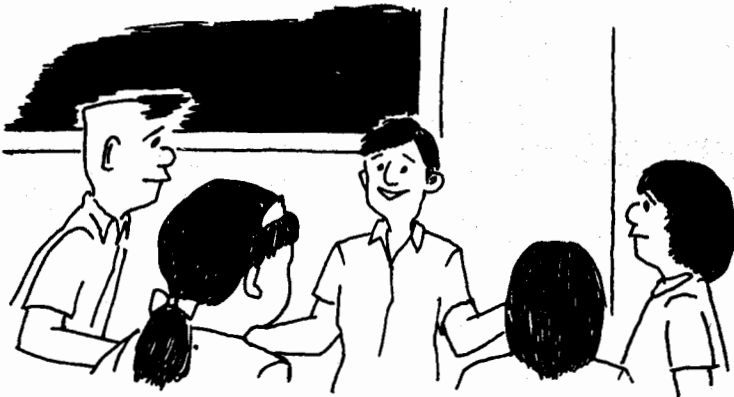
habits of study such as outlining, use of reference materials, getting the gist of paragraphs, etc. Pupils should be taught how to express answers in their own words, how to use references, how to interview people, how to make use of pictures, graphs, almanacs, brochures, etc. A variety of exercises and activities may be initiated in this period. As the teacher goes around, he may commend good work or suggest that it be improved. The teacher reaches the individual pupil, thus meeting to some extent individual differences. The assimilation period may cover a day, a week, or even longer, depending upon the length and difficulty of the unit under study.

A test may follow the assimilation step to find out whether there is a need for reteaching, or corrective teaching. The test is also a measure of the teacher's efficiency. The assimilation test is in effect a diagnostic test. After all questions are answered, the class is ready for the next step—the organization.

*Organization.* When the class has successfully assimilated the unit, they are ready for the organization step. This should be done without books, notes, charts, work sheets, or other aids. In this step, cooperative outlining is usually worked out by the teacher and the pupils. This outline is placed on the board, criticized, and adopted in a final form. This is an opportunity for the teacher to train the pupils in outlining. With his help, the pupils gradually learn to organize their thoughts. They can be trained to make all types of outlines. They are also given a chance to see the subject matter as a whole. Pupils can be led to discern relationships among the items of the outline. This is a chance for pupils to develop logical thinking.

*The Recitation.* This step is the reverse of the presentation where the teacher does most of the activity while the class listens. Now the class performs while the teacher and the other pupils listen. The unit recitation differs from the daily recitation. In the latter, the pupil may know a few details of the topic with the aid of the teacher's guide questions. In the unit recitation, the pupil has mastery of what he is talking about and may give a report or lecture for thirty minutes.

This step of the unit mastery technique should be the liveliest part of the lesson because the pupils prepare for and participate in many activities. Through their initiative, they can plan activities such as literary-musical programs, TV skits, puppet shows, fashion parades, panel discussions, dioramas, etc.; having planned the activities, they execute them.



This step has for its purpose the presentation of the whole subject matter in different situations. The pupils go through the whole subject matter again, but this time in a very pleasant atmosphere. The law of satisfaction can be very well utilized. Often the recitation ends with evaluation of the activities presented.

A written recitation or an achievement test covering the whole unit may be given after the recitation. The more comprehensive the test, the better, since it will reveal the extent of the mastery of the subject matter.

It will be noted that the steps of the unit mastery technique insure mastery. The subject matter as a whole is presented to the pupils at least five times: during the presentation, the assimilation, the organization, the recitation, and the achievement test.

## Evaluation

The Morrisonian technique is popular with many teachers, especially those teaching social studies. Many advantages of the technique are cited. Some of these are the following:

1. It takes up big blocks of subject matter and cuts across subject boundaries, and is therefore more true to life.
2. It does away with the fragmentation of subject matter that results with the use of other traditional methods.
3. Because the subject matter is encountered in every step of the unit and because it is presented as a unified whole, what is taught is learned to the point of mastery.
4. The Morrisonian technique corresponds to the steps in the mastery formula which are (a) pretest, (b) teach, (c) retest, (d) reteach, and (e) test. The pretest corresponds to the exploration step where a survey test may be given. The teaching corresponds to the presentation step. The retest corresponds to the assimilation or diagnostic test given right after the assimilation step. The reteaching corresponds to the organization and recitation steps. The final test corresponds to the achievement test given after the recitation.
5. The Morrisonian steps are not only logical but also psychologically sound.

There are, however, drawbacks to the use of the unit mastery technique. These are

1. Not all teachers are capable of making long-range unit plans that cover a week or more. They may not have the background or the patience to plan comprehensive objectives, activities, work sheets, etc.
2. Teachers may just go through the motions and leave out the essence. For example, during the assimilation period, the teacher may have all the teaching aids present, but leave the children to their own devices instead of going around to give help to individual pupils or groups.
3. Method alone does not insure mastery. The teacher may use the unit method and yet the pupils may not acquire mastery of the subject.

The following is a sample lesson plan on the unit method. The overview in the lesson plan corresponds to the exploration and presentation steps of the unit. The assimilation and organization steps and part of the presentation fall under Outline of Procedures for Study in the lesson plan. The recitation step of the unit is taken care of in Test of Progress, the last part of the lesson plan.

## **A LESSON PLAN USING THE UNIT METHOD FOR GRADE 6**

by Priscilla Arabit

### **I. Subject Matter: The Community and I**

### **II. Objectives**

#### **A. General Objective**

To plan and work cooperatively so as to be a useful member of the community

#### **B. Specific Objectives**

1. To prepare a self-checking device to improve one's health habits, moral behavior, and social relationships with one's family and with others
2. To show by example how one can be a useful member of society by being
  - a. honest and truthful
  - b. clean and orderly
  - c. obedient and helpful
  - d. industrious and thrifty
  - e. kind and understanding
  - f. friendly and sporting
3. To work willingly and faithfully for the economic sufficiency and well-being of our society
4. To compare one's achievements in the light of the past
5. To suggest solutions to situations presented

### **III. Materials and References**

#### **A. Suggested stories**

1. Aesop's fables
2. Created true-to-life situations or stories

#### **B. Films**

#### **C. Pictures to illustrate the stories and topics of discussions**

#### **D. Individual evaluation charts (mimeographed)**

### **IV. Overview**

#### **A. Set Induction**

Display news items, photos, or front pages of newspapers showing the grim and sad events of the present.

Say: Every day over the radio, on TV, and in newspapers, we are greeted by pictures of violence. Theft, robbery, snatch-

ings, and bank holdups are common occurrences. People are either kidnapped for ransom or are hired to kill. Life seems very cheap nowadays. Prostitution and drug addiction are on the upsurge. Graft and corruption occur among people in high government positions who should serve as models. There is decadence and demoralization in our present society.

The pictures you see in newspapers and magazines and on television show what is happening in our midst. We are all affected by those events. We cannot avoid them, for we all belong to one country. It is, therefore, the duty of every citizen to work together in order to insure the success of the government. How then can you be of help? What must you do? What must you avoid doing now? What must you keep on doing for the good of all?

**V. Outline of Procedures for Study**

**A. Retrospection**

Recall of habits and practices which one must

1. continue to do
2. avoid doing now
3. do though they were not done before

**B. Planning and Preparing an Individual Evaluation Chart**

*Samples:*

1. My Health Habits Chart

- a. I visited the dentist on \_\_\_\_\_, 19\_\_.
- b. I went to a physician for physical checkup on \_\_\_\_\_, 19\_\_.
- c. I last went to the barbershop on \_\_\_\_\_, 19\_\_.
- d. (Answer at the end of the day.)  
My daily health habits are

	S	M	T	W	Th	F	S
I went to bed at _____.							
I ate my breakfast before coming to school.							
I took a bath.							
I brushed my teeth after eating.							
I changed clothes as the occasion/activity required.							
I cleaned my shoes and washed my socks.							
I washed my hands and cleaned my nails.							
I used my handkerchief.							

## 2. My Chart on Manners and Conduct

## a. At Home

	S	M	T	W	Th	F	S
(1) I did not forget to pray.							
(2) I did something to make Father happy.							
(3) I did something to make Mother happy.							
(4) I shared something with my sister/brother.							
(5) I finished my assigned tasks promptly.							
(6) I kept my things in their proper places.							
(7) I talked softly when someone was asleep.							
(8) I saved money, food, time, water, light, etc.							

## b. In School

	S	M	T	W	Th	F	S
(1) I helped clean our room.							
(2) I greeted everyone with a smile.							
(3) I obeyed the bell signals.							
(4) I used the trash cans properly.							
(5) I took my turn at the canteen.							
(6) I studied my lessons.							
(7) I was attentive in class.							
(8) I worked quietly and independently.							
(9) I followed the signs and notices.							

c. In Public Places

	S	M	T	W	Th	F	S
(1) I obeyed signs and notices.							
(2) I did not throw anything on the sidewalk.							
(3) I conversed softly with others.							
(4) I waited for my turn when getting on a bus.							
(5) I did not spit on the ground or sidewalk.							

3. My Chart on Social Relationship with People Around Me  
a. With My Peers

	S	M	T	W	Th	F	S
(1) I did a good turn today.							
(2) I avoided quarreling with others.							
(3) I was careful with my words.							
(4) I was careful not to hurt the feelings of others.							
(5) I played fairly.							

b. With My Elders

	S	M	T	W	Th	F	S
(1) I greeted my elders.							
(2) I answered with <i>po</i> or <i>opo</i> .							
(3) I helped someone today.							
(4) I did not forget to say "Thank you."							

### C. Presentation of Concepts

1. Be clean and orderly.
 

Stories, poems, situations depicting the following concepts:

  - a. A happy community is clean and orderly.
  - b. Cooperation is necessary to keep a community clean and orderly.
  - c. Cleanliness is next to godliness.
2. Be obedient and helpful.
  - a. Concepts
    - (1) Obedience keeps us safe from harm.
    - (2) An obedient child is helpful.
    - (3) Obedience is love.
    - (4) Always take the opportunity to help others.
  - b. Suggested stories
    - (1) "The Ant and the Dove"
    - (2) "The Lion and the Mouse"
    - (3) "The Pig with a Curly Tail"
    - (4) "The Moth and the Lamp"
    - (5) "Little Red Riding Hood"
3. Be truthful and honest.
  - a. Concepts
    - (1) An honest man tells no lies.
    - (2) A hard-earned centavo is better than a stolen peso.
    - (3) Honesty is the best policy.
  - b. Suggested stories
    - (1) "The Honest Woodcutter"
    - (2) "The Boy Who Cried Wolf"
    - (3) "The Cowardly Bat"
4. Be industrious and thrifty.
  - a. Concepts
    - (1) Do not be afraid or ashamed of work.
    - (2) A penny saved is a penny earned.
    - (3) Save for the rainy day.
    - (4) Industry knows no obstacles.
    - (5) By your sweat you shall earn your bread.
    - (6) A lazy man's garden is full of weeds.
  - b. Suggested stories
    - (1) "The Ant and the Grasshopper"
    - (2) "The Turtle and the Rabbit"
    - (3) "The Crow and the Pitcher"
  - c. Poem: "A Nation's Strength" by Ralph Waldo Emerson
5. Be kind and understanding.
  - a. Concepts
    - (1) A kind man is understanding.
    - (2) Kind words turn away wrath.
    - (3) He who believes in tales has no mind of his own.
    - (4) Keep the tongue from evil.
    - (5) Do good always.



- b. Suggested stories
  - (1) "Cinderella"
  - (2) "The Rice Pot"
  - (3) "Hansel and Gretel"
  - (4) "Black Beauty"
  - (5) "The Spider and the Web"
- c. Poem: "The Arrow and the Song" by H. W. Longfellow
- 6. Be friendly and sporting.
  - a. Concepts
    - (1) Be a good loser and a humble winner.
    - (2) Win new friends but keep the old.
    - (3) It's better to lose in a game than to win by cheating.
  - b. Suggested stories
    - (1) "The Wind and the Sun"
    - (2) "The Turtle and the Monkey"
    - (3) "The Three Friends"
    - (4) "The Dog and the Bone"
    - (5) "The Race"

#### VI. Test of Progress

- A. Compare responses in individual charts before and after the unit was taught.
  - 1. What am I doing now which I didn't do before?
  - 2. What must I keep on doing?
- B. Observation and Test Cases
  - 1. Observe pupils as they play, eat, work, or study.
  - 2. Present true-to-life situations. Lead the pupils to give meaningful suggestions on how to solve the problem.
  - 3. Lead the class to plan and work on an activity and observe how the pupils cooperate with one another.
  - 4. Place an attractive sign near the door and observe if pupils follow it.
- C. Paper-and-pencil Test (Samples)
 

*Directions:* Read carefully. Check the letter of the better answer.

  - 1. You are eating some lanzones while riding on a bus. How will you dispose of the peelings?
    - a. Throw them out the window.
    - b. Deposit them in a paper bag.
  - 2. You are very thirsty. A long line of children is waiting for their turn at the drinking fountain. How can you get a drink?
    - a. Offer ten centavos to a boy who is at the head of the line so he would allow you to drink first.
    - b. Wait for your turn.
  - 3. You broke the favorite flower vase of your teacher. What will you do?
    - a. Request your parents to apologize to your teacher.
    - b. Be brave enough to tell your teacher yourself.

4. You lost a box of crayons which you need for your art class. You went to look for it at the Lost and Found Office. There you found a box of crayons but it was not yours. What will you do?
- \_\_\_ a. Borrow the box of crayons, and then return it afterwards.
- \_\_\_ b. Borrow from a classmate.
5. You are assigned to wash the dishes every Monday night. But one Monday you have many lessons to study. What will you do?
- \_\_\_ a. I'll study my lessons first and wash the dishes early the next morning.
- \_\_\_ b. I'll wash the dishes first, study one or two of my lessons, and the rest, early the next morning.

## THE LECTURE METHOD

### Nature

Although the lecture method is not commonly used in the elementary and high school, a discussion of traditional methods will not be complete without mentioning the lecture. Besides, pupils and students may have occasion to listen to a lecture during school convocations and teachers may have to lecture now and then.

The lecture method is like the telling method, but they are not identical. The lecture is more of exposition while telling is more of narration. Telling, however, may be a part of the lecture. Bossing defines *lecture* as a teaching procedure for clarifying or explaining a major idea cast in the form of a question or problem. This makes the lecture an exposition. The expository method, however, although essentially explanation, makes use of narration and description. On the other hand, telling makes use of the story, and is, therefore, narration, since its aim is to inform, not to explain. Telling is used to entertain. To catch attention and stimulate imagination, exposition may be given in story form. The lecturer may make use of this device.

The lecture held an important place in the teacher-centered traditional school. With the shift in emphasis to the child, the lecture has fallen from its place of importance. However, the lecture method still has its place and use depending on the subject matter and the situation.



## When to Use the Lecture Method

The main aim of the lecture method is to serve as a guide through a great mass of information characteristic of subject areas. The use of the lecture may be justified therefore under the following conditions:

1. When the teacher can give in one hour of lecture-demonstration information that may take the class two or three hours of laboratory work resulting perhaps in imperfect learning at that
2. When the teacher has available data that would be difficult for the class to obtain
3. When a new topic is to be introduced so as (a) to show how the new topic fits into the work, (b) to give a bird's-eye view of the work to come, (c) to arouse interest in the new work, and (d) to give adequate explanation for students to begin new work
4. When summaries are needed at the (a) close of the day's work, (b) close of the topic, (c) end of the chapter, (d) end of a unit
5. At the beginning of the lesson to create proper mind-set, to generate enthusiasm, or to arouse appreciation
6. On occasions where problems arise or questions that are valuable and pertinent are asked
7. Where supplementary materials may be introduced to advantage, such as (a) recent material, (b) interesting detail, historical or biographical background, (c) explanation of the author's viewpoint and exposition of the teacher's
8. When visual materials, such as slides, pictures, graphs, films, and specimens need explanation

## Technique

*Preparation of the lecture.* The teacher needs to prepare his lecture in much the same way he prepares his lesson plan. The lecture, like the lesson plan, is anticipatory teaching. The lecturer must have the objectives of education and the objective of the lecture clearly in mind. An outline of the lecture is essential. Where emotional reactions and appreciations are to be aroused, the outline should be hidden for the sake of artistry. If exposition is to be used to clarify issues, the outline should stand out and may even be distributed to the class. It is better to have an outline than to write a lecture as the latter destroys flexibility and makes presentation lifeless. Great care should be given to the preparation of illustrative devices. Use should be made of the apperceptive experience of the class, as in the matter of illustrations. When the lecture is expository, it may make use of the following steps: (1) preparation, (2) presentation, (3) comparison, (4) generalization, and (5) application. Walton (1966) gives the following steps to be followed if the lecture is not formal:

1. *Introduction to the lecture.* An attention-getting device may be used here. The class should be given an idea of what the lecture is about.
2. *Presentation of the body of the lecture.* The important points should be presented first. The less important should come later.
3. *Conclusion, closure, completion, culmination.* A summary or reorganization of what has been said may end the lecture.

*Procedure in the lecture.* To lecture well is an art. Here are some suggestions on how to improve the art. An outline will help make the organization clear and effective; so will practical illustrations like charts and diagrams. Interest may be aroused at the beginning by presenting a problem or posing a question which is to be explained during the lecture. Attention can be sustained by keeping the class in an expectant attitude. The teacher may point out the problem and ask questions during the lecture to maintain interest or to check if the class is following the thought movement. The teacher should adjust his pace to the difficulty of the subject matter and the ability of the class. He should talk in a conversational manner and cultivate a good sense of time. Students should be trained to take down notes, and they should be held responsible for the lectures. Sometimes outlines may be given. There should always be a checkup as a means of diagnosis and as an aid to remedial teaching.

*Other factors.* Teacher personality weighs a great deal on the effectiveness of a lecture. A good voice, good pronunciation and enunciation, proper facial expressions, and gestures are important. The style of delivery and the manner of lecturing should be appropriate to the subject matter and comfortable for the teacher. The teacher should talk in a poised, animated, conversational style and should maintain a pleasant and cheerful disposition during the lecture. He should look at the students and talk to them directly.

In the lecture the teacher has a great responsibility to guide the thinking of the students, and so he must make himself intelligible to them. Unlike other methods where motivation can come from subsequent activities, in the lecture student interest depends largely on the teacher.

Getting and holding attention is another factor the teacher must master. He may use various aids such as introducing visual aids, varying the pace and tempo of his presentation, changing his voice, using novelty and surprise, and eliminating distractions.

Comprehension by the class is the measure of success of the lecture. To insure comprehension, two approaches may be used. The first is repetition or by an approach from another angle of thought. The second is to remove the causes of difficulty by using verbal and concrete illustrations.

## Evaluation

Like other methods, the lecture has its strengths and weaknesses. In spite of the criticisms against the lecture, there are many good points that justify its use. The lecture may serve as a very effective means of arousing appreciation. A work of art, a musical composition, or a literary selection may be better appreciated if preceded by a lecture that explains its meaning and the circumstances of its creation. The lecture may also serve to motivate a study, such as, for instance, a study of the life of Gabriela Silang. By telling the historical or biographical background of Gabriela Silang, the teacher may put the class in the right emotional tone.

New topics may be introduced by a lecture. The teacher usually gives a short lecture at the beginning of a unit, a problem, or a contract. The presentation step of the Morrisonian technique is usually a lecture on the teacher's part.

The lecture trains students to listen. They listen to the radio, to tape recordings, and on TV. They have to listen in many situations in life. Life includes relating incidents, telling stories, explanations, etc., which are forms of lecture.

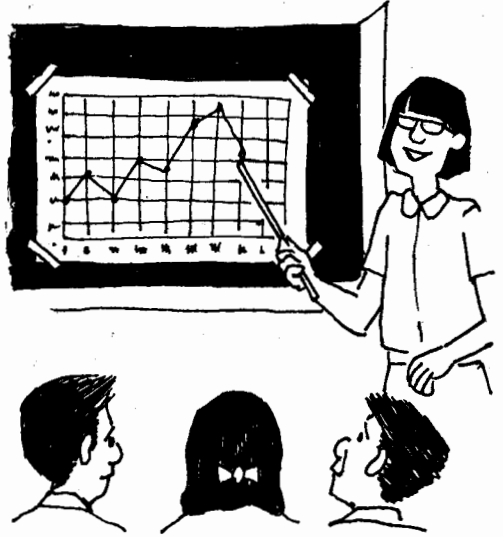
The lecture is also a means by which the teacher may give additional information which may not be available to the class. Where there is a lack of reference books, the teacher may resort to the lecture and thereby save time. The teacher may enrich or organize a course through the lecture

as the organization of subject matter in a book may not always be the best. Summarizing the lessons taken in a lecture may insure proper perspective and show the relation of the details to the ideas.

The lecture method also has its weaknesses. The greatest objection to its use is that it violates the principle of "learning by doing." This is the reason why its place in the elementary and high school is insignificant. Moreover, it fosters a passive attitude in the class. A sustained lecture will be just a waste of time where students are immature, and if what is lectured can be found in the textbook, or if the material is available to the students, or if the teacher lectures on what he has assigned. The lecture may not hold the attention of the class for various reasons, such as (1) the teacher may not know the technique of lecturing, (2) the teacher may overuse the lecture, and (3) the children may be too young. It may also be ineffective as a method of teaching because (1) students may not know how to take down notes, (2) they may not be able to distinguish the important from the not-so-important points, and (3) they may not know how to analyze and summarize.

Other disadvantages of the method are as follows: Pupils lack the opportunity to study in advance. The learner becomes a mere recipient instead of a thinker. Merely telling facts does not guarantee that these will be thought over, learned, and used. The material may not become part of the mental life of the hearer; hence, it may not be remembered or applied. There is lack of opportunity for discussion and expression. During the lecture, there is no way of finding out whether the class is getting the right ideas or not. After the lecture, it will be harder or too late to correct misconceptions.

The following lesson plan shows how the lecture method may be used in the elementary grades.



## A LESSON PLAN IN HEALTH AND SCIENCE FOR GRADE 4

by Catalina Salazar

### I. Objectives

At the end of the lesson, the pupil will be able to

- A. Identify useful and harmful insects
- B. Tell where harmful insects like to live
- C. Suggest ways to keep the home free from pests
- D. Participate actively in the discussion

### II. Subject Matter

#### A. Concepts

1. Household pests live in dark and dirty places.
2. There are ways to keep the house free from pests.

#### B. Content

1. There are useful and harmful insects.
2. Household pests cause damage to plants, clothes, and furniture, carry diseases, and spoil food.
3. Ways to get rid of pests:
  - a. Keep the house clean and dry.
  - b. Keep things in their proper places.
  - c. Keep food covered.
  - d. Clean food immediately from tables, kitchen, sink, and floor.
  - e. Cover trash cans.
  - f. Throw away empty cans and bottles, and old tires and magazines.
  - g. Others

### III. Activities

- A. "To Tell the Truth"—This is a lecture by three speakers on the same topic.

#### 1. Speaker A

I'm Professor Siyentipiko. I am happy to be invited as a speaker. I know many things about insects. Insects are animals with three pairs of legs and three body parts—the head, thorax, and abdomen. All insects are harmful. They attack plants and animals. The silver fish damage books; termites attack furniture; ants, flies, and cockroaches spoil the food in the house; houseflies and mosquitoes carry germs that cause diseases. All insects must be killed because they are pests.

#### 2. Speaker B

I'm Professor Siyentipiko. Thank you for giving me the chance to talk about insects. Insects are beneficial to man. Insects are pollinators. They help plants bear flowers. Honey is used as food. Silk is made from the silkworm's cocoon.

Insects that live in the ground make the soil rich. They also make the earth clean by eating dead animals and plants. All insects are useful so we must not destroy them.

3. Speaker C

I'm Professor Siyentipiko. I am honored to be your speaker about insects. Some insects are useful. They are food sources for birds, fish, and frogs. They give us honey and silk. They make the soil fertile. They have many uses. But they are also harmful. Some insects destroy plants, clothes, books, and furniture. They spoil our food and cause diseases. We should protect the useful insects and destroy the harmful ones.

B. Individual/Group work

1. Word search. Look for eight names of insects from the game. Divide these words into two groups—useful insects and harmful insects.
2. Complete the following unfinished sentences:
  - a. Mosquitoes like to live in places that are \_\_\_\_\_.
  - b. Flies like to live in places that are \_\_\_\_\_. They are seen in \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
  - c. Cockroaches like to live in places that are \_\_\_\_\_. They are seen in \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.
  - d. Some insects are useful because \_\_\_\_\_.
  - e. Some insects are harmful because \_\_\_\_\_.
3. Answer the following questions:
  - a. Why are flies harmful?
  - b. Where do flies like to stay?
  - c. Why are mosquitoes harmful?
  - d. Where do mosquitoes like to stay?
  - e. Why are cockroaches harmful?
  - f. Where do cockroaches like to stay?
4. Dramatize this situation.

Mr. and Mrs. Malinis are going to the province for two days. Before leaving, they call their children to talk about ways to keep the house clean and orderly and free from pests. In the parents' instructions, include these ways to keep the house clean and free from harmful insects.

C. Discussion

D. Evaluation

1. Complete the following unfinished sentences:
  - a. I learned that . . .
  - b. I am happy to know that . . .
  - c. I relearned that . . .
  - d. I see that I need to . . .
  - e. Now I know that it's okay for me to . . .

2. Value sheet. Answer each question with *yes*, *no*, or *maybe*. If your answer is *yes*, stand; if *no*, remain in your seat; if *maybe*, clap your hands. Be honest with your answers.

Are you someone who . . .

- a. throws waste in trash cans?
- b. keeps empty cans and bottles away from the house?
- c. eats food that has been spoiled by flies and cockroaches?
- d. catches butterflies and kills them afterwards?
- e. swats flies when you see them?
- f. keeps your kitchen clean and dry?
- g. keeps your dirty dishes in the kitchen sink overnight?
- h. enjoys watching harmless insects in the garden?
- i. believes that there are useful insects?
- j. will help control household pets?

E. Assignment

1. "Ana Up-to-date" — Name some insects that are beneficial, some that are harmful. What harmful insects are in your house? How can you get rid of them?
2. Semantic differential

## SUMMARY

Traditional methods that are still used today are the following: (1) the inductive, (2) the deductive, (3) the type study, (4) the problem, (5) the project, (6) the laboratory or experimental, (7) the demonstration or showing, (8) the expository, and (9) the lecture. They are time-tested methods and they have been found to be effective. Current approaches in teaching make use of these old methods, and the prospective teacher will need a thorough grasp of the procedures in these traditionally effective methods.

## STUDY GUIDE

1. Compare the inductive and deductive methods.
2. How is the type study method similar to the inductive method?
3. When does a problem exist? Give the types of problems and an example of each. In what way will the problem method be of value in the children's future?
4. What is the difference between a problem and a project?
5. How is the laboratory method related to (1) the experimental method, (2) the research method, (3) the supervised study? How do the types of laboratory work differ?
6. How does the demonstration or showing method differ from the laboratory method?
7. How can the expository or telling method be made effective?
8. When is it justified to use the lecture method in the high school? How long should it be?



# 6

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## IMPROVED INSTRUCTIONAL PRACTICES AND DISCUSSION PROCEDURES

### OBJECTIVES

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1. To enumerate and describe the different improved instructional practices that focus on the child as the center of learning
2. To explain the different aspects of the discovery and process approach as a teaching-learning process
3. To explain the need for a greater range of pupil participation in learning experiences
4. To compare the integrative activity technique with the mastery technique of Morrison
5. To explain team teaching and its major characteristics
6. To illustrate the use of discussion procedure in the development of oral and written communication skills
7. To explain how mastery learning as a strategy optimizes learning

With the change of emphasis on educational objectives, with the inclusion of more outcomes of learning, with the focus on the child as the most important factor in the educational process, the concept of method has likewise diversified and broadened. In recent years, newer and more informal methods have come about.

Current practices have gradually replaced the undesirable features of so-called lesson hearing procedures. This is due in part to the gradual acceptance of the newer philosophy of education, i.e., education is not merely a process of learning facts and storing knowledge, but it is concerned with the many-sided development of the individual—social, emotional, and mental—including the ability to meet social needs.

The problems which teachers must face in relation to classroom teaching are What is to be done in the classroom and how? Are there certain types of classroom experiences that can contribute both to social adjustment and to



*Team teaching is an efficient way to profit from the special talents and expertise of teachers.*

the attainment of the objectives of a course? How should we treat subject matter and how should we treat the learners?

The answers to these questions constitute what we commonly call as *method*.

Before taking up specific techniques for organizing classroom activities, it is best to consider first the social needs of pupils and students in planning classroom experiences which can be expressed in terms of abilities required to satisfy them.

These include the ability to function in the following ways as enumerated by Risk (1965): (1) analyzing and thinking through the different kinds of problems people meet in everyday life; (2) planning, organizing, and executing projects of different kinds, both individual and group; (3) sharing effectively in panel and group discussions; (4) leading group discussions; (5) acting as secretary or chairman of a committee; (6) acting as a leader or presiding officer of a large group; (7) working with a group in planning a report or summary of some undertaking; (8) expressing effectively before an audience; (9) planning and giving demonstrations; and (10) participating effectively in group social activities.

The last mentioned experience will develop in the learners (a) freedom from withdrawing tendencies; (b) feelings of self-confidence, of security, and of belonging; and (c) a feeling of personal worth.

Not every class can provide activities that will contribute to the realization of all preceding outcomes, but many activities can contribute if they are handled in the right way. The result will be a greater range of pupil participation in learning experiences. With this perspective, the teacher should understand the need for different methods of organizing classroom activities

and the need to make a wise choice of the types of activities that should be used under varying conditions. The different methods of organizing classroom activities are discussed in the succeeding pages.

## INTEGRATIVE TECHNIQUE

### Nature

The new trend in education—that of focusing attention on the child's interests, abilities, and needs and on the improvement of community living—necessitates the use of the integrative technique, which enables each child to do his best and to acquire the skills he would need in daily life so that he can find his place in the community.

*Integrative technique* is a term used to designate what modern educators call the *new learning*, which aims to achieve the integration of the individual. This technique tries to do away with the study of subjects in the traditional manner and substitutes activities as units of work which would help the child solve problems in his everyday life. Success in the use of this technique depends on the teacher's thorough and complete understanding of the principles of teaching and learning.

Integrative teaching is concerned with the development of a well-rounded personality—one which can adjust and respond to situations in a meaningful way. It capitalizes on dynamic experiences which serve as the bases of unity. Integrative technique transforms the classroom into a democratic workshop where the teacher and the pupil work together in solving their problems.

Integration as a concept of organization is seen in different ways. Educators appear to use the concept of integration in several contexts.

Psychologically, *integration* is the term employed to denote the educator's concern for the total personality of the learner.

Pedagogically, *integration* is used to describe a teaching procedure which relates varieties of subject matter to units of study or to problem-solving situations.

Sociologically, *integration* is utilized in different ways, namely:

1. To designate the desired relationship between an individual and other individuals as interacting personalities
2. To designate the desired relationship between an individual and the organized institutions of society
3. To designate the desired relationship between one organized institution of society (the school, for example) and other institutions involved in the complex nature of culture

Integrative technique is a means of achieving both personal and social integration of the individual. This technique can work effectively only in an integrative curriculum where learning opportunities are organized to promote integration or wholeness of the learner.

## Objectives of Integrative Teaching

The objectives of integrative teaching may be summarized as follows:

1. To foster security and satisfaction by developing in the pupils a feeling of belonging and of acceptance of each other as worthwhile members of the group
2. To promote cooperative learning by having pupils and teachers plan together
3. To help develop sense of values by fostering an atmosphere in the classroom that enables pupils to evolve aesthetic standards, spiritual values, work standards, norms of group conduct, and appreciation for human work and individual integrity
4. To help develop self-direction through the teacher's developing in the child the ability to control his own affairs and his own emotions
5. To foster creativity by developing self-expression through art, music, dramatics, etc., as well as in the social, scientific, and literary fields. Pupils should be given the freedom to select the media they want to use in expressing themselves.
6. To provide opportunities for social action through the teacher's making use of all opportunities to develop in the child the willingness to cooperate with the members of his group for the common good
7. To help evaluate learning such that individual pupils as well as the group are guided to evaluate progress in all phases of learning

## Integrative Activities in the Classroom

The teacher who uses integrative techniques in the classroom should be familiar with the principles involved especially those that pertain to subject-matter divisions, that is, learning experiences are unified around a certain core or theme for which the child has a felt need. Organized learning experiences are called *units*.

A *unit* may be defined as an organization of activities or experiences around a purpose or a problem. It signifies wholeness, oneness, or unity. Learning starts with large centers of interest branching out into different activity fields so that the learner reacts as a whole to the situation presented.

Units of work have been classified in various ways; however, the numerous classifications may be categorized into three major types: (1) subject matter units, (2) center of interest units, and (3) integrative experience units. *Subject matter* units are organized around the usual textbook chapters or topics or around major generalizations and principles. These units are at times, like in science, also organized around aspects of the environment such as air, water, sky, or climate. *Center of interest* units are based on the interests of pupils, their felt needs, their dominant purposes, or a combination of these. *Integrative experience* units, on the other hand, go further in seeking a learning product in changed behavior and the adjustment of the individual (Monroe 1950).

The desirable characteristic of a unit depends on its content or purpose. There are, however, characteristics which are common to nearly all types of units (Lee and Lee 1960).

Units should be *problem centered*. Problems suggest purposes which lead to action or response. The unit should deal with some phase or problem of living sufficiently significant to merit careful study. Significant problems cut across artificial subject matter barriers because they deal with broad knowledge and understandings. In the solution of these problems, it is important to see relationships like the bearing of the past on the present, the effect of geography on culture, and the role of culture on politics.

Units should deal with materials that are not only within the comprehension of the learner but also within the scope of his experience. A unit should be difficult enough to challenge the learner yet simple enough to be understood.

Units should provide for continuous development of the learner in all phases of growth, for a sequence of experiences, and for a variety of activities or experiences for the class and for individual learners. These experiences may be in the form of (1) visual activities like reading, looking at pictures, or observing people at work and play; (2) oral activities like stating a fact, relating an event, asking a question, offering a suggestion, or taking part in an interview; (3) listening activities like listening to a formal presentation of materials, listening to a conversation or group discussion, or listening to a play; (4) drawing activities like drawing a graph, a diagram, a map, or a pattern or painting a mural; (5) motor activities like performing an experiment, selecting materials, holding an exhibit, constructing a model, playing a game, dancing, taking care of pets, or making a garden; (6) mental activities like imagining, memorizing, detecting a problem, analyzing factors involved, seeing relationships, or arriving at a decision.

The unit should be cooperatively planned by the teacher and group of learners. The learners should participate in all aspects of the unit. They should help select problems and materials, plan activities, and evaluate experiences and goals.

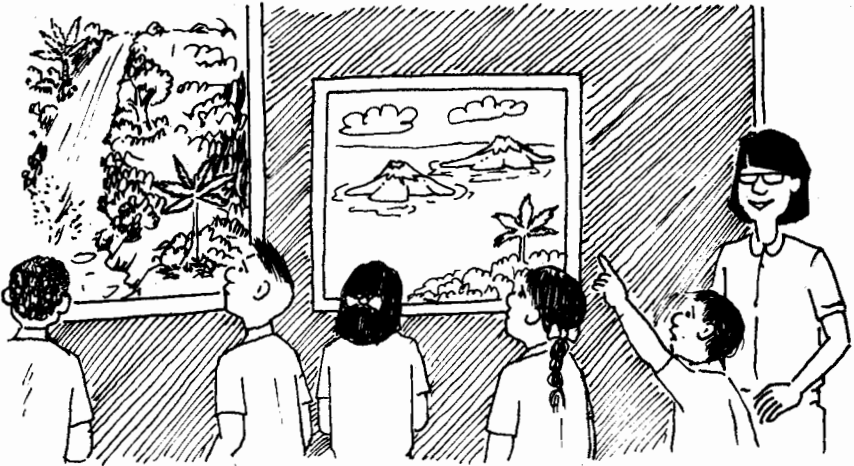
Lastly, units should be planned with an understanding of how learning takes place.

### **Steps Involved in Developing a Unit**

Teachers have tried and found the following steps most effective in carrying out the integrative activity technique: (1) initiating the unit, (2) point of experiencing, (3) culminating activities, (4) evaluation.

#### *Initiating the Unit*

Through the skillful guidance of the teacher, the pupils become aware of a problem confronting them which challenges them to action. It can be in the form of a problem or a difficulty which children feel concerns them most. The teacher may ask such question as How can we solve the problem? What things or materials do we need? What little problems need to be solved before we can answer the big problem?



There are several approaches by which a teacher may initiate the unit. The room may be structured or rearranged such that a display of objects and pictures will arouse the curiosity of pupils. Pictures and posters of historic geographic places and events, of customs, festivals, living conditions, and industrial or agricultural processes may be utilized to structure the room.

The teacher can capitalize on special occasions and significant events such as Family Week, Independence Day, the anniversary of the hero after whom the school is named, and any event which is within the children's understanding and level of experience. He may deliberately ask questions or initiate a conversation on such topics. Field trips or visits to places of special interest can also arouse children's curiosity.

A pressing problem in the home or school may serve the purpose of initiating a unit. The class may undertake a local project suggested by the school or by some local organization, such as beautifying the school grounds, conducting a clean-up campaign, or holding a garden contest. Some projects may also be suggested by school organizations like the Junior Red Cross Council, School Health Brigade, Human Education League, or the Mathematics Club and by classes which may wish to extend their activities to other sections of the school.

Showing motion pictures and lantern slides, playing phonograph records, and reading stories or poems are other ways which have been tried out and proved to be surprises in arousing children's interest. Referring to experiences in previous units is, however, one of the most common practices of teachers in initiating a unit.

Planning comes after the unit is initiated. The whole class may plan cooperatively or the individual groups may do their own planning and listing of little problems and possible activities to be undertaken.

#### *Point of Experiencing*

At this stage each pupil decides on his interest, and under the teacher's guidance, begins to work on the various activities suggested. Interest groups are created, leaders are voted upon, and the groups meet to find out possible solutions to their problems.

The teacher's skillful guidance is most needed at this stage so he can direct the activities which will develop the capabilities of each child to the fullest. The teacher should provide the pupils with appropriate activities and experiences necessary to enable them to understand and accomplish the unit. At this point the pupils have identified problems and are now ready to find answers to their questions. The children are then guided to undertake one or several activities such as researching, reading, collecting materials, constructing simple articles, and undertaking field trips.

*Research Techniques.* Research is defined as a diligent investigation or studious inquiry. It has various levels. Though children cannot work at the level of graduate students, they nevertheless can begin to do accurate, simple research. It is the approach that counts. Research is a method of securing information which every citizen should know and should be in the habit of using. Primary schoolchildren can develop readiness for this and carry it on by themselves to a certain extent. Intermediate pupils, on the other hand, can do research within the limits of the materials they can locate and deal with. For example, elementary pupils can use the interview to gather information.

*Acquiring Needed Skills.* Another learning activity which comes naturally in unit teaching is reading. Children should be guided and encouraged to read, digest, summarize, or select and relate to the unit the significant material they read. After some experience, they can even begin to synthesize findings from different sources and thus arrive at generalizations and insights of their own.

Other forms of activities that children may undertake are examining displays, pictures, books, etc., collecting pictures and other illustrated materials, making posters, booklets, constructing and interpreting simple articles, performing chores, following directions, undertaking field trips, and preparing numbers for a program.

#### *Culminating Activities*

At this stage the teacher aims for the integration of the unit. With the teacher as guide, the pupils summarize the unit, organize ideas, and develop expression. The pupils can see the relationship of their individual efforts to the achievement of each group and the class or school as a whole. Knowledge gained, skills and abilities developed become functional, and desirable attitudes, insights, and appreciations are further enhanced. This is the time of sharing learning with other groups and for clarifying further concepts which have been developing. In some instances, the culmination may be poorly handled. The sharing does not follow the requisites of good learning. Children seldom see the interrelationship of their findings nor do they evaluate the adequacy of their solution.

When groups have been working on various aspects of a problem, it is important that the pieces be put together. The way each group shares or reports its findings is another opportunity for vital learning. In this connection, the groups should be reminded that "telling is not teaching" and that a simple enumeration of facts results in a minimum of learning. Most often, the

report simply results in each child taking his turn, standing before the group, and reading or telling what he found out. After the reports are given, the sharing is considered over and the class moves on to the next activity. Such a treatment of sharing findings with others should be avoided since it is only a waste of time.

The children should, instead, individually or as a group, identify the basic concepts and understanding developed during their study and see how they fit into the general problem of the unit. The next thing to consider is to plan a way to make these concepts meaningful to the pupils who have not dealt with them. This is a matter of communication. As children explore ways to obtain effective communication, they actually deepen their own understanding. Meanwhile, the teacher should see to it that the members of the class benefit from the work of individuals.

The presentation of materials, reports, and research made by each group is usually both oral and visual. Drawings, pictures, charts, or graphs are usually utilized to put across the ideas. Exhibits of models which students have made, demonstrations, or experiments are also means of presenting their work. The reports, however, should be set up in such a way as to involve the group during the discussion that follows. This may be in the form of TV programs, radio broadcasts, debates, or open forums.

Another type of culmination is one in which the whole class cooperates on a project, utilizing the understandings the various groups have developed. It may be a play, a program, or an exhibit. It may be shared with another class, with the parents, or with the people in the community.

### *Evaluation*

Evaluation is a continuous process in all phases of the unit. Pupils and teachers are continually measuring and evaluating whenever choices are made. Children learn to improve their work if they are made fully conscious of the standards, aims, and goals to be achieved.

It is particularly pertinent that the children be conscious that group evaluation is of more value than teacher evaluation. There is no fixed, standard method of measurement suggested, but records are indispensable.

## **Principles Underlying the Planning of Integrative Activity Units**

The planning of integrative activity units requires careful preparation on the part of the teacher so that he may be able to guide the pupils successfully. He should study each unit to discover possibilities for rich experiencing among his pupils and to be sure that needed materials will be on hand. He should remember the following principles so as to avoid pitfalls:

1. The learner is more important than the subject matter. The development of the learner's whole personality should be the main concern of the teacher. Learning, therefore, must involve the mental, physical, social, emotional, and spiritual development of the child. Education must aim at the development of the integrated personality of the individual.



2. Long-range plans and large units should be preferred to daily, isolated tasks.
3. Learning activities should be organized around real-life problems of the pupils, their needs, and interests.
4. Learning should be characterized by group planning, group work, and group evaluating. All activities should be shared by both the teacher and the pupils, with the latter supplying the maximum share. The teacher should be merely an adviser.
5. Teaching and learning activities should follow democratic procedures. Integration of personality should be accomplished through love and understanding, not through coercion or harsh treatment.
6. Individual differences should be provided for by a wide variety of learning activities and experiences.
7. The atmosphere of the classroom should be permissive and happy.

The sample lesson plan shown below illustrates the workability of the long-range plan as indicated by the integrative technique.

## **PANSANGAY NA PAKITANG-TURO SA ARALING PANLIPUNAN**

### **Ikaanim na Baitang**

Inihanda ni Consuelo B. Castro  
Paaralang Magat Salamat  
Tundo, Maynila

#### **I. Mga Layunin**

Sa katapusan ng aralin, ang mga bata ay nararapat na

- A. Nasasabi kung paano matatamo ang isang panatag at matiwasay na pamumuhay sa isang pamayanan
- B. Nakapaglalahad nang maayos ng mga kaalamang nalikom, nabasa, at namasid
- C. Naipahahayag ang bahaging dapat gampanan sa ikatatamo ng isang panatag at matiwasay na pamumuhay sa isang pamayanan

#### **II. Yunit: Ang Sambayanang Pilipino**

Paksa: Pagtatamo sa isang panatag at matiwasay na pamumuhay sa pamayanan

Mga Kagamitan:

Saligang-Batas

*Malayang Pilipinas*, p. 38-55

*Ang Pilipino sa Pagbuo ng Bansa*, p. 149-175

*Isang Bansa, Isang Lahi*, p. 130-143

*Dangal ng Lahi*, p. 77-79

#### **III. Mga Gawain**

- A. Pagtatakda ng pamantayan

## B. Pamukaw-sigla

Pagbabalitaan tungkol sa mga gawaing pampamayanan ng barangay

## K. Pagsasanay: Kaban ng kabatiran

*Hal.* Ang bawat kalayaang tinatamasa ng mga tao ay may katapat na \_\_\_\_\_.

- |                |                 |
|----------------|-----------------|
| a. pamantayan  | c. pananagutan  |
| b. palatandaan | d. pananambitan |

*Sagot:* c

## D. Balik-aral

Paggunita sa nabuong kaisipan kahapon

*Kaisipan:* May bahaging dapat gampanan ang bawat mag-aaral upang matamo ang isang maayos at mapayapang paaralan.

## E. Aralin

## 1. Pagganyak

Pagbibigay ng sariling palagay sa kahulugan ng isang panatag at matiwasay na pamumuhay

## 2. Pagbuo ng suliranin

Paano matatamo ang isang panatag at matiwasay na pamumuhay sa isang pamayanan?

## 3. Paglinang ng aralin

a. Pag-uulat ng mga kaalamang nalikom sa pamamagitan ng pagbabasa, pagmamasid, at pakikipanayam

b. Pagpapalitan ng kuru-kuro kung paano matatamo ang isang panatag at matiwasay na pamumuhay sa pamayanan

## 4. Pagbuo ng kaisipan

Matatamo ang isang panatag at matiwasay na pamumuhay sa isang pamayanan kung ang bawat mamamayan ay gagampanan ang mga nararapat na tungkulin nang buong katapatan.

## G. Pagpapahalaga

## 1. Pantiyak na pagsubok

Isulat ang titik ng tamang sagot.

(1) Ang pagkakaroon ng isang panatag at matiwasay na pamumuhay sa isang pamayanan ay isang karapatan at tungkulin. Ang pangungusap na ito ay \_\_\_\_\_.

- |             |                     |
|-------------|---------------------|
| a. di-tiyak | c. tama             |
| b. mali     | d. walang katuturan |

(2) Naglunsad ng proyekto tungkol sa kalinisan ang kapitan ng inyong barangay. Ano ang gagawin mo?

- Ipaubaya na sa mga Metro Aide ang paglilinis.
- Makikiisa ako sa paglilinis ng kapaligiran.
- Pababayaan ko sila habang naglilinis.

(3) Magkakaroon ng panatag at matiwasay na pamumuhay sa pamayanan kung \_\_\_\_\_.

- a. Makikiisa ang mga pulis at militar sa mga mamamayan.
- b. Tutuparin ng lahat ng mga mamamayan ang tungkuling dapat nilang gampanan.
- c. Tutuparin ng mga nakababata ang lahat ng kanilang tungkulin.
- d. Tutuparin ng mga nakatatanda ang kanilang mga tungkulin.

Sagot: (1) c, (2) b, (3) b

2. Mga nalinang sa aralin

a. Pangkabatiran

Ang isang pamayanan ay papayapa kung tutuparin ng mga mamamayan ang kanilang mga tungkulin.

b. Pandamdamin

Ang karapatan ng iba ay dapat igalang.

c. Pangkasanayan

Ang mga aklat ay dapat gamitin nang maayos.

#### IV. Kasunduan

1. Sumulat ng isang maikling talata kung paano ka makatutulong sa pagpapanatili ng isang panatag at matiwasay na pamumuhay sa inyong barangay.
2. Maglikom ng mga kaalaman kung paano itinataguyod ng pamahalaan ang katarungang panlipunan.

Sanggunian:

*Ang Pilipino sa Pagbuo ng Bansa*, p. 137-141

*Isang Bansa, Isang Lahi*, p. 51

Saligang-Batas, Artikulo XIII

## THE DISCOVERY APPROACH

### Nature

The discovery approach refers to an inductive method of guiding pupils to discuss and organize ideas and processes by themselves. It means helping them use ideas already acquired as a means of discovering new ideas. It is the process by which the children under subtle direction go through the logical process of observation, comparison and abstraction, generalization, and application. Instead of "telling," either by the teacher or a textbook explanation, self-discovery sets up learning situations whereby children are encouraged to explore a process or discover rules. The primary concern is with developing a pattern of thinking instead of merely arriving at an answer.

The discussion, question and answer, and other methods become subsidiary when the discovery approach is used. The child learns by observing and experiencing from the day he is born. He develops techniques of discovery which will help him meet the challenge of his environment. The method is so natural that pupils find it enjoyable and teachers find it rewarding.

### **Types of Self-discovery**

Self-discovery as a learning process is figuring out things for oneself. The teacher, in employing this process as he provides the proper learning situation within which the pupils can discover solutions to their problem, actually resorts to the use of two types of discovery—the guided discovery and the pure discovery.

*Guided discovery* is an approach to instruction by which the teacher tries to draw out from his pupils certain bits of information through properly organized questions and explanations leading them to the eventual discovery of particular concepts or principles.

*Pure discovery* is an approach where the pupils are expected to arrive at certain concepts and principles completely by themselves, i.e., with little or no guidance from the teacher except for the explanation of particular terms or references.

### **Principles Underlying the Discovery Process**

The success of the discovery approach entails following certain principles. The more fully the teacher understands and applies the principles that underlie the discovery approach, the more success he can expect from its use. Such principles are as follows:

1. The learning process moves from a hunch or intuition to a stage of in-depth analysis and then to the point where knowledge claims are based on concrete, documentary evidence.
2. The classroom serves as a miniature laboratory and the community, a large-scale laboratory for exploration and discovery.
3. Children learn as a result of their observations and the experiences they undergo.
4. Children discover relationships and make generalizations in their own individual ways.
5. Learning through self-discovery is enhanced by individualized and small-group explorations.
6. The methods used by children in learning through self-discovery are similar to the ways in which scientists think, work, and organize knowledge.

### **Steps in Self-discovery as a Teaching Approach**

The process brings the learner into more intimate contact with essential, concrete experiences and with the actual operations of abstracting and generalizing from empirical data. As the learner goes through the process, he uses his own "steps"; this should not alarm the teacher as no two minds function exactly in the same manner. With each new learning opportunity,

the teacher should encourage pupils to explore and discover rules. He should not merely explain rules. The teacher who utilizes the discovery process discovers for himself that "telling" is not teaching and that "hearing" is not learning. The value of exploration and discovery has long been recognized, and it is receiving wider attention today for several reasons. One of these is recognition of the fact that the attitudes required for exploration, discovery, and generalization are in themselves important and desirable. Our present-day scientific age requires not mere mastery of information and skills. The need is for men and women to use their minds as well as their knowledge in solving problems in science, economics, and technology. The real test of this understanding will come when the pupil is confronted with a difficult problem situation which requires new ways of finding a solution.

Opportunity for individual exploration need not be restricted to complex situations. Many simple problems can be made available for practice. Pupils can be guided to go through several steps which lend themselves to the nature of the discovery process of learning.

One of the chief responsibilities of the teacher in this method is to provide the setting for problem solving within which children can discover solutions to their problems. First, the pupils should learn to identify and explore a problem. Second, he should learn that he can improvise a solution even though he does not know how to use refined procedure. This is aptly illustrated in the teaching of mathematics. Take the problem of learning long division when a pupil is to find how many 7s are in 84. He can improvise a solution through repeated subtraction and should actually use this process in a number of exercises until he sees that it really works and why. He is next confronted with a more complex problem, one that could be on finding the number of 6s in 492. Here, he should be led to see that he can first remove eighty 6s and then two 6s. Third, by systematizing what he has discovered under proper guidance, he is led to see that the long division algorithm is actually a refinement of his improvised process. Pupils who have repeated experiences of this sort will not only use the process more intelligently but will also be led to understand that permanency in learning is better acquired through exploration, discovery, and generalization.

In science teaching, the method may be illustrated by a typical lesson whereby a teacher arouses his pupils' interest by showing a fish swimming about in a covered bottle. This situation can lead to questions such as the following: How long can the fish live in the closed bottle? How does the fish get more air over a period of time? Do plants need air to stay alive? Is air necessary for water animals to live?



After several days, during which the pupils begin to make conjectures on how long the fish will live, the teacher may begin the lesson by asking: What does a fish do to stay alive when not sealed in a bottle? Answers by the class, which are in reality an analysis of the problem, can consist of such statements as the following:

1. It must breathe.
2. It must eat.
3. It must get rid of wastes.
4. It must avoid enemies.
5. It must avoid unfavorable conditions in its environment.

The class can see that if all these conditions are true in the sealed bottle, the fish could definitely live.

As the pupils name the conditions essential to life, they are actually being led to propose hypotheses directly related to the fish in the sealed bottle. These hypotheses could be as follows:

1. Water contains oxygen; fish take in water and get oxygen in this way.
2. Sunlight on water forms oxygen.
3. Only air-breathing animals use oxygen.
4. There is a very slow passage of air through the glass of the bottle which is sufficient to replace that used by the fish.
5. Minerals in the sand dissolve in the water, thereby giving off oxygen to the air and water.
6. Plants give off enough oxygen for the fish to live, and use up the carbon dioxide that the fish give off.

Other hypotheses similar to the above may be given for the other conditions necessary to maintain life. Each hypothesis may be discussed and some discarded as not worth testing. Hypotheses that will provoke considerable argument should be retained, and the pupils should be guided to devise experiments to test each one separately.

To test hypothesis 1, for example, three pint-sized and three quart-sized fruit jars with self-sealing lids should be procured and one pint of water placed in each. Two small goldfish may be placed in each jar. The jars should be sealed tightly and set on a table. This should be done early in the morning. By about three in the afternoon, four of the fish in the quart jars that were half filled with water will all seem to be in normal condition. Two of the quart jars will be kept closed, and the third will be left open until the next day. By morning the children will discover that all the fish in the closed jars are dead, while those in the third one that had been left open are alive. This experiment will convince the class that oxygen is a vital factor in the respiration of fish and that it can be taken in from the water.

More specifically, the following steps emphasize the self-perpetuating nature of the discovery process of learning: (1) identification and exploration of a problem, (2) statement of hypothesis, (3) experimentation and gathering of data, (4) solution of a tentative hypothesis, and (5) verification.

## Evaluation

Children's ability to employ methods of self-discovery can be evaluated by the following means: (1) record observations of children's performance as they conduct their demonstrations, experiments, and other creative work, check hypotheses, and form conclusions; (2) make children prepare diaries or logbooks of consecutive class activities; (3) analyze methods of inquiry employed by pupils who have engaged in creative activities; (4) evaluate tape-recorded class activities for evidence of critical thinking in children's oral contributions; and (5) use recommendations made by specialists to define behavior patterns indicating children's ability to use methods of inquiry.

Competent teachers and specialists in learning theory have recognized the value of self-discovery by pupils. The techniques of discovery developed by pupils will enable them to meet the needs of our technological age, which requires more than mere mastery of information and skills.

The advantages of the discovery method when consistently and carefully used are as follows: (1) more permanent, meaningful, and useful learning is achieved when pupils are actively involved than the learning brought about as a result of teacher direction and control; (2) a sense of freedom prevails as children are encouraged to discover and test generalizations and to search out new ways of solving problems; (3) new topics become new opportunities as children are encouraged to approach new topics with confidence rather than apprehension. This confidence comes with the knowledge that they have at their command techniques for discovering new ideas or for applying old ideas in new situations; and (4) excitement pervades the classroom. The discovery has high motivating effects on the learner. It releases the pupil's energy and enthusiasm and helps develop in him a more favorable attitude toward work.

The discovery approach is an important classroom tool. Like all tools, it must be carefully used. Its use does not rule out the other valuable tools for the following reasons:

1. It is not feasible as a primary means of teaching subject matter content because of the time and cost involved.
2. Children can be subjective in their evaluation of external events and are likely to jump to conclusions.
3. Few learners of average ability can discover solutions to problems by themselves.

The following sample lesson shows how the discovery approach is utilized in organizing learning activities in arithmetic.

## A LESSON PLAN IN ELEMENTARY MATHEMATICS FOR GRADE 5

### I. Objectives

At the end of the lesson, the pupil should be able to

- A. Use correspondences in making comparisons between two sets
- B. Express ratios by using the colon, number pair, and fractional term
- C. Demonstrate how to form proportions
- D. Interpret and solve problems involving ratio and proportion

### II. Subject Matter

Ratio and Proportion

Div. Bul. 14, s. 1962

*Elementary Mathematics and Curriculum Guide* (rev. ed.), pp. 60-65

McSwain, et al., *Arithmetic*, pp. 187-197

Tangco, et al., *Mathematics for Children of Today*, Grade VI, pp. 136-139

### III. Activities

#### A. Drill

1. Basic combinations in subtraction—group X
2. Subtraction exercises with regrouping

#### B. Cumulative Review

1. Checking of homework
2. Opener: What two correspondences are suggested by each pair of figures?

A	XXX	XXX
B	XXXX	XXXX
A	XXXX	XXXX
B	XXXXX	XXXXX
A	XXXXX	XXXXX
B	XX	XX

#### C. Main Lesson—Preparation

1. Comparing equivalent fractions
2. Reviewing
  - a. concept of ratio
  - b. terms
  - c. equivalent ratios
3. Expressing ratios in fractional form
  - a. 20 boys to 35 girls in a class
  - b. 3 red balls to 7 green balls
  - c. 2 atis for ₱1.20
  - d. 24 seats to 30 passengers
  - e. 50 kilometres per hour



4. Writing an equivalent ratio for each of the following:

- a.  $8/12$
- b.  $2/8$
- c.  $10:12$
- d.  $(6, 10)$
- e. 40 to 60

D. Exploration and Discovery

1. Emma's album contains 8 postcards, while Linda's album contains 42 postcards. What is the ratio of Emma's to Linda's postcards? Linda's to Emma's postcards?

2. If Emma paid ₱40.00 for her postcards, how much did Linda pay for hers?

Emma—8 postcards—40 pesos

Linda—12 postcards— $N$  pesos

*Solutions*

a. Finding equivalent fractions

$$8/12 = 1 \times 8/12$$

$$8/12 = 5/5 \times 8/12 \text{ (Rename 1 as } 5/5\text{)}$$

$$8/12 = 40/60$$

b. Cross multiplication

$$8/12 = 40/N$$

$$8N = 480$$

$$N = 60$$

c. Using reciprocals

$$8/12 = 40/N$$

$$8/12 = 1/N \times 40$$

$$N \times 8/12 = (N \times 1/N) \times 40$$

$$8/12 \times N = 1 \times 40$$

$$8/12 \times N = 40$$

$$(12/8 \times 8/12) \times N = 12/8 \times 40$$

$$1 \times N = 480/8$$

$$N = 60$$

3. Solve for  $N$ :

$$6/9 = N/36$$

$$6/9 = 1/36 \times N$$

$$36 \times 6/9 = (36 \times 1/36) \times N$$

$$216/9 = 1 \times N$$

$$24 = N$$

E. Abstraction and Organization

1. To form proportions:

Comparisons should be made in the same order so that we name equal ratios.

2. Proportions may be solved by

- a. finding equivalent fractions
- b. cross multiplication
- c. using reciprocals

**F. Fixing Skills**

Make the following proportions true:

1.  $12/48 = 60/s$
2.  $150/10 = n/100$
3.  $12/5 = x/25$
4.  $14/16 = t/48$

**G. Application**

Last Christmas vacation, Jaime worked for 3 days in a bicycle repair shop. Mario worked for 2 days. If Jaime's share was 180 pesos, how much was Mario's share?

**IV. Assignment**

Solve for  $N$ .

1.  $32/24 = N/72$
2.  $27/18 = 9/N$
3.  $27/18 = N/54$
4.  $21/14 = N/28$

5. Dante can run 35 metres in 8 seconds. If he goes at the same speed, how long will it take him to run 140 metres?

**THE PROCESS APPROACH**

Actually there is no difference between the process approach and the discovery approach because they mean the same thing. Only the terminology differs, but the substance is the same. We go through a series of processes and finally discover something. The term discovery connotes something new, something yet unknown.

The basic philosophy of the discovery method is that the child learns by firsthand experience and progresses at his individual rate of learning while he finds out concepts for himself.

**The Process Approach to Science Instruction**

Problems in science will always arise as a child observes nature. One may wonder or be astonished over a certain phenomenon and may even call it a miracle. The child may be frustrated when he fails to find an adequate explanation. The demand for sense in this state of confusion is the beginning of scientific inquiry.

An attempt to solve the problem is the introduction of the so-called approach to science instruction. The process approach to science teaching is not new. It is not an educational fad that may sooner or later become obsolete. Teachers have long been using the different processes in their classroom activities.

One misconception of many teachers about the process approach is that it is a method of teaching, which is not the case. Actually, the processes are used in the question-and-answer method and in the unit, the project, the

inductive, or other methods. The only difference is in the amount of emphasis on the processes used in teaching procedures. The process approach allows the children to

1. Understand that change, a cause-and-effect relationship, has been, is, and will continue to be a fundamental phenomenon in our universe
2. Attain their maximum potential for effective thinking and action
3. Increase understanding of themselves and of their relationships to the universe
4. Retain the enthusiasm of seeking more and more knowledge
5. Accept the challenge that society needs their best talents and wisdom

### Why Use the Process Approach?

The new curriculum emphasizes science as a process whereby the child learns to understand his environment and simultaneously develops scientific skills through personal experience with materials and phenomena.

In view of the many new discoveries and inventions which have caused the proliferation of knowledge, it is impossible to learn everything in one's field of specialization. This knowledge explosion poses the problems of what science concepts to teach and how to teach them effectively.

*Process and intellectual development.* The interrelated nature of intellectual development is explicitly recognized in the kinds of activities undertaken in the different grades or years, sometimes referred to as *integrated processes*. These processes include controlling variables, defining operationally, formulating hypotheses, interpreting data, and as an ultimate form of such integration, experimenting. These processes can be used in other subjects on all levels of education. A brief description of the expected sequence of development in both simple and integrated process categories follows:

#### 1. Observation

Observing is the process of noting the characteristics of an object or objects. It involves sensory perceptions such as taste, sight, hearing, smell, and touch. Lessons should start from simple observations to more complicated empirical observations.

#### 2. Description or communication

Describing or communicating is the process of telling what was perceived. It requires precise verbal and written communications. The children should be taught enough descriptive vocabulary to enable them to give accurate description of colors, shapes, sizes, weights, volumes, etc.

#### 3. Classification

Classifying is the process of sorting and arranging objects into meaningful groups. The aim of providing experiences in classification is to develop the skills in showing relationships, identifications, and noting similarities and differences.

#### 4. Measurement

Measuring is the process of determining length, weight, depth, width, area, volume, time, and temperature of objects or things. Mathematics is the language of science. The aim of providing expe-

riences in measurement is to develop the skills in the use of different methods of measuring and to give the children the idea of standard measurement.

#### 5. Inference

Inferring is the process of arriving at a tentative conclusion. Inferring is thinking about a fact based on observations or experiments. The aim of providing experiences in inferring is to train the children in suspended judgment, which is a characteristic of a scientific mind.

#### 6. Hypotheses

Hypothesizing is the process of giving a tentative explanation, which is yet to be tested for validity. A hypothesis is an educated guess. Hypotheses are often followed by experimentation.

#### 7. Prediction

Prediction is the process of foretelling probable consequences based on observable and patterned facts. The process itself is projection or prognosis. Prediction develops analytical thinking and guessing approximately what will happen next.

#### 8. Control of variables

Controlling variables is the process of setting up the same conditions, properties, or factors which may influence the end result of the experiment. To develop the skill in identifying the cause of errors in the procedures of the experiment, variables may be in the form of size, time, distance, kind, and weight.

#### 9. Experimentation

Experimenting is the process of discovering concepts, principles, conclusions, or testing hypotheses.

### Teaching Procedure Involved in the Process Approach

Researchers in science teaching are trying to find out how science can be taught in such a way that children will learn the fundamental concepts of both the physical and biological sciences, and at the same time, learn that while scientific ideas are based on the observation of natural phenomena, these ideas are also the product of human inventiveness and imagination, and that for any idea to persist and be fundamental in science, it must be tested against many observations and experiments. The following are steps followed in the approach:

Selected materials, living and nonliving, are brought into the classroom for children to observe or manipulate in their own way or under the guidance of the teacher. The nature of the material and the objective of the experiences determine to what extent the pupils' activity will be guided. Through manipulation, the pupils gain direct physical and mental contact with the natural world from these preliminary explorations.

The teacher introduces the scientific concept that describes or explains what the pupils have observed. This is called the *invention lesson*. This is necessary because one cannot expect children to produce out of their minds the concepts that have been invented by the scientific "greats" of the past.

Discovery lessons are provided to present further examples of the concept. Here the child is expected to recognize that the new concept has applications to situations other than the initial example presented. In short, these experiences reinforce, refine, and enlarge the content of the concept.

The process approach is presented in the lesson plan that follows.

**A LESSON PLAN IN SCIENCE FOR GRADE 6**  
by Arlyne B. Dungca, Legarda Elementary School

**I. Objectives**

At the end of the lesson, the pupil should be able to

- A. Interpret meaningfully the data on growth in the height of plants provided in graph/graphs
- B. Identify correctly the manipulated and controlled variable which may affect the conduction of heat in different materials
- C. Gather evidence on the expansion and contraction of solids by experimenting on given materials
- D. Predict with some degree of accuracy the height of the rising and falling of weights based on recorded observations
- E. Plot carefully the results of an experiment in a graph

**II. Subject Matter**

Unit: Matter, Energy, and Motion

Concept: Solids expand when heated and contract when cooled.

Activity 2, pp. 2-5, *Elementary Science Curriculum Guide, Grade Six*

Processes stressed: Prediction, controlling variables, communication, and experimentation

Materials: Timepieces, gas lamps, a board with a copper wire fastened to it, observation charts, suspended washers, matches

**III. Activities**

**A. Sharing period**

1. Health inspection—appraisal of the proper grooming of the class
2. Weather report—giving observations about the weather conditions of the day
3. Science news—giving data on the *Voyager*

**B. Drill: Interpreting data recorded in graph/graphs**

**C. Review: Identifying the controlled and manipulated variables in a given situation**

*Directions:* Read the situation carefully and be able to answer the question below it.

An experiment was devised to test which kind of material (glass, steel, or copper) conducts heat the fastest.

Thumbtacks were attached to each rod with a drop of wax held above a candle flame for 58 seconds.

Which of the following variables should be controlled? Indicate your answer by writing the number of the correct responses only.

1. place where the experiment was performed
2. diameter and length of rods
3. amount of wax
4. weight and number of thumbtacks used
5. distance of thumbtacks from the end of the rods
6. time of heating
7. part of the flame it is held
8. kind of material rods are made of
9. sex and age of person performing the experiment
10. accuracy of timepiece

**D. New lesson**

1. **Motivation:** Recall the result of the experiment performed during the previous lesson.
2. **Getting acquainted with the materials on the table**
3. **Involvement activities**
  - a. **Stating the problem**—Identify the problem relevant to the situation presented.
  - b. **Making inferences and hypotheses** about identical problems
  - c. **Naming the variables** that could affect the result of the experiment and identifying those that should be controlled and those that should be manipulated
  - d. **Performing the experiment** to gather evidence to determine the truth or falsity of hypotheses
  - e. **Recording results** on individual and group observation guides
  - f. **Plotting data** on individual and group graphs
  - g. **Formulating generalizations** on the expansion and contraction of solids based on their findings
4. **Extension activities:** Children solve some problems on the expansion and contraction of solids applying the concepts learned.
  - a. Why is space provided between the rails of railroad tracks?
  - b. How are you going to open a tightly sealed bottle?
5. **Evaluation:** Children rate themselves, using the checklist for evaluation.

**IV. Assignment:** Look around your community. Find out how the contraction and expansion of solids is applied in the construction of cemented streets and the putting up of telephone wires.

## THE CONCEPTUAL APPROACH

In this approach, subject matter is taught to enable pupils to develop concepts. A concept is one's mental picture of anything—an idea, an object, or a procedure; it will vary from one person to another, depending on previous experiences. Concepts grow and change with experience. One does not learn another person's concept. A pupil therefore develops his own from the subject matter he studies.

The role of the teacher is to classify concepts so that each pupil has a clear mental picture of the ideas being studied. To do this the teacher must first determine how much each pupil understands a concept or concepts; then, he decides on the activities suited to teach the concepts. Based on the information, the teacher can plan the learning experiences that will further develop and expand the meaning of the particular concepts so that the pupils will be able to organize them and show the relationships among them. It is necessary to organize into relationships what has been learned; these relationships are usually stated in terms of generalizations which can be used more readily in new situations.

It takes time to develop in pupils the ability to generalize. The following are the procedures used to arrive at generalizations:

1. Select or develop a generalization on which to focus teaching.
2. Analyze the generalization to identify concepts inherent within it.
3. Determine the content necessary to help pupils understand the concepts in the generalization.
4. Plan many and varied learning experiences to develop understanding.
5. Guide pupils to form the generalization at the most appropriate time.

Generalizations are categorized into three levels:

Level I—a description, a definition, an analogy, an identification, or a classification

Level II—relationships shown among concepts

Level III—an explanation, a justification, an interpretation, a prediction

Generalizations and their substantiation and proof are derived from content. They are abstractions which can be broken down into gradations of complexity and completeness so that they can be understood and mastered to some extent, even by primary grade pupils. As principles or rules, generalizations comprise the underlying structure for each discipline.

Generalizations (1) contain no specific references to any particular people or time, (2) have universal application, and (3) have a thesis, that is, they make a point about the subject.

Concepts are not generalizations; although, concept formation starts with the child's ability to develop a general idea as he goes over his experiences. When the child through the processes of identification and differentiation learns to categorize ideas on the basis of his experiences, then he can say he has learned to develop concepts. Conceptualization or concept formation

is very different from mere verbalization or memorization as the former is properly organized and more profound than the latter. Concepts provide shortcuts which make it possible for the transfer of learning to take place in the mind of the learner as he learns and experiences things.

Here are some useful points to remember in concept formation.

1. Concepts should always be introduced in context rather than in isolation.
2. Pupils should be given opportunity to arrive at their own meaning of the concept prior to guidance and direction from the teacher.
3. In concept formation, pupils should engage in a lot of reading, listening, and writing in order to be exposed to as many situations as possible, leading to the discovery of the accurate and complete meaning of the concepts.

The process of conceptualization is one of the miracles of the human mind. Concept development is a long and wonderful road.

It is the teacher's first job to provide children with rich experiences and the freedom to probe, theorize, and test in all areas of life in order that they may grow up not only well informed but also life-giving and life-protecting members of the human race.

## Approaches to Concept Building

### A. Teaching for Depth

The teacher should do what he can to habituate children to search for feelings and reasons behind human behavior and events, to understand that all behavior is caused, and that the causes are multiple and elusive, and to bring children to the point where they are dissatisfied with oversimplified or hackneyed explanations.

To develop depth in thinking, the teacher should (1) provide a broad background of the unit content, (2) build one background for the pupils, (3) determine which concepts and generalizations to emphasize, (4) consider available books, films, and other materials which can be used to deepen understanding, and (5) formulate questions and problems that challenge thinking and resourcefulness.

### B. Teaching for Conceptual Thinking

The teacher should provide a careful balance between "firsthand" experiences, where many experiences may be built "in action," and verbal experiences, where concepts are extended and carefully defined. Meanings acquired during the actual work period should be "lifted out" and defined during the skill period. In this way children build a wider meaning from an experience because they step back from it, analyze it, and "abstract" from it the meaning which they have built.

An ideal learning laboratory, the classroom environment should make sense to children, carry them a step beyond where they were before, provide varied ways of expressing ideas, verbal, nonverbal, graphic, artistic, or numeral.

The teacher should make effective use of audiovisual materials. The pupils should be required to react creatively to audiovisual materials pre-



sented and not merely to recall their content. For instance, a picture of a farm tractor can evoke different meanings to two persons with different backgrounds. When the teacher presents any pictorial material to the class, he should regard it as an experience suffused with suggestiveness.

The following is a sample lesson plan of activities for developing concepts in the social studies.

### **A LESSON PLAN IN SOCIAL STUDIES FOR GRADE 6**

by Zenaida C. Suavillo, Lakandula Elementary School

Subunit: Wise Use and Conservation of Natural Resources

Theme: Development and progress, then and now

- I. **Major concept:** Economic development and conservation
- II. **Subconcept:** Interaction
- III. **Organizing idea:** Human behavior is developed through group interaction.
- IV. **Generalization:** The wise utilization, conservation, and propagation of natural resources is the responsibility of every citizen.  
Development and proper use of natural resources will greatly promote food production to meet the demand of increasing population.
- V. **Related Idea:** Citizens should know the wise utilization, conservation, and propagation of natural resources to satisfy their present and future needs.

#### **VI. Objectives**

##### **A. General**

At the end of the unit, the child should be able to

1. Recognize the importance of the natural resources of a country
2. Analyze the responsibilities of every good citizen

##### **B. Specific**

1. Cognitive—knowledge and understanding
  - a. Knowledge and understanding
    - (1) Enumerate the importance of the different natural resources
    - (2) Explain the different ways of using water, forest, wildlife, mineral, and fish resources wisely
    - (3) Discuss how our government protects and regulates the proper use of our natural resources
    - (4) Tell how citizens can cooperate with the government and other private agencies in the conservation and propagation of natural resources
    - (5) Give reasons why these different natural resources must be conserved and developed

- b. **Abilities and skills**
  - (1) Locate and utilize books and other reference materials wisely and effectively
  - (2) Interpret intelligently the pictures and other visual materials displayed
  - (3) Identify and state the problems for study
  - (4) Formulate hypotheses
  - (5) Plan carefully before executing to completion a piece of work
  - (6) Gather and organize facts well
  - (7) Interview resource persons
  - (8) Report information gathered with ease and confidence
  - (9) Test, validate, and synthesize the hypotheses
  - (10) Evaluate group and individual activities
  - (11) Formulate concepts and generalizations
  - (12) State one's commitment
- 2. **Affective: attitudes, values, ideals, and appreciation**
  - a. Express concern toward the proper development, utilization, and conservation of our natural resources
  - b. Cooperate in the wide utilization and conservation of natural resources
  - c. Express interest and respect for the laws, ordinances, and regulations covering the use and conservation of natural resources
  - d. Express appreciation for the efforts of the government and other agencies in carrying out programs of developing and conserving the country's different natural resources
  - e. Find pleasure and participate actively in working with others
  - f. Give comments and suggestions politely
- 3. **Psychomotor**
  - a. Gather, trace, or draw pictures illustrating different kinds and ways of using and conserving natural resources
  - b. Construct miniature tools and equipment used in catching fish
  - c. Collect specimens or samples of mineral ores, soil, shells, coral, and the natural products
  - d. Experiment on methods of preserving fish
  - e. Make albums of
    - (1) different kinds of natural resources
    - (2) different scenic resources
  - f. Compile newspaper clippings about wise utilization, conservation, and development of natural resources

## VII. Strategies

- A. Suggested activities and approaches in initiating the unit
1. Structuring the room with pictures and clippings properly labeled
    - a. Kinds of natural resources
      - (1) renewable natural resources (forest, grasslands, fish, wildlife, scenic resources)
      - (2) nonrenewable resources (minerals)
      - (3) human resources
    - b. Ways of utilizing and conserving natural resources
      - (1) loggers cutting down only mature trees in the forest
      - (2) forest rangers engaging in reforestation activities
      - (3) constructing irrigation dams
      - (4) making salt
      - (5) planting in vacant lots
      - (6) beautifying parks
    - c. Improper use of natural resources
      - (1) leaking faucets
      - (2) forest fires
      - (3) fishing with dynamite and fine nets
      - (4) using kaingin system
      - (5) cutting down young trees
      - (6) improper garbage disposal
    - d. Economic map of the Philippines
  2. Discussing the things displayed in the room
  3. Sharing news and personal experiences about foods, forest fires, planting vegetables and trees, raising pigs and poultry, fishing or hunting trips, and different campaigns about wise utilization and conservation of natural resources
  4. Giving the meaning of the following:
    - conservation
    - natural resources
    - silting
    - alloy propagation
  5. Browsing over brochures, pamphlets, magazines, and books
- B. Recognizing, identifying, and defining major and minor problems
1. With the help and guidance of the teacher, the children will state the major and minor problems.
    - a. Major problem
 

How do wise utilization, conservation, and propagation of natural resources help to satisfy the growing needs of a country?
    - b. Minor problems
 

How and why must citizens utilize, conserve, and propagate their natural resources?

**VIII. Developmental Activities**

<i>Inquiry Processes</i>	<i>Suggested Activities and Materials</i>	<i>Data, Concepts, Generalization</i>
Recalling	1. Recalling initiatory activities: Children tell what they know about man's way of using or developing natural resources.	Conservation and propagation of natural resources to satisfy man's present and future needs. The government is building more dams. Natural resources are the land, forests, mines, water, etc.
Recognizing Identifying Stating Defining	2. Recognizing, identifying, stating, and defining the problem. Children state the minor problems.	Conservation is preserving one's resources to prevent decay, loss, destruction, or injury. Propagation is developing or improving one's natural resources. How and why must citizens utilize, conserve, and propagate natural resources?
Hypothesizing	3. Formulating hypotheses	Possible hypotheses 1. Some natural resources are replaceable; others are not. 2. Natural resources are important in satisfying man's present and future needs. 3. The government plays an important role in the conservation and propagation of natural resources to meet the demands of a growing population.
Grouping Planning	4. Interest grouping and planning to test and verify the hypotheses	4. Through education, the people learn the importance of natural resources.

<i>Inquiry Processes</i>	<i>Suggested Activities and Materials</i>	<i>Data, Concepts, Generalization</i>
Gathering data Researching	5. Gathering data a. Reading books, magazines, brochures, and newspaper clippings b. Interviewing resource persons c. Collecting pictures, news clippings, and brochures	5. Man should be aware that natural resources are wasted through ignorance, carelessness, and improper use.  Group I Kinds of natural resources a. renewable resources b. nonrenewable resources c. human resources
Organizing Summarizing Reporting Presenting	6. Organizing and summarizing data 7. Reporting data gathered a. Groups present their projects through movie reels, posters, acrostics, and role playing. b. Class evaluates the reliability and accuracy of the data gathered.	Group II The government's role in the conservation and propagation of natural resources to meet the demands of a growing population  Group III Through education, people learn the importance of natural resources.
Testing	8. Testing the hypotheses a. Checking each hypothesis against the evidence reported and discussed b. Accepting each proven hypothesis	Group IV Waste of natural resources through ignorance, carelessness, and improper use 1. The natural resources of the earth are important in satisfying our needs. 2. Modern men wear out natural resources faster than they did before.
Accepting Rejecting Formulating Conceptualizing	9. Formulating concepts based on the reports and accepted hypotheses	

<i>Inquiry Processes</i>	<i>Suggested Activities and Materials</i>	<i>Data, Concepts, Generalization</i>
		<ol style="list-style-type: none"> <li>3. The citizens of today need to conserve them for future use.</li> <li>4. Our natural resources are grouped into three.               <ol style="list-style-type: none"> <li>a. resources that are renewable (forests, grasslands, fish, and wildlife)</li> <li>b. resources which are destroyed by use (minerals)</li> <li>c. human resources</li> </ol> </li> <li>5. Forest resources may be preserved for future use by               <ol style="list-style-type: none"> <li>a. avoiding the kaingin system</li> <li>b. obeying the laws passed by the government</li> <li>c. practicing reforestation</li> <li>d. preventing forest fires</li> </ol> </li> <li>6. Fish resources can be used wisely and be conserved by               <ol style="list-style-type: none"> <li>a. prohibiting the use of poison and dynamite</li> <li>b. observing close and open seasons in fishing</li> <li>c. obeying the laws passed by the government</li> </ol> </li> <li>7. Wildlife may be conserved by               <ol style="list-style-type: none"> <li>a. avoiding hunting during the mating season of animals</li> </ol> </li> </ol>

<i>Inquiry Processes</i>	<i>Suggested Activities and Materials</i>	<i>Data, Concepts, Generalization</i>
		<ul style="list-style-type: none"> <li>b. setting a bag limit for hunting</li> <li>c. punishing people who violate the laws of conservation of wildlife</li> <li>8. Water resources may be conserved by preventing its pollution and silting and by               <ul style="list-style-type: none"> <li>a. disposing of garbage properly</li> <li>b. preventing indiscriminate cutting of trees</li> </ul> </li> <li>9. Soil resources may be conserved by               <ul style="list-style-type: none"> <li>a. preventing soil erosion</li> <li>b. practicing crop rotation to keep its fertility</li> <li>c. planting hillsides and mountainsides to food crops</li> </ul> </li> <li>10. Mineral resources may be preserved by               <ul style="list-style-type: none"> <li>a. being thrifty with their use</li> <li>b. using metal substitutes and alloys</li> <li>c. employing better methods of mining to prevent cave-ins and different forms of wastes</li> </ul> </li> <li>11. Natural resources are wasted through ignorance, carelessness, and improper use.</li> </ul>

<i>Inquiry Processes</i>	<i>Suggested Activities and Materials</i>	<i>Data, Concepts, Generalization</i>
<p>Formulating Generalizing</p>	<p>10. Formulating the generalizations</p>	<p>12. The government, with the full cooperation of every citizen, will conserve and develop the country's natural resources to meet the demands of a growing population.</p> <p>13. People, the most valuable of resources, are wasted through</p> <ul style="list-style-type: none"> <li>a. accidents</li> <li>b. ignorance</li> <li>c. diseases</li> <li>d. natural calamities</li> <li>e. wars</li> </ul> <p>14. Human resources may be conserved through</p> <ul style="list-style-type: none"> <li>a. promotion of education</li> <li>b. improvement of the people's health</li> <li>c. adoption of safety measures to prevent accidents</li> <li>d. greater food production and preservation</li> <li>e. maintenance of peace and brotherhood</li> </ul> <p>Generalizations:</p> <p>1. The wise utilization, conservation, and propagation of natural resources is the responsibility of every citizen.</p>



<i>Inquiry Processes</i>	<i>Suggested Activities and Materials</i>	<i>Data, Concepts, Generalization</i>
<p>Stating</p>	<p>Stating one's commitment. Children tell how they can help in the effective use of resources.</p>	<ol style="list-style-type: none"> <li>2. Development and proper use of natural resources will greatly promote food production to meet the demands of a growing population.</li> <li>3. The government and the citizens play important complementary roles in the conservation and propagation of natural resources.</li> <li>1. I will repair leaking faucets and broken water pipes.</li> <li>2. I will report to the proper authority leaking fire hydrants.</li> <li>3. I will loosen the soil around plants and apply fertilizer.</li> <li>4. I will cooperate actively in community projects such as               <ol style="list-style-type: none"> <li>a. food campaign</li> <li>b. cleanliness and beautification campaign</li> <li>c. garbage recycling</li> <li>d. flood control programs</li> </ol> </li> </ol>

<i>Inquiry Processes</i>	<i>Suggested Activities and Materials</i>	<i>Data, Concepts, Generalization</i>
Evaluating Thinking	11. Evaluation a. Pupils evaluate their behavior against their self-evaluation checklist. b. Teacher made criterion-referenced test	Criterion-referenced test

### Criterion-referenced Test

*Criterion:* After 14 days on the subunit Wise Conservation of Natural Resources, the grade six pupils should be able to do the following 50 items with 85% to 100% success.

#### Level I

**Objective:** Presented with terms, the child should be able to associate each item with its meaning.

**Instruction:** Below are terms. Write the letter of the item in column B that matches with column A on your answer sheet.

A	B
___ 1. natural resources	a. process of using up until there is none left
___ 2. conservation	b. wise use, preservation, or protection from loss
___ 3. alloy	c. mud or fine earth in standing or running water
___ 4. silt	d. development
___ 5. exhaustion	e. mixture of less valuable metals
	f. water, land, forests, wildlife, minerals

**Level II**

**Objective:** To complete the sentences to form the correct concept asked for.

**Instruction:** Below are incomplete statements. Fill in the blanks to form the correct concepts.

1. \_\_\_\_\_ and \_\_\_\_\_ are resources which are destroyed by use.
  2. \_\_\_\_\_ is the washing away of soil by wind, water, and man.
  3. The \_\_\_\_\_ system is the careless cutting and burning of the trees in the forest to use the land for planting.
  4. \_\_\_\_\_ resources may be conserved by maintaining world peace.
  5. Forests, grasslands, and wildlife are \_\_\_\_\_ resources.
  6. The planting of young trees to replace those cut or uprooted is called \_\_\_\_\_.
  7. Forest wardens are employed by the government to see to it that forest \_\_\_\_\_ are obeyed.
  8. The use of \_\_\_\_\_ and \_\_\_\_\_ in catching fish is not legalized in the Philippines because of their destructiveness.
  9. \_\_\_\_\_ and \_\_\_\_\_ seasons in fishing are observed to give the fish a chance to lay and hatch eggs.
  10. One of the main concerns of our government is the \_\_\_\_\_ and \_\_\_\_\_ of natural resources.
- |               |              |             |          |
|---------------|--------------|-------------|----------|
| reforestation | irrigation   | development | open     |
| kaingin       | conservation | close       | laws     |
| renewable     | planting     | human       | poison   |
| minerals      | erosion      | replaced    | dynamite |

**Level III**

**Objective:** To classify the different kinds of natural resources

**Instruction:** The list below tells about the ways of conserving our natural resources. To what particular natural resource does each refer? Write your answer on your answer sheet.

1. planting trees
2. building dikes and dams
3. using alloy
4. employing wardens
5. practicing crop rotation
6. setting bag limits in hunting
7. practicing reforestation
8. observing close and open seasons
9. saving scrap metal for recycling
10. adopting safety measures to prevent accidents

**Level IV**

**Objective:** To make five inferences from one given situation

**Instruction:** Read the situation below and write five inferences as to what can happen due to the carelessness of people.

Some boys and girls had a picnic in La Mesa Dam. They built a fire under the trees to cook their food. They swam in a nearby pool. They played and sang.

The children were so excited that they forgot to put out the fire. Pretty soon the wind blew hard.

- a.
- b.
- c.
- d.
- e.

**Level V**

**Objective:** To show ability to formulate concepts and generalizations by following practice directions

**Instruction:** Below are directions to be followed accurately to formulate some concepts and generalizations. Do what the directions tell you to do.

A. Complete the following concepts or ideas. Then copy the whole sentence on your answer sheet.

1. \_\_\_\_\_ are the most valuable resources.
2. Soil can be conserved by \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
3. \_\_\_\_\_ resources are also one source of generating electric power.

B. Write the letter of the item in column B that matches with column A.

A	B
___ 1. food production	a. waste and destroy our natural resources
___ 2. natural resources	b. may be used carelessly
___ 3. the government and citizens	c. will feed a fast-growing population
	d. should work hand in hand to conserve and develop our God-given natural resources
	e. must be safeguarded for the benefit of the present and future generations

C. Write your answer to the question to form a generalization.

What will greatly promote food production to meet the demand of a growing population?

**Level VI**

**Objective:** To manifest skill in judging whether the practice is desirable or undesirable

**Instruction:** Below are practices. Write *D* if the practice is desirable and *U* if undesirable.

- \_\_\_\_\_ 1. cutting young trees
- \_\_\_\_\_ 2. closing the faucet tightly after using it
- \_\_\_\_\_ 3. shooting birds for fun
- \_\_\_\_\_ 4. using an irrigation system
- \_\_\_\_\_ 5. repairing worn-out water pipes
- \_\_\_\_\_ 6. catching fish fry
- \_\_\_\_\_ 7. planting vegetables and trees in vacant lots
- \_\_\_\_\_ 8. putting out fire after camping
- \_\_\_\_\_ 9. taking active part in the beautification and clean-up drive
- \_\_\_\_\_ 10. throwing cigarette butts in the forest

**IX. Content Outline****A. What natural resources are**

1. Natural resources are the necessary things that nature has provided for our use.
2. They must be developed, protected, and used wisely.
3. They must be conserved for future use.

**B. Natural resources are grouped into three categories:**

1. *Renewable resources*—resources that can be replaced.  
*Examples:* water resources, forests, grasslands, wildlife, fish, soil resources, scenic resources
2. *Nonrenewable resources*—resources that cannot be replaced.  
*Examples:* minerals
  - a. Metallic minerals—gold, silver, iron, platinum, copper, aluminum, lead, tin, etc.
  - b. Nonmetallic minerals—coal, natural gas, petroleum, potash, salt, precious stones (jade, diamonds, emeralds, sapphires, etc.)
3. *Human resources*—people, the most valuable of resources. We are richer in human resources than Australia, Austria, Portugal, Greece, and Turkey.

**C. Importance of renewable resources**

1. Importance of water.  
Water is used for
  - a. furnishing electricity
  - b. washing clothes, dishes, etc.
  - c. transportation passage for ships, boats, and other watercraft
  - d. cooling and drinking
  - e. growing crops
2. Importance of forests  
Forests
  - a. natural home for birds and animals; give them protection

- b. prevent floods
  - c. lessen the silting of streams
  - d. prevent water erosion
  - e. provide healthful recreation as hunting and camping
  - f. make climate and surrounding pleasant
  - g. source of timber and other forest products
  - h. provide food for birds and wild animals
3. Importance of fish resources
- Fish resources
- a. are sources of food
  - b. are sources of income for the people
  - c. provides balanced life for water plants
4. Importance of soil resources
- Soil resources
- a. provide home for man, plants, and animals
  - b. are sources of mineral resources
  - c. are sources of food for living things
5. Importance of scenic resources
- Scenic resources
- a. give joy and relaxation to man
  - b. provide income to the government and the people

D. How resources may be conserved

1. Renewable resources
- a. How to conserve water
    - (1) Prevent its pollution and silting.
    - (2) Control floods.
    - (3) Develop water power.
    - (4) Regulate underground water supply.
  - b. How to conserve forests
    - (1) Avoid the wasteful kaingin system.
    - (2) Practice reforestation.
    - (3) Employ forest wardens.
    - (4) Obey government laws regarding the method of cutting trees and gathering forest products.
    - (5) Prevent forest fires.
  - c. How to conserve grasslands and wildlife
    - (1) Set bag limits for hunting.
    - (2) There should be no hunting during the mating season of wild animals.
    - (3) Obey laws passed by the government for conserving wildlife.
    - (4) Don't hunt in certain forest areas that the government has set aside as reserved parks and wildlife.
  - d. How to conserve fish resources
    - (1) Observe close and open seasons in fishing.
    - (2) Avoid the use of poison and dynamite.
    - (3) Obey laws passed by the government for regulating and promoting the proper development of fisheries.

- e. How to conserve soil
  - (1) Plant trees in denuded forests.
  - (2) Prevent erosion.
  - (3) Terrace and plant food crops on hillsides and mountainsides.
  - (4) Rebuild soil fertility through crop rotation.
  - (5) Use scientific methods of farming.
- 2. Nonrenewable resources
  - Conserving mineral resources
    - a. Be thrifty with their use.
    - b. Use substitutes such as plastics and other cheaper materials.
    - c. Practice using alloys.
    - d. Employ more scientific and better methods of mining.
    - e. Prevent cave-ins.
    - f. Save scrap metals.
    - g. Find uses for waste products in industries.
- 3. Human resources
  - Conserving human resources
    - a. Promote conservation education.
    - b. Improve people's health.
    - c. Adopt safety measures to prevent accidents.
    - d. Provide more job opportunities.
    - e. Enhance preservation and food production
    - f. Maintain peace and brotherhood.
- E. Public and private agencies promoting conservation and propagation of natural resources
  - 1. Department of Health
  - 2. Bureau of Plant Industry
  - 3. Bureau of Animal Industry
  - 4. Bureau of Forest Development
  - 5. Bureau of Fisheries and Aquatic Resources
  - 6. Bureau of Mines and Geo-Sciences
  - 7. Bureau of Soil Conservation
  - 8. Department of Agriculture and Natural Resources
  - 9. Bureau of Lands
  - 10. Bureau of Agricultural Extension
  - 11. Food Administration Organization
  - 12. World Health Organization
  - 13. United Nations Development Program
- F. Government projects to promote the wise use and conservation of natural resources
  - 1. plant-a-tree program
  - 2. food production program
  - 3. cleanliness and beautification campaign

4. flood control program
5. garbage recycling
6. tourism
7. anti-smoke belching campaign

G. The school and the citizen's role in conservation of natural resources

1. Strictly observe rules and regulations for the prevention of disease and for the safety of human beings.
2. Cooperate with the government and other agencies promoting conservation.
3. Avoid wasteful use of human energy, food, fuel, water, and other resources.
4. Strictly observe laws promoting conservation of forests, water resources, fish, and wildlife.
5. Strictly observe safety practices for the prevention of fire at home and in other places.
6. Plant trees or vegetables in idle lands.
7. Raise pigs or poultry in vacant lots.
8. Observe proper waste and garbage disposal.

## MASTERY LEARNING

Mastery learning as a strategy for optimizing learning considers the individual capacity and needs of the learner. The learner is treated as a unique being. Instruction is individualized within the context of the regular group instruction by means of an ongoing feedback-correction process.

Mastery learning, however, is not new. It is derived from Carleton Washburne's Winnetka Plan, Henry E. Morrison's technique of the 1920s, and programmed instruction of later vintage.

Mastery learning offers a new approach for raising the achievement level of a learner, thereby immunizing him from mental health problems. Mastery learning aims to insure that each student will develop to his maximum potential and thus acquire successful learning experience which will engender self-confidence and ward off mental problems. It proposes strategies whereby each learner's instruction and learning can be managed within the context of an ordinary group based on classroom instruction in order to foster his optimum development.

The basic principles of mastery learning are as follows:

1. The learning unit is broken into its component behaviors or tasks.
2. The learning tasks are properly sequenced.
3. Frequent diagnoses and progress of formative evaluation tests are given on what is taught.
4. Proper correctives are given to overcome group or individual weaknesses revealed by the formative tests.



5. The student is given enough time to attain mastery.
6. Mastery of the learning task is judged on the basis of a predetermined standard which is absolute, for it will be the sole criterion of judging mastery.

### **Procedures in the Application of the Principles**

The procedures may be subdivided into two phases—the preparatory phase and the instructional phase.

#### *Preparatory Phase*

At the start, the teacher should choose a subject area that lends itself effectively to the mastery learning approach. Mastery learning yields the best results in subjects that (1) require minimal prior learning or previous learning which most learners already possess, i.e., mastery learning is more effective for first grade math than for high school algebra, (2) are sequentially learned, and (3) are considered closed since they emphasize convergent rather than divergent thinking. Examples are mathematics and English since their contexts have not changed and is not likely to change for sometime.

The next step is to break down the big unit into small learning tasks and specify the behavioral objectives that have to be attained. To do this, the teacher has to identify the content elements—the terms, the facts, the rules, and the skills, and define the level of learning needed for the mastery of each element. In other words, he has to identify which terms have to be explained, which rules to be mastered, which skills have to be given a lot of practice to achieve mastery, etc.

The teacher then has to determine which content elements at simpler levels are prerequisites to learning at a more complex level so he can prepare the hierarchy of the learning tasks. The learning tasks have to be sequenced. This proper sequencing of learning to be mastered will serve as guide in the effective teaching of the lesson, as well as in the preparation of the formative and summative evaluation tests.

After the preparation of this hierarchy of learning items, the teacher should examine the existing textbooks, workbooks, and reference books to find out which materials may be useful in the development of the specific skills to be developed and to prepare whatever additional exercises may be needed to achieve mastery.

The next very important step is for the teacher to construct brief and simple formative and summative tests, which are both criterion-referenced specifically geared to the specific behavioral objectives of the learning tasks to determine how much the pupils have learned.

#### *Instructional Phase*

After the preparatory phase, the teacher is ready to present the lesson using improved techniques in terms of interesting, challenging presentation, clear-cut explanation, and orderly sequencing of elements to be mastered. In teaching the usual heterogenous group, he should bear in mind the individual differences among the learners; some will be needing more visual aids to

grasp certain abstract ideas than others. Then he should give pupils who need the most help greater active participation and practice.

After the completion of each little learning task, the teacher should give a formative test. The continuous giving of evaluation test is a must in mastery learning, for the feedback on these tests pinpoints to the teacher which items have to be retaught, which are to be reviewed, which are to be drilled on. It also tells him what aspects of his teaching have to be improved as well as the kind of correctives to be given to the learners who met difficulties in mastering the lesson. On the other hand, these tests help the learner identify what skills he has developed and which ones he will have to further work on. Rather than reviewing the whole learning task, the student can focus his attention on the particular items still unmastered.

The formative tests are not to be graded. Some such nongrade remarks, however, as Mastery—okay; Good work; More practice needed; Review rules on . . . , etc., should be used. Such remarks will give those who have attained mastery assurance that they have gained adequacy and that their study habits are effective. At the same time, they give those who have not yet mastered the task pointers on what they should do to correct weaknesses and also encouragement to go on.

The teacher should then interpret the feedback and provide the learners who need help the clearest and most appropriate instructional cues, practice, and reinforcement before they proceed to the next learning task. There are different kinds of corrective devices that may be used. The best is the so-called *small group problem* sessions. The students needing help may be divided into small groups of five or more. Pupils who have mastered the learning task may be given more difficult materials to work on, or they may be assigned to the groups to act as tutors and help their classmates.

Another way of grouping is the so-called *diversified group*. Four or five pupils with very different learning strengths and weaknesses are put together in one group. In this kind of grouping, each child is given a chance to teach and to be taught by others of his own age. Arrangements should be made so that these groups can meet regularly to review their formative test results and to work cooperatively in overcoming each other's difficulties.



A way of providing the much needed time for mastery is to assign the reinforcement drill exercises as homework of the pupil. Parent and elder brother or sister can give the learner some assistance or tutoring (if necessary). The assignment of homework activities focused on actual needs for mastery is an important phase of mastery learning.

Other alternative learning corrective devices are rereading of particular pages of the textbooks, studying specific explanations in other textbooks that present the same lesson in a clearer way, and using workbooks, programmed instructional materials, or audiovisual aids.

Upon the completion of the unit, the teacher should give summative evaluation. If proper correctives were given, results of the summative evaluation show 75% to 95% mastery of the unit.

### **Types of Evaluation in Mastery Learning**

Adoption of mastery learning strategies will mean the use of at least three types of evaluation: (1) the diagnostic evaluation, (2) the formative evaluation, and (3) the summative evaluation.

The general objective of the *diagnostic evaluation* is to place the child in the proper step in the instructional sequence. It determines the extent to which each child possesses entry behaviors requisite to the attainment of the objective(s) of the common unit. The diagnostic evaluation may be oral or written tests. The results of the tests will enable the teacher to know whether the child, the group, or the whole class is in the right place to start the lesson. Should the test reveal that the pupils have achieved the proficiency standard, the teacher starts the new lesson. If the results show otherwise, it will be necessary to establish the necessary entry behaviors needed before proceeding to the new lesson.

The *formative evaluation* is a constant on-going activity that provides information necessary for directing subsequent or corrective teaching and learning. It serves to identify unmastered learning areas early enough to permit their correction before the grading evaluation. It is formative in the sense that it is utilized to indicate how students are changing with respect to their attainment of the instructional goal. It seeks to identify learning weaknesses prior to the completion of instruction on a course segment, a unit, a chapter, or a lesson. In keeping with its aim, formative evaluation should be frequent and brief.

The *summative evaluation* is the end of instruction evaluation, given primarily to grade the learner's achievement. It provides information about how the learner has changed with respect to the aims. Summative evaluation also utilizes criterion-referenced measures; however, in a summative test, only a subset of materials or a sample of materials covered is included in the test. Summative evaluation assures the learner's achievement at the end of the learning-teaching program; thus it cannot guide the processes. It furnishes information about how the learner has changed, and it monitors the terminal behavior.

The following is a sample instructional procedure illustrating mastery learning strategies.

**A SAMPLE INSTRUCTIONAL PROCEDURE IN  
ELEMENTARY MATHEMATICS FOR GRADE 6  
ILLUSTRATING  
MASTERY LEARNING STRATEGIES**

**1. Learning Task**

Adding 3 to 4 addends with broken columns, with regrouping from ones to tens and from hundreds to thousands

**1.1 Subtasks**

- 1.1.1 Writing addends in column form
- 1.1.2 Adding with regrouping
- 1.1.3 Using the commutative property to check the sum
- 1.1.4 Solving verbal problems

**2. Instructional Procedure Suggested by the Analysis**

**2.1 Entry Behavior (Assessment of background knowledge to undertake the study of the learning task)**

**2.1.1 Identifies the place value of a digit in a given numeral**  
Tell the place value of 3 in each of the following numerals:

- a. 2431
- b. 3185
- c. 593
- d. 36,971
- e. 4,301

**2.1.2 Writes the digits of a numeral under the proper columns**

Read each of the following numerals and write the digits under the correct place value column in the grid.

- a. 34
- b. 568
- c. 8
- d. 36,471
- e. 2,905

	100,000s	10,000s	1,000s	100s	10s	1s
a.					3	4
b.				5	6	8
c.						8
d.				3	6	1
e.			2	9	0	5

## 2.2 Enroute Behavior

### 2.2.1 Explores and discovers through problem solving

In the month of July, an NFA retailer distributed 1,515 sacks of rice on the first week and 504 sacks in the second.

### 2.2.2 Abstracts, organizes, and generalizes

To add 3 to 4 addends with broken columns

- write the addends in proper columns
- add the ones, the tens, the hundreds, etc.
- regroup only if needed
- check the sum using the commutative property

### 2.2.3 Fixes the skill (formative evaluation)

Fill each blank with the letter of the correct answer in the parentheses.

- In the number sentence,  $347 + 1703 + 8 = 2058$ , there are \_\_\_\_ ones.  
(a. 8, b. 18, c. 28, d. 38)
- In the above number sentence, regrouping takes place in the \_\_\_\_.  
(a. ones and tens places, b. ones place only, c. ones and hundreds places, d. tens and thousands places)
- Find the replacement for each variable.
  - $7 + 52 + 1306 + 125 = n$
  - $37 + 9 + 303 + 2144 = p$
  - $3020 + 8 + 112 + 21 = x$

### 2.2.4 Solves verbal problems

### 2.2.5 Corrective measures

Possible causes of failure

- wrong placement of digits in place value column
- regrouping in column even if not needed
- failure to check the sums

#### 2.2.5.1 Corrective 1

Arrange the addends in the grid and find the sum.

	10,000	1,000	100	10	1
46					
307					
24					
Total					

2.2.5.2 Corrective 2

Bright pupils tutor their weak classmates. Teacher extends help to individual pupils by

- a. clarifying weaknesses
- b. providing needed seatwork exercises
- c. giving differentiated assignments

2.3 Terminal Behavior (Summative Evaluation) Criterion-Referenced Test

Instructional Objective

At the end of the two thirty-minute lesson on addition of 3 to 4 addends with broken columns and with regrouping from ones to tens and from hundreds to thousands, the grade six pupil should be able to do the following with 80% success:

1-3 Write addends in column form

Add and regroup only if needed. Check the sum using the commutative property.

4-5 Solve verbal problems

TABLE OF SPECIFICATIONS

DOMAIN: ADDITION OF WHOLE NUMBERS  
GRADE 6

<i>Subtasks</i>	<i>Terms</i>	<i>Facts</i>	<i>Rules and Principles</i>	<i>Processes</i>	<i>Trans-lations</i>	<i>Appli-cations</i>	<i>Total</i>
1. Writing the addends in column form							
2. Adding and regrouping, if needed							
3. Using the commutative property to check the sum							
4. Solving verbal problems							
<b>TOTAL</b>							

Items 1-3

Write in proper columns and add. Check your sums.

- |    |       |       |       |        |    |   |
|----|-------|-------|-------|--------|----|---|
| 1. | 213   | 7     | 1,403 | ?      |    |   |
| 2. | 2,542 | 27    | 503   | ?      |    |   |
| 3. | 625   | 3,426 | 128   | 83,807 | 10 | ? |

**Items 4-3**

Solve the following problems:

4. Mr. Jose Cruz, a real estate agent, sold the following lots in the city of Kalookan: 102 square metres, 66 square metres, 915 square metres, and 2,112 square metres. Find the total number of square metres of land Mr. Cruz sold.
5. Aside from producing rice, Mr. de Castro dries copra for sale. For the first quarter of 1988 he sold 1,097 kilos, 740 kilos for the second quarter, 921 kilos for the third quarter, and 1,301 kilos for the last quarter. How many kilos of copra were sold by Mr. de Castro in 1988?

## PROGRAMMED INSTRUCTION

In recent years, increasing attention has been paid to programmed instruction. Although this form of instruction is considered as one of the newer developments in education, an analysis of the procedure involved will reveal that there is nothing new in principle, but only in application. It is based on the old psychological learning principle of conditioning.

The word *program* refers to a planned learning pattern, which is presented to the pupils in a sequential manner. Programmed instruction is a technique of self-instruction. Lessons are given in small segments which require the learners to answer each bit in the learning module before going to the next learning task. This automatic tutor helps the pupils to work out the exercises in a program through suggestions, cueing, or hinting until the latter arrive at the desired answers. The learners are provided opportunities to demonstrate their understanding of or their skill in the work at hand through the presentation of instructional tasks that are graduated in difficulty. If the pupil is successful in the first presented task, he goes to the next sequence of the learning response pattern; if he makes mistakes, he either restudies the lessons through self-discovery or he is given personalized instruction by the teacher before he proceeds to the next learning pattern. The stimulus to the learning of the pupils lies in the immediate knowledge of the results of efforts exerted. This psychological feedback helps significantly in aiding the pupils to overcome their difficulties in the task on hand. Each learner proceeds at his own rate of progress.

Although programmed instruction takes many forms, all of them are characteristically the same. It is the method of presenting materials to be learned step by step. Each step is repeated and practiced so that the learner understands the step thoroughly before he goes to the next step. This procedure helps the student to understand whether he is right or wrong. The learner always starts with simple ideas or lessons and works on to more complex ones.

The technique of planning the material for use in this type of teaching is called *programming*, and the end-product of the planned material is called

*programmed instructional material* (Alcorn 1970). There are two basic types of programmed instructional devices—the *teaching machines* and the *programmed textbook*. Programmed instructional devices are referred to as self-instructional aid to learning or autoinstructional materials.

The teaching machine is a mechanical device which presents the learning material to the pupil, tests him on his mastery of this material, and provides for the immediate correction of his wrong responses. The mechanism of this machine and the arrangement of the programmed material require the pupil to master first the material already presented before he can proceed to the next one.

The programmed textbook presents the programmed exercises not through a machine but by requiring the pupil to read a specially prepared book. In the programmed textbook, the pupil is required to perform the steps of a learning experience all at the same time: (1) presentation, (2) response, and (3) reinforcement.

The following sound principles of learning are best illustrated in the use of programmed instruction:

1. Learning is best practiced by doing.
2. Learning is best facilitated through the psychological feedback afforded the learner.
3. Learning experiences provide many opportunities for the learners to progress at their own rate.
4. Learning experiences simulate the learner's immediate environment; hence, carry over of learning experiences from the school to the home is assured.
5. Learning situations being utilized provide for the needs of both the slow and fast learners. Consequently, less frustrations are experienced particularly by the slow learners who are given chances to beat their own records. Proponents of programmed instruction claim the following advantages for programmed learning:
  - a. Students take increased responsibility for their learning.
  - b. Knowledge is being generated so fast that new techniques for teaching are imperative.
  - c. People learn only when they master skills and ideas step by step.
  - d. Step mastering provides a built-in reinforcement of learning; the learner has a constant knowledge of whether he is right or wrong, and programs can be graded so that only the correct amount of repetition is provided.
  - e. The constant feedback from the machines or the programs provides high incentive.
  - f. More content is covered in a given amount of time and covered better than by conventional methods.
  - g. Students have, in effect, individual tutors.
  - h. There is no cheating.
  - i. Expensive machines are not necessary. Inexpensive devices, simulated machines, and "programmed" books are satisfactory.
  - j. Machines do not dictate educational programs.



- k. Programmed learning techniques take much of the drudgery out of teaching. The teacher becomes a "teaching engineer" concerned with the teaching process and students, and less a slave to routine.
- l. Neither teachers nor books will be replaced. Teachers are still necessary; it is only that their work is redirected. Books of all types will unquestionably still be important.
- m. Creativity is promoted because teachers, freed from routine, will have time to encourage and stimulate students.
- n. The use of programmed learning materials will encourage "team teaching," and the idea of programmed learning is well geared to individual-small-group-large-group instruction.
- o. Programmed learning classrooms allow all pupils to participate actively at all times.

These advantages claimed by the proponents of programmed instruction have not been fully accepted by all. There are still a number of people who believe that further experimentation has yet to prove its educational values. For instance, the following questions have been raised by those who are skeptical of this type of instruction: Will programmed learning which is broken into small fragments come together into generalizations and integrated systems of information? Will programs of this type promote a class system in education? Can this type of learning provide long-term sustained challenges to the teacher? Does this type of learning contribute anything to the handling of the program of individual differences? Are not the costs too high?

### Improved Instructional Practices

These questions have been raised because some feel that programmed instruction is limited to learning materials where there is a right answer. It cannot ask questions to which original different answers are correct. It cannot ask "What do you think and why?" questions. Also these critics feel that when the cost of teaching machines and programmed textbooks is considered, particularly the cost of selected response machines, there seems to be very little justification for their use in schools.

Whether programmed instructional devices will find their definite place in the field of education and finally stay is still a question. If eventually, teaching potentialities of these materials are well established, the teacher can bear these three points in mind: (1) that it cannot replace the teacher, (2) that the teacher cannot be turned into a mere mechanic, and (3) that the larger usefulness of these materials will be found in coordination, not replacement, of other materials and methods.

Contrary to what the skeptics believe, programmed instruction saves time in assisting the learners to accomplish the minimum requirement for each grade or year level. The pupils do not have time to dawdle on the lessons either, since these automatic devices hold them to a certain task on hand until they are able to make correct responses to the questions and exercises on the

slot in the machine. Even cheating is ruled out in this learning scheme since frequent tests are given which provide the necessary mastery of the lesson covered for a period of time.

On the whole, programmed instructions prove helpful to the teachers particularly in diagnosing a pupil's difficulties for needed remedial teaching, in providing practice and drill exercises, and in the enrichment of the total teaching-learning processes.

To date, programmed instruction is used as a part of an array of teaching methods and approaches either to supplement and/or complement the daily lessons. This is because, except in the elementary skill subjects, it is still rare to find a completely self-contained teaching program.

## TEAM TEACHING

As an innovative approach or pattern of organization, team teaching is relatively new. While there are semblances of the pattern in some school systems, it may be safely said that its recognition and identification as a definite approach is very recent. There have been a lot of speculation as to its efficacy and feasibility, but a review of literature on the subject seems to show a preponderance for its adoption and acceptance. This chapter will present the advantages and limitations of the approach as well as the different patterns followed in many schools in England and in the United States.

### What Is Team Teaching?

Team teaching is an approach that involves two or more teachers who work cooperatively with the same group of students for some period of time. Hence, many teachers and school administrators claim that team teaching is nothing new. As a matter of fact, they claim they have been doing it for years. Teachers have been allowed to exchange classes or to exchange teaching tasks; they have combined their classes with those of others in specific subjects such as music, dramatic performances, athletics, and allied activities; the older teachers in a school voluntarily assist a new teacher or the latter requests assistance from the other.

At best, three or more teachers should be involved in planning actual work with children and in evaluation. All team members should participate in the formulation of objectives for the total program, in the planning of daily activities, in teaching functions, and in periodic evaluation of the entire program. It is a novel way of organizing the teaching staff, curriculum, and space. Instead of putting, say 12 teachers in charge of from 30 to 40 students, the teachers can be regrouped into three teams. Each team pools its talents and resources together to plan the curriculum, the lessons, and even evaluation procedures. Each team takes responsibility for 150 to 200 students. Each teacher teaches the subject in which he has specialized, thus giving the students the best possible instruction in all areas. No fixed pattern for teams has yet been evolved.

The discussion, planning, and blending of ideas can surely vitalize the instructional program and give the curriculum increased breadth and depth. There is team teaching in the school if the teachers are formally organized as a team which is duly recognized by the school system. Each of these teachers has his own definite responsibilities and area of specialization.

### **Rationale of Adopting Team Teaching**

Those who advocate team teaching give the following advantages:

1. It allows the more competent teachers to assume leadership in the team. Teachers are encouraged and stimulated to specialize in those aspects of a course for which they are best qualified.
2. Teachers are stimulated to do better teaching through close association with other members of the team, through discussion and working out problems with their colleagues.
3. Students benefit from exposure to a variety of points of view and teacher personalities.
4. Teaching techniques that require more elaborate preparation and administration like films and transparencies can be utilized better because more time is given the teachers for advance preparation and planning.
5. The teacher is freed from routine tasks especially when nonprofessional assistants are employed to take care of roll call, correction of papers, grading, etc. The teacher's time can be devoted to more productive pursuits like curriculum revision or planning for the day's lesson.
6. Team teaching is applicable to every discipline. It is an excellent set-up for interdisciplinary combination.
7. It is suitable to almost any kind of situation, whatever the school level, size of school, subject area, student ability, and type of teacher. Pattern and procedures of team teaching can be made successful at every school level—elementary, secondary, collegiate, and graduate.

Several limitations of team teaching, however, can be mentioned, but most of them can be overcome. The first of this pertains to time. Planning, recording, and evaluating need time, and teachers have to put in extra time for projects. A second limitation concerns space and facilities. The program needs lecture and seminar rooms, overhead projectors, sound system, larger space for projects. Obviously, this will create greater demands on the budget of the school.

Third, the young, inexperienced teacher may run the risk of being swept along on the ideas and experiences of others. He is not given enough time to learn from his mistakes, to try out his own ideas. As for the learned leader, he may develop a superiority complex which will isolate him from his colleagues. Some teachers, too, will not be too willing to subject themselves to peer scrutiny. All of the above limitations can be overlooked when outcomes are reckoned in terms of improvement of the quality of teaching, greater excitement in teaching, and development of social skills for both teachers and pupils.

Critics of the approach caution against the hasty adoption of team teaching. They claim that it would not be easy to sell the idea to teachers who have been so used to the old setup. It is difficult to select teachers who will compose the team. Scheduling of classes and activities will not be easy. Instructional space will not always be available and problems arising from staff relationships are likely to appear.

However, exponents of the approach believe that such difficulties can be overcome. The important point is to get the staff to cooperate. Mature adults can organize and work together as a team. Team teaching relieves the teacher of some teaching chores and gives him added responsibility and prestige. It is believed that when teachers work as a group, when their professional talents are utilized to the fullest extent toward the achievement of specific goals, the accomplishment of the group will be greater than the sum total of the individual talents of the teachers working with their own pupils in their self-contained classrooms in almost complete isolation from the rest of the teachers and pupils of the entire school.

### **Patterns of Team Teaching**

Team teaching, which concept actually took shape in the United States, has several patterns. These patterns have been adopted in the secondary schools in the United States, and they are cited as examples or patterns of team teaching.

#### *Example 1*

This team is composed of two teachers and a paraprofessional, working with about 80 sixth-grade pupils. One of the teachers has a strong background in English, social studies, and music; the other is strong in science and mathematics. The paraprofessional has some commercial art experience.

The teachers carry out their tasks in an atmosphere acceptable to proponents of the self-contained classroom but with the additional advantage of control and adjustability of groups and activities. They are able to subgroup pupils for remedial and advanced work in the various subject areas. They can have subgroups of almost any size and, on occasion, find it appropriate to work with all 80 pupils at the same time. They have access to a cafeteria for large group work and two regular classrooms for smaller groups.

#### *Example 2*

Two teachers are assigned to a beginners' typewriting class of about 80 students. They have little clerical help. Students meet as a whole group daily in a double-size room that is equipped with a sound system, screen, overhead projector, controlled reader, tape recorder, and record player. Both teachers are responsible for a share of large group presentations and demonstration. While one conducts a lecture, the other helps students at their desks. The class is divided into three performance levels, and suitable activities are provided for each.

*Example 3*

Four teachers and one paraprofessional have approximately 130 first year students in English. They do much of their work in pairs, but they have common preparation and planning periods. Usually the students meet once a week as a whole group, twice in groups of 65, and one day each in groups of 30 and 15. The patterns can be changed at any time. The large group is for lectures by one of the team or by guest speakers, panel discussions, examinations, and similar activities; in the groups of 65, the students have recitation discussions or study; the groups of 30 are primarily for recitation discussion; and the groups of 15 are used for pupil-directed seminars.

A regular lecture room is available for the largest group, and double-size rooms for the groups of 65. Folding partitions divide these double-regular classrooms. In addition, the team has access to a seminar room and a team office. On occasion, this team groups the pupils by ability and interest for specific units. The paraprofessional does all the recording of grades and pupil accounting; she also helps in supervising small groups of students and assists them with projects.

*Example 4*

Two industrial arts teachers combine their schedules, working as a team during the shop laboratory periods three times a week and conducting individual classes the rest of the week. Their subjects are Metals and General Shop for first year students.

The team was created originally to alleviate equipment problems. They have joint responsibility for approximately 45 students per period. When the pupils are working on individual projects, both teachers are available to give assistance, but at other times, one teacher works on plans and preparations. Teaching which is specific to the two subjects is handled in separate groups.

*Example 5*

This team consists of three teachers and a clerk assigned to plane geometry classes of 85 pupils. They use two regular classrooms and a cafeteria equipped with chalkboard and audiovisual facilities. The large group of 85 assembles for such activities as the introduction of new material, clarifying lectures, and enrichment and evaluation. Smaller groups of various sizes are used for discussion, laboratory work, and homogenous grouping.

In the early part of the school year, more time is devoted to large group activities where the primary responsibility is on the teacher. As the year progresses, more and more use is made of small groups and independent study. Toward the end of the year, there may be a large group session only once every week or two, and the rest of the time is devoted to individualized study. The more capable students are permitted to study independently with little or no supervision. By arrangement, some

of them work as tutors to students who are having difficulty. Thus, this team provides a range of activities from remedial to advanced study within the framework of one class.



### *Example 6*

This team combines social studies and guidance. The group is composed of eight social studies teachers, two of whom are also counselors. A clerk is assigned to assist the team.

The setup provides two large world history groups scheduled daily with a guidance period between them. The actual time covered by these activities, then, is a 55-minute regular period, 5-minute passing period, and another 55-minute regular period.

There are many other possibilities for adjusting groups and time allotments. On a given day, the first world history group may meet for 90 minutes, and then the second meets for 55 minutes. The following day, this can be reversed. With the appropriate assignment of teachers, the size of the groups of students can vary from 20 to 120. On occasion, the entire group of 240 students meet for 30 minutes to engage in activities related to guidance or social studies. In actual practice, the equivalent of two periods a week is usually devoted to groups of 120 to 240, and the other two periods to small groups for independent study. It is apparent that this arrangement allows for much flexibility in the use of time, groupings of different sizes, and the work of the staff. In addition to the advantages for social studies, group guidance is facilitated in much the same way.

In the discussion, two general types or approaches have been mentioned: the teacher unit specialist and the differentiated role specialist.

Under the teacher unit specialist approach, teachers are allowed to become experts on certain phases or units of their course. Classes are scheduled in such a way that this teacher specialist is able to teach his specialty to each of the various sections. To do this, sections may be combined for large group instruction, or the teacher may move from one section to another to teach his specialization.

In the differentiated role specialist team approach, teacher specialization is in the technique, not in unit content. Classes are scheduled to suit the techniques employed. Classes are combined and meet for periods longer than usual to allow specialists to present their lectures. Discus-

sions are then held, but later the large group is divided into small discussion groups conducted by instructors to intensify and follow up on the lesson just lectured on. This small group discussion sessions are followed by independent study. The students do project work, reading, drill and practice, etc. Where facilities of the school permit, the individual study portion of the team teaching plan is supplemented by learning laboratories where students work on programmed material and where students make use of teaching machines, projectors, listening booths, and the like.

Other patterns suggested are the coordinate pattern and the associate pattern. The coordinate pattern has the regular classroom as the basic unit, but from time to time several classes are combined for special lessons or techniques. The associate pattern utilizes the large class as the organizational unit. This class is under the direction of a team of teachers as a whole. The group is subdivided periodically for separate in-depth study.

The Division of City Schools, Manila, has come up with "tandem teaching," a happy medium between the self-contained classroom and the large-teaching group of five to seven teachers. Two teachers who have similar educational philosophies and attitudes toward students can work as a tandem to give students a more specialized, stimulating, and enriched program than could individual teachers in a self-contained classroom. A class can be divided into two groups of fast learners and slow learners. Each group can be handled by each member of the team thus providing the students with a more enriched and challenging program for the fast learners and remedial measures for the slow learners. Other plans of organization can be planned to suit other classroom situations.

### Organization of a Team Teaching Program

A good team teaching program requires tapping available human resources, careful planning and preparation, and evaluation. M. Delbert Loob, in his book *Practical Aspects of Team Teaching* (1964), gives an adequate discussion of the interplay of such factors.

*Personnel.* Personnel needed can be classified into professionals, auxiliary personnel, and resource persons. *Professionals* include the master teacher, teacher specialist, and regular teachers. A master teacher is a certified educator who has much advanced training and a broad, intensive grasp of his subject and related discipline. He must also be backed up by adequate experiential know-how that equips him to do a superior job in teaching.

The teacher specialist is a professional who has attained a high degree of competence in a particular field or area. He may be highly trained in one aspect of a particular subject like, for instance, one who is an excellent dramatic coach. He may be an expert at group dynamics or he may have a very good background in using certain teaching devices.

Regular teachers constitute the bulk of the teaching staff. They are generally qualified to do their professional jobs.

*Team leader* is the term given to the recognized head of the team. He assumes additional responsibility, gives greater time to the team, and more of his talent is involved. ●

*Auxiliary personnel* includes persons who may be categorized as paraprofessionals, instruction assistants, interns, secretaries, clerks, teacher aides, community consultants, and student consultants. A paraprofessional has academic training but does not have a teaching certificate. He can take care of planning and preparing tests and instructional materials, correcting tests, grading homework, doing research for reports, and other related tasks.

An instruction assistant is a noncertified employee with special skills and training that will enable him to give high-level aid to teachers. For example, one may correct themes for the English team, an artist may help in making visual aids, or a technician may operate language laboratories.

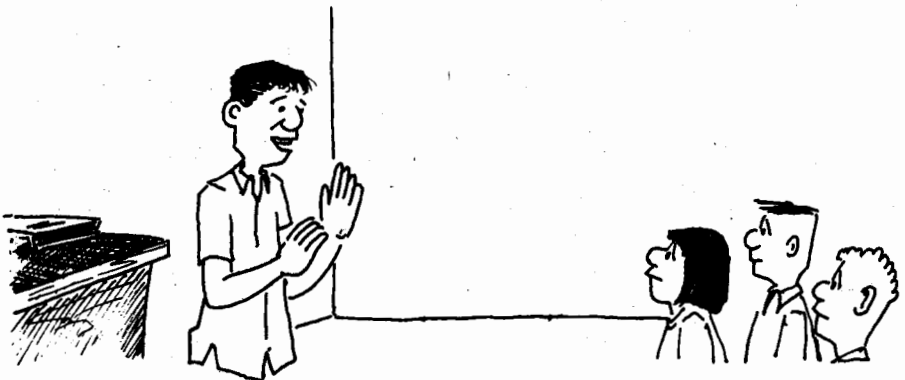
The intern is a candidate for a teaching certificate. He is a college graduate completing additional requirements for acceptance into the teaching profession. Although he teaches, he is under the supervision of professional members of the team.

The team secretary must have a good background in business education and secretarial education. Some of the duties of a secretary are keeping records for classes, assisting in grading, ordering, storing, and distributing books, typing, receiving phone calls, etc. The team clerk performs routine clerical duties associated with teaching.

The teacher aide is one without any particular skill or training who relieves the teacher of such jobs as supervising the lunchroom or the playground or tending to the storage room of the science department. Usually, housewives who have some time to spare are engaged as teacher aides.

A community consultant is a layman who renders such services as locating and securing resources for the use of the team. For instance, an electronics engineer can provide access to electronic materials. A community leader may help support some of the projects of the team.

The student consultant may be a member of the class or from a higher grade. He has special talents useful to the team. He can act as a laboratory assistant or he can take transparencies for the team. He may do research work or tutor some of the students.





*Resource personnel* includes all others who are called upon on any occasion to enrich the learning experiences of the students. The administrative staff, counselor, school nurses, and secretarial staff fall under this category.

Student resources include contributions which other members of the student body can make to the class function. Every student has a joint responsibility to himself and to society; hence, while he is gaining his own education, he has some obligation to add whatever he can to the general level of performance within the school.

Community resource persons come from industrial and business sectors of the community. They can help in supplying the much needed information for any project of the school.

## Planning and Preparation

Planning for team teaching includes such basic elements as determination of goals, planning of activities to carry out the objectives, execution of the plans, and evaluation.

The team must have control of such factors as allocation of teachers and pupils, time and space variables, and professional capacities. The following steps can be followed for guidance in setting up a team teaching program.

1. *Preliminary determination of objectives and guidelines.* Major issues should be resolved, solutions discovered and tested. The overall plan for the year must be agreed upon. It will be advisable to formulate a curriculum guide which will include brief but precise description of the plans. Time allotment for the entire year should be determined.
2. *Division of the year's work into manageable units or phases.* Each unit is outlined into subunits, general content, possible procedures and resources, and tentative staff assignments.

It is recommended that the team have at hand four to six weeks of fully developed daily plans. Before the opening of schools, the teaching team should polish up the first units. Daily plans should include room facilities, teacher assignment, curriculum content activities, resources, and provisions for changes in each plan.

A master plan must be evolved which should be readily available in booklet form or a chart which can be placed on the wall or on the chalkboard.

3. *Preparation for teaching.* Academic preparation includes research on each unit to make the content as rich as possible. The richer the content, the more the needs and interests of the individual pupils are met.

Preparation also includes analysis of the student's needs and interests in relation to the unit and the daily lesson as well as deciding on the kind of motivation to use and the devices that will be needed. Another important aspect of preparation should be devoted to selection, collection, and arrangement of audiovisual materials. Textbooks, supplementary materials, lesson guides, bibliographies, preparation and location of slides and transparencies, preparation of tests should form part of getting ready for teaching. People who will

be involved should be notified and all aspects should be followed through. All preparations should be complete before the actual teaching-learning situation takes place.

4. *Actual teaching.* This process involves the teaching procedure itself. A few reminders at this point are in order: As much as possible, teaching must be carried on in large groups. Demonstration lessons, reporting, viewing films, examinations, and reading are among the activities suited to large-group teaching. However, self-directing activities such as research, independent study, creative work, review, practice, programmed lessons, laboratory work, etc., are also in order.

Flexibility of groups within a team is encouraged. For example, an arrangement like the following can be followed:

- a. First week—one large group to introduce a unit and four small groups for discussion.
  - b. Second week—five large groups for lecture, audiovisual aids, and study.
  - c. Third week—four intermediate groups for recitation discussion and one small group for follow-up.
  - d. Fourth week—two intermediate groups for recitation discussion, one small group for follow-up, and two independent study periods for research
5. *Evaluation.* Two facets of evaluation are included in this process—assignment of the educational development of pupils and of the program.

The usual evaluation procedures of testing and grading procedures are used in team teaching; however, the manner of evaluation and system of grading should be agreed upon before the opening of school. Assessment of the program deals with effectiveness of teaching. Objective and scientific methods are utilized. Changes in behavior, attitudes, skills, and knowledge are measured and evaluated. The team employs continuous self-evaluation. Most evaluation done at the end of experimental projects on team teaching report that improvement of instruction had been accomplished through more efficient use of the staff. Better preparation of materials, use of audiovisual aids, use of community resources, variety of instructional and motivational techniques were all evident. The efficiency of team teaching can be summed up by the remark of an eleven-year-old girl who told her father that team teaching made her work harder and that school was more fun than it used to be.

The foregoing discussion on team teaching gives the teacher different ways of teaching-learning situations. He may select any model that best suits the situation in his school. All of the examples discussed earlier can be adapted and applied in Philippine classroom. The models can be modified. The idea is based on the belief that two heads are better than one. Two teachers can handle problems of the classroom better than if they did it alone. It will not be

easy to deviate from the usual ways of teaching, but the results will be well worth the effort of trying innovative techniques or approaches of teaching. It is hoped that more teachers especially the young ones will try to use any of the models presented in team teaching.

## SIMULATION

Simulation is a miniature representation of a large-scale system or process. It involves the use of replicas in phased sequences; it requires active manipulation and operation of models rather than simply using pictorial representations. It is, therefore, dynamic rather than static.

Broadly speaking, all simulations are role playing to a certain degree, as all simulations involve some acting out of roles. However, in simulation, the individual plays himself in a situation, whereas in role playing, he performs what he interprets to be the demand of the role. Simulation tends to formalize various aspects of the system the students represent. They concentrate more in the process by which decisions are taken. Simulation requires the participants to engage more in the dynamic interaction of the system and expects less of him playing the role of a particular person or position.

The highlighting of the process factors, the deemphasizing of role playing, and the formalizing of program for the conduct of the simulation constitute the distinguishing characteristic of the new developments in simulations.

Simulation is a teaching technique that makes participants/learners more explicit about what they are doing, seeing, or learning. Learners are made to interpret their activities in terms of "principles" and "concepts" discussed in their course materials.

Learners, through a given model of teaching, are exposed to thinking of a higher level and given a substantial portion of decision-making experiences on critical incidents.

Simulated materials require the teachers to structure a situation, simulating the process found in a particular concept in a subject matter area. The class is grouped in such a way that each group does an activity. These activities are not played as roles but as actions and reactions to the situation presented. The students/pupils are guided to see the analogy between what the group is doing and the concept being developed. Analogies help the learners see valuable parallels between the simulated games and the problems of contemporary nations. The simulated game provides the necessary insights into the whys of the behavior of leaders and decision makers. These insights may never be effectively acquired better than in a simulation game where the participants themselves are involved and dynamically react to specified conditions. In such simulated games, the learner's interest and performance are kept at a high pitch all throughout the game. As time is compressed in a simulation game, a closure is attained.

The impact of simulation is reflected in the learners' command of the principles and of the acquisition of discrete factual information relevant to the inquiry.

## THE MODULE

A module is a self-learning kit which usually consists of a package of learning activities, usually papers, that have to be accomplished by the student. Modules may be used as part of a course, as a complete course, or as a curriculum design. The essential parts of a module are

1. statement of purpose or rationale of the module
2. the pretest, which may show how prepared or unprepared the student is for the module
3. the objectives, which state what the student is expected to know, do, or feel after accomplishing the module
4. the instructional activities, which serve as "study guide" and which may enable the student to meet the objectives, if done
5. the posttest, which measures what students have acquired from the module or if they have mastered the objectives

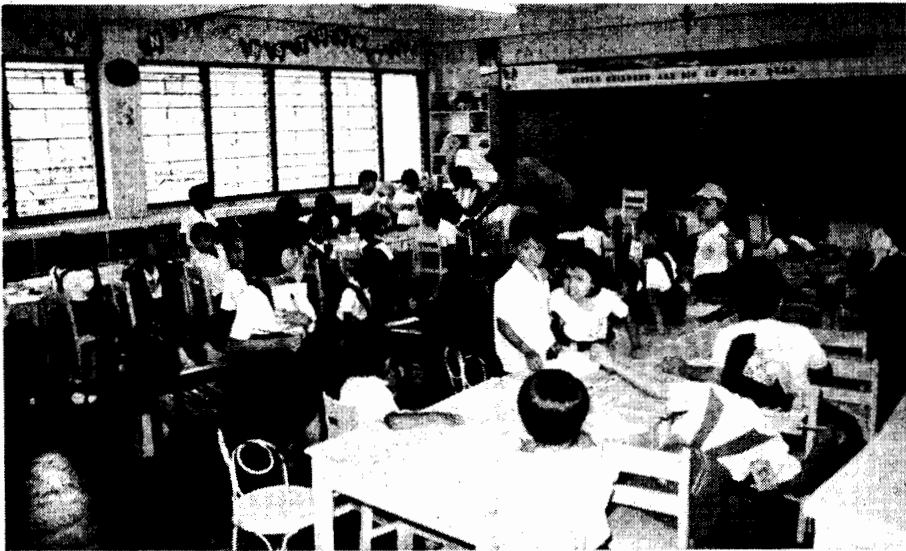
Modules have many advantages for teachers and students. For students, these are the following:

1. They work at their own pace.
2. They assume responsibility for learning.
3. They find that textbooks are not the only source of learning.
4. They know exactly what they have to learn.
5. They are encouraged to master the module.
6. Competition for grades is reduced.

For teachers, the advantages are the following:

1. They have time to pay attention to individual learning problems.
2. They can identify problems earlier.
3. They are free to serve as resource persons, to answer questions, and to help those who need help.
4. There is better cooperation between teacher and students.

There are also difficulties in connection with modules. Since a module involves self-study, the student needs self-discipline to work toward mastering a module. How many students have self-discipline or the will power to study on their own? The school may lack the facilities that the instructional activities call for. Preparing a module is not an easy task. Teachers may also find it hard to change the traditional role they are accustomed to. The teacher also has to be on the alert most of the time since the students are encouraged to ask questions.



*It is profitable to draw on the knowledge, experiences, and problems of each child in deciding what type of situation the group will role-play.*

## DISCUSSION PROCEDURES

A good deal of experimentation with discussion as a technique for the classroom and as a tool for implementing the democratic process has been done recently. The use of discussion is an attempt to get away from the traditional classroom procedure of the question-and-answer and recitation style. Discussion is used to designate group classroom activities in which teacher and students cooperatively consider certain topics or problems. It is a thoughtful consideration of the relationships involved in the topic or problem under study. The relationships are analyzed, compared, evaluated so that a conclusion may be drawn. A variety of means can be employed to get the facts before the class discussion, thus making the work more interesting. Whatever activities are used, the essential purpose of discussion is to get the desired understanding through an analysis and evaluation of the facts. Discussion activities can be varied. Panel-forum, round table, debate-forum, and symposium-forum are types of discussion that can provide valuable experience in group thinking. Learning how to conduct the various types of discussion techniques can help the teacher vary his day-to-day classroom activities.

### Panel-Forum

**Nature.** A panel is direct, conversational, interactional discussion among a small group of experts or well-informed lay persons. They discuss a problem for the benefit of an audience. The distinctive feature of the panel is the communication pattern. Participants engage in a direct, conversational interchange of ideas. They generally act as they would in any intelligent conversation, except that they speak loud enough for the audience to hear. The

members of the panel present different points of view or different types of information, and the leader tries hard to avoid a biased presentation of controversial issues.

The success or failure of most discussions is due not to what happens during the meeting but to what did or did not happen *before* the meeting. The shortcomings in such sessions usually result from unwise selection of participants or leader. Unless the members of the panel and the leader have prepared thoroughly for the discussion, little stimulation for listeners will result. One of the tragedies of the panel method is that some participants feel they need not prepare in advance or bring any special information to the situation. A properly planned and conducted panel, however, can be extremely productive and the forum period a time of creative thinking. The leader, therefore, should hold a planning session with the members of the panel well in advance of the meeting.

In the prediscussion meeting, the leader should emphasize tactfully the purpose and philosophy of the discussion. A panel is usually designed to stimulate the thinking of the audience, to give listeners insight into various approaches to a problem, and to encourage the audience to decide how the problem may best be understood or solved. Participants are reminded that (1) there are no formal talks, (2) the method of public conversation is to be used throughout the meeting, (3) individual contributions to the conversation should be brief, (4) remarks should be addressed to each other but should be loud enough so that everyone in the room can hear and feel that they are part of the conversation, (5) panel members should listen intelligently and speak well.

The rest of the planning session should be devoted to an informal discussion of the topic. The leader notes the points made and the proofs advanced by each member. From these, he makes an outline to be approved before the planning session adjourns. The panel should hold a brief session just before the meeting to recheck the outline and to agree on a plan for getting the discussion off to a good start.

Since each panel member has a copy of the outline, the discussion is not likely to wander off the track. The leader's main responsibilities are to keep the conversation moving from point to point, to see that each panel member has a chance to express his views, and to ask questions intended to clarify points for the audience. After the panel has established a pattern of discussion, the leader summarizes briefly and invites comments or questions from the audience. Thus the panel-forum begins as a discussion among a selected few and extends to include any member from the audience who wishes to speak.

### **Leading a Panel Discussion**

The duties of leadership in a panel-forum can be as varied as the situations demand. The effective leader must understand what is expected of him in different circumstances. He should approach his job with a broad understanding of the whole group and the people in it and of the principles of group interaction and human relations.

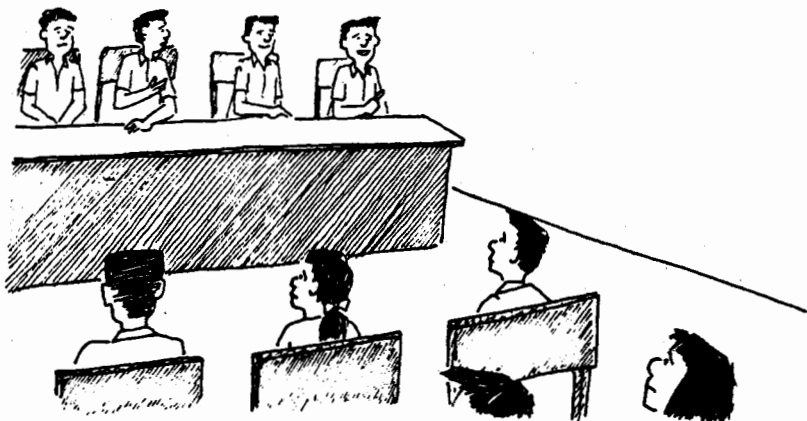
The success of any panel discussion depends much on how the chairman executes his various responsibilities. His main responsibilities are to (1) open the discussion, (2) guide and stimulate the discussion, (3) summarize the discussion, and (4) make a proper transition to the forum period in which the audience will participate. The chairman should keep track of the time so that the program starts and ends promptly.

He opens the discussions by introducing the topic and the members of the panel. He usually starts the discussion by posing a general question and keeps the discussions organized by following a flexible outline which is familiar to the participants. He maintains an impartial position by refraining from participating as a member while he is acting as chairman of the proceedings. By so doing, he encourages free, open, and informal participation from the group. He makes occasional transition and informal summaries to keep the organization of the discussion clearly before the members. At times he uses the chalkboard, charts, or other visual aids to enliven the discussion. He resolves tension and argument with tact and humor. He should at all times be group centered rather than self-centered.

### Participating in Panel Discussion

The extreme flexibility of the panel makes it important for members of the panel to have knowledge of all the aspects of the subjects other than their prepared "speeches." Each member should be thoroughly prepared by reading up on the subject, analyzing the chairman's and his own outline, and anticipating where he might make the most valuable contribution.

Panel discussion demands that participants work hard to achieve unified group effort. Members must try to interact freely. Their attention should be focused on the group rather than on themselves. They are obliged to give all views a full and fair hearing. They should be good listeners, always attentive, and equally interested in the remarks of other participants. They should strive to be objective and to contribute to group cohesiveness and to an informal, relaxed, permissive atmosphere. They should contribute spontaneously without waiting to be called on by the chairman. They should talk loud enough to be heard by everyone in the listening audience. They should sometimes use the occasion for announcing a point to make a transition or introducing a new point into the discussion. By being well informed and by discussing every point thoroughly, they should produce the highest quality outcome.



## Discussion Attitude

The course in social studies invites much use of the panel discussion. It affords a unique opportunity to cultivate a tolerant and cooperative attitude toward those of opposing views. An example of a good question to be discussed could be phrased as follows: How can the situation of cultural minorities in the Philippines be improved? To answer the question, the class may decide to consider each of the following questions: How have the



cultural minorities preserved their identity? How can discrimination against such groups be most effectively combated? For discussion of each question, the teacher appoints a panel of five members of the class representing at least some initial differences of opinion, suggests references for further reading, and arranges a meeting outside the class to work out an agenda for use in the discussion.

On the day of the discussion, the members of the panel and the leader are seated at a table facing the audience. The leader presents the members of the panel and opens the discussion by stating the topic: How Can the Situation of Cultural Minorities in the Philippines Be Improved? The leader also presents the agenda which he has written on the board:

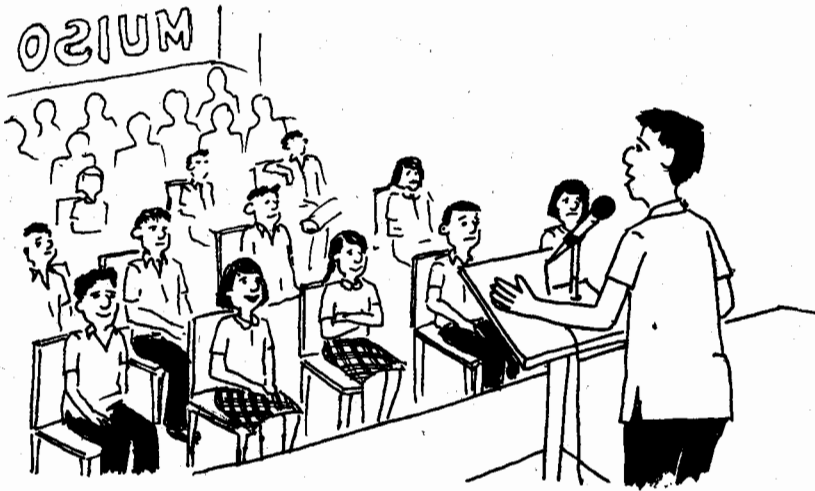
1. Can the problem be solved by legislation?
2. Would an educational program in the public schools help?
3. What should each of us do when we encounter members of cultural minority groups in
  - a. school?
  - b. recreational activities?
  - c. social life?

As the panel completes its consideration of each major issue in the agenda, the leader summarizes briefly, and other members of the class are invited to participate by expressing their own views or addressing questions to panel members.

## Symposium Forum

The symposium, like the panel, is used to give an audience pertinent information about a topic or to consider the relative merits of various solutions to a controversial problem. The symposium, however, is more formal than the panel. Persons with special competence deliver uninterrupted speeches on different aspects of a problem, and these are followed by a forum period. The symposium is essentially a public-speaking program, while the panel discussion is essentially conversational.





The participants in a symposium are a chairman or moderator and two to four speakers. The number of speakers depends on the number of significant sources of information or points of view that should be considered.

Frequent weaknesses of the symposium-forum are that communication is one way, too many speeches are scheduled within the limited time available, and the forum period is brief and unproductive.

The preparation for a symposium includes (1) deciding the purpose of the meeting, (2) choosing and framing the topics to arouse interest, (3) choosing speakers, (4) choosing a chairman, and (5) briefing the chairman and speakers on the objectives of the symposium and in the procedures to be followed.

The speakers are chosen by a committee in consultation with the moderator. Those selected should possess some degree of prestige, knowledge of the subject, and speaking skill. Once chosen, they should spend time in preparation, for the audience expects well-organized speeches. Excellence in speaking is desirable; however, listeners will excuse lack of skill in delivery if they feel that the speaker has something to say and is doing his best to say it effectively. The speakers should not forget that discussions mean "thought in process," that the purpose of the symposium is to help listeners analyze the problem and not to make conclusions for them. Each talk is a step in the process of analysis. Whenever possible, the moderator should arrange a briefing session with the speakers which should include agreement on time limit of speeches and procedure during the forum.

After the briefing session, the moderator should prepare a program including a statement of the topic for discussion, a list of subtopics, names and qualifications of speakers, time limit, and rules on participation in the forum period. In this way both speakers and listeners are properly guided and the moderator can get the discussion under way in a matter of minutes.

The symposium chairman or moderator introduces the speakers during the formal part of the program. He should keep in mind the integrated nature

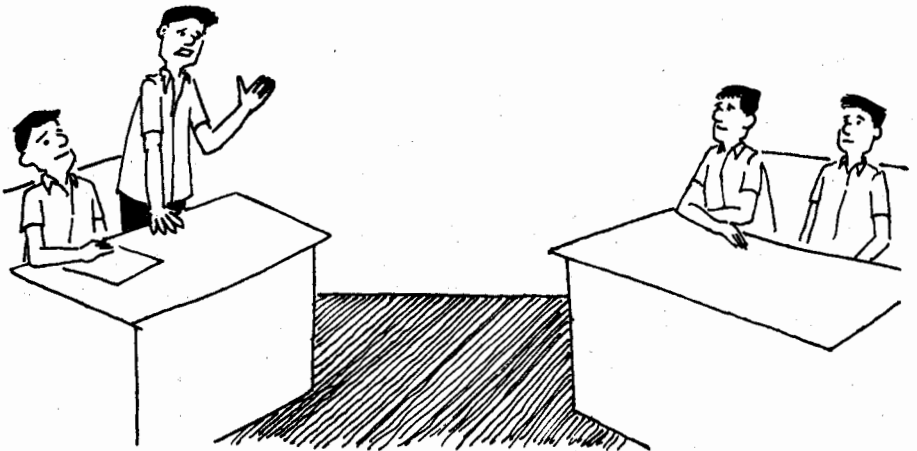
of the remarks, and he should do all he can to help bring together the thoughts of the speakers as the program unfolds. After the speeches are through, he may carry on a brief informal exchange among the participants before starting the forum period with the larger audience.

Various devices can be used to bridge the gap between the speaker and questions or comments from the audience. Thus the moderator may arrange with one or two persons to ask questions as soon as the open forum starts. Another way is for the speakers to question each other to point out important issues. A panel from the audience may also question the speakers. When the forum period is short and the audience is large, listener participation is often limited to asking questions. Such questions should be brief and concise, and speakers must resist the temptation to drawn-out answers. To forestall ending the forum on a weak or irrelevant note, the moderator may arrange to have someone ask an important question on a neglected issue before the adjournment of the forum.

### Debate Forum

Another kind of discussion is the debate forum which occurs when people with different beliefs study the same problem and arrive at different conclusions. Debate as a type of discussion program is one of the more formal types in which each participant makes a prepared speech for or against a proposition. Audience participation follows a set of formal debate speeches advocating affirmative and negative positions on a proposition. Debate serves as a school exercise where members of affirmative and negative teams speak alternately to urge the adoption or rejection of an affirmative resolution. Debaters should take positions on the question only after they have studied it to avoid being unduly contentious. Debaters are usually allotted equal time to speak.

The debaters chosen should be approximately equal in prestige, knowledge of the problem, and speaking skill. They should understand that the purpose of the meeting is to present an analysis of a problem and a fair presentation of the arguments for or against it.



The affirmative side starts and closes the debate. A typical debate may take a total of forty to sixty minutes. In formal college debate, all speakers usually give a rebuttal speech. The "orthodox" debate usually follows this time allotment:

- First affirmative speaker — 10 min
- First negative speaker — 10 min
- Second affirmative speaker — 10 min
- Second negative speaker — 10 min
- First negative rebuttal — 5 min
- First affirmative rebuttal — 5 min
- Second negative rebuttal — 5 min
- Second affirmative rebuttal — 5 min

However, there are variants of this, one of the chief forms being the cross-examination debate, in which members of each side ask questions to the speakers on the opposite side as the debate progresses. The typical sequence of a cross-examination debate is shown below:

1. First affirmative speech  
Cross-examination of this by second negative
2. First negative speech  
Cross-examination of this by first affirmative
3. Second affirmative speech  
Cross-examination of this by first negative
4. Second negative speech  
Cross-examination of this by second affirmative
5. Summary and refutation by negative
6. Summary and refutation by affirmative

The chief distinguishing feature of participation in debate is the factor of careful analysis of issues, logical reasoning, and thinking. Debate challenges one's thinking and reasoning ability, for one's opponents are alert to find flaws and weaknesses in reasoning or evidence. These reminders of debate participation should be emphasized:

1. One's attitude in debate should be properly adjusted in relation to the subject, the opponents, and listening audience. Arguments should be directed toward the issues, never toward the person. A proper attitude includes keeping one's perspective, temper, and sense of humor.
2. Refutation, or the answering of opponents' arguments, should be woven throughout the main speeches in a debate. There are a number of ways of answering an argument that is to be refuted, including
  - a. pointing out that it is not relevant or important to the question
  - b. showing that it is not supported by the facts or that insufficient evidence has been given
  - c. indicating fallacies in reasoning
  - d. arriving at a contrary argument by sound reasoning
  - e. supplying more and better evidence to support one's side of the argument
  - f. turning the argument so that it actually helps one's side

3. Make each point consistent with those made by his colleagues who are also upholding his view. Debaters should not be caught in inconsistencies.
4. In answering points of the other side, it is well to have a large supply of evidence that can be drawn from to support one's position.
5. A knowledge of the attitude of the audience (as well as the information they have) on the question will be helpful in determining whether the audience is favorably or unfavorably disposed to what is being said. This will also be helpful in anticipating questions that will be raised during the forum period.
6. A card-index file of all points and evidence that may be used should be kept, with some system worked out, so that the members of the team can quickly draw on the material they want to include at any given stage in the debate.

### Round Table Conference

The term *round table* is frequently used to describe the type of program quite similar to the panel. It is usually a small discussion group seated face to face around a table, without a larger audience. It is a small conference by another name and has the nature of an informal semisocial gathering.

The number of members need not be large, six or eight are enough, and for good discussion, should never exceed twenty. The members should understand that they are not coming to hear a speech but to do their own talking.

A discussion problem is selected in which the members are interested. It is one in which there will be some differences of opinion among them. Much confusion and waste of time will be avoided if all members understand from the beginning precisely what is to be discussed.

A leader who is willing to prepare for the meeting and whom the group likes and respects should be chosen. Most often the leader finds himself to be the group's source of information. He therefore must study the question in preparation for leading the discussion.

Once the leader has obtained a sufficient knowledge of the question, he should prepare an agenda. It should be written on a blackboard so members of the group can glance at it during the discussion. In presenting the agenda, the leader should inquire from the members if they have any argument in mind relevant to discussion of the question which cannot be brought up under one of the issues proposed. If so, the agenda should be revised until all are satisfied with it.



The leader's task in opening the meeting is to introduce the question and to present such material that will pave the way for profitable discussion. The leader may present the problem to be discussed through a real or fictitious case in brief story form. However, it is not always that the leader will find the case method useful in presenting the question. He will have to proceed from statement of the question to a statement of whatever background of facts may be necessary for intelligent discussion.

An exposition of facts should as much as possible not consume more than ten minutes. Few persons can assimilate a large body of new information, so whatever can be assimilated in one sitting will be enough to be of practical use in a discussion.

The factual statement should be strictly impartial. Slanting it toward any particular solution of the problem will destroy its value as a basis for discussion and will weaken confidence in the leader's integrity. After the leader has presented his expository statement, he should close his introductory talk by presenting the agenda for approval by the group.

The leader should remember that he is not making a formal speech when he delivers the introductory talk. He should remain seated while talking and speaking as informally as he can when he serves as moderator of the discussion that follows. The talk should not be written out and read.

The leader will invite discussion on each of the issues on the agenda. He follows the discussion as it proceeds and then sums it up at the end of the session. Then the leader should ask the group to consider what action it wishes to take as a result of the discussion.

In conducting a round table conference, two problems may arise. One concerns the use of time. While the discussion should usually run for an hour and a half, no question can be discussed adequately in that length of time. This means that if the entire agenda is to be covered, the leader must terminate the discussion before some agreement has been reached. The problem, then, would be whether it would be preferable to give to each issue enough time necessary to reach an agreement even if some issues are not touched. The leader can pose this question to the group before the discussion starts. If left to his own judgment, the leader will most often find that the group is better satisfied when it covers the entire agenda even though some issues were discussed inadequately.

The procedure useful in conducting the session of a round table conference may be summarized as (1) introductory remarks, stating the question to be discussed in as interesting a manner as possible, (2) statement of the facts or a brief story of a real or fictitious case, (3) presentation of the agenda, (4) group discussion of each of the issues in the agenda, (5) summary of the discussion, and (6) consideration of what action to take as a result of the discussion.

## SPECIAL TECHNIQUES

The most promising techniques that have been devised to insure active participation in the forum period are role playing, case study, buzz session, workshop, and the seminar.

### Role Playing

Role playing is the spontaneous acting out of problems or situations. This technique usually portrays a situation more candidly than can be done by description. The actors must understand the nature and purpose of their respective assignments. Then they are given a few minutes to agree on the points they should make. They should avoid giving caricatures that cause laughter or are merely entertaining. The acts may be used either to start the forum or to illustrate a point when interest lags. When the purpose is to illustrate a problem situation, two or three role-playing groups may try different solutions. Role playing creates interest and stimulates discussion.

A suggested step-by-step procedure for building a role-playing episode which expects to produce maximum learning for all concerned includes (1) identifying the problem, (2) establishing the situation in which the action is to occur, (3) establishing roles and selecting participants, (4) presenting the act, (5) playing the situation, and (6) analyzing and evaluating the presentation.

#### *Suggested Steps in Role Playing*

*Identifying the Problem.* Decide exactly what you want the group to learn from the episode. For instance, in a supervisor and an inefficient teacher situation, is the purpose to teach supervisors how to get better work from inefficient teachers? Is it to learn how to criticize or make suggestions in a manner which will improve the teaching situation? Is it to develop a specific technique for supervisors to use? Or is it to produce an understanding of some general principles and concepts of establishing rapport between teachers and supervisors?

Vague objectives can easily result in a half-dozen role-playing episodes, all covering the same point, leaving uncovered equally important learning outcomes. Only by planning the whole coverage and dividing it into specific points and then structuring the episodes to insure their application to each point can you be sure of including all learning outcomes you intend to accomplish. It is only by systematic planning that the best results can be achieved from the use of the role-playing technique.

*Establishing the Situation for Role Playing.* There are several ways of doing role playing. One way is for the teacher or group of teachers to design the situation to fit the objectives and learning outcomes they want to achieve. This method offers the best guarantee that the outcome desired will be produced.

However, it is also profitable to draw on the knowledge, experience, and problems of the members of the group in deciding what type of situation will be played. A committee of group members may be appointed and asked to design one or several situations on problems which they think would be of greatest value to the group. This has the advantage of focusing on the problem of greatest concern to the participants themselves. Finally, it is also permissible to ask the group for suggestions on situations which might profitably be played and to quickly construct a situation in terms of their suggestions. This is the least reliable method and least likely to secure thorough coverage of desired learning outcomes. However, it tends to spur group interest and enthusiasm and to produce natural, spontaneous role playing and is a variation from the more carefully planned situations.

To help produce more profitable episodes, observe these principles in constructing situations to be played: Structure the situation to fit the specific learning outcomes you wish the group members to achieve except when the basis is on spontaneous suggestions from the group. Give the actors freedom to explore personality and methods of a character. Define the situation closely but do not describe the characters minutely; let the actors explore and construct them. On the other hand, if a problem or a situation is to be explored, concentrate on describing people involved, but do not tell specifically just how the participants should handle the situation. Make the situation resemble conditions the group members actually see in their daily work or describe a situation in detail for everyone to envision the same circumstances surrounding it.

Here is sample lead-off description of a situation:

Mrs. Santos is one of the best teachers in school, but recently she has been touchy, sensitive, and irritable toward students and coteachers alike. Her eyes are frequently red in the morning. There are vague rumors. . .

*Establishing Roles and Selecting Participants.* As stated earlier, if a character study is desired, specify the situation in detail, and let the actors develop the characters naturally in relation to the situation. If the emphasis is on handling the situation, sketch out clearly the types of people involved.

Participants must be chosen on the basis of merit, i.e., they must have self-confidence and must be willing to enter wholeheartedly into the act. Always give players names different from their own, as well as characters and descriptions easily recognized as not genuinely fitting them. This minimizes self-consciousness in players, and the audience feels freer to analyze and criticize the action and get heartier cooperation from everyone.

*Presenting the Act.* A good starting point to warm up the group for a situation is to talk about the objective of the role playing during the presentation and to explain the skills and insights the activity hopes to acquire.

*Playing the Situation.* This step is the playthrough and is supposed to be the most difficult step. The rule is spontaneity.

*Analyzing and Evaluating the Presentation.* Analyzing and evaluating a role-playing episode is too complex and is a judgment-involved process. However, there are a few requirements which should be met in every analysis. These are determined by the resourcefulness of the instructor and his skill in extracting the most learning possible from each individual situation. But at the least, these points must be covered:

*What happened?* Did people reach an understanding? Was the problem solved or was a temporary solution reached? It should be borne in mind, however, that the value of a role-playing episode has no relation to whether or not a solution was reached. Much of the potential value of role playing will be lost if participants feel that they must end all episodes with some sort of agreement. After all, in real life, discussions do not always end in agreement.

*Why did it happen that way?* Whether or not an agreement or solution was reached, the analysis should probe for the reasons for it.

*What were the motives and feelings involved?* One of the values of role playing as a method of teaching is it clearly brings out the fact that in human relations situations, people's feelings get into the act quite as much as their mind. Analyze the characters on how they played their roles and determine what their feelings were and how they depicted the progress of the discussion.

*What variations would have produced other results?* This element of analysis is basically for the purpose of stimulating participants to use their keen sense of observation and interpretation to find alternative ways of handling a situation.

Apparently the role-playing technique of instruction appears deceptively simple and seems to impose minimal demands on the teacher. However, on closer inspection, it requires extraordinary amount of skill, finesse, and acuity of observation and analysis.

## Case Study Method

Another group-centered procedure is the case study analysis. This method of instruction presents specific situations or problems to stimulate discussion. A situation or illustration relating to a topic is sketched out, and the class is asked, "What would you do in a case like that?" This can take the place of thought-provoking questions that usually start the group thinking. A couple of extra questions or examples serve as additional priming to get the discussion going in case it fizzles out after the first example. Discussants are best motivated when presented with lifelike situations whose successful handling depends on knowledge of the subject under discussion.

Basically, the case study method is the group discussion method, using cases as the subjects for discussion. The method implies extensive analysis and interpretation of a case selected to demonstrate a learning outcome. During the discussion, the leader presents the facts of the problem and the



solution as depicted in the case and then draws from the group the principles they feel the case shows in terms of what should have been done (the better solution).

A modified case study method, however, may be used by assembling a number of short cases, each illustrating a single learning outcome and each to be discussed briefly. The class is divided into groups and each group is assigned a case. Problems of student teachers may serve as very good source materials for lessons in practice teaching, administration and supervision, internship, mental hygiene, guidance, etc. The group members meet together to plan their solution and presentation. A series of short episodes, each showing a right and a wrong way of meeting a situation, is prepared. The solutions are acted out or are reported.

An evaluation should follow the presentation.

Following are some sample cases for analysis and interpretation:

1. Jose Cruz, a junior in college, is an honor student and is also active in various campus activities. During the semester he has been absent ten times from Learning Skills where participation in class discussion is an important part of course work. Five of his absences were excused through requests of advisers of the organizations of which he is an active member. He has a recurring bad cold but has not consulted a physician about it. On other occasions he goes home to comfort an ailing mother. He has told the professor his reason for his absences and has handed in all written work and has taken make-up tests.

To what extent should the professor permit these absences to alter Jose's grade in the course?

2. X University is considering the awarding of scholarships to deserving athletes who are not necessarily students of good academic standing.

How should the student advisory committee on scholarship react to this?

### **Buzz Session**

The buzz session can be held successfully with familiar topics that need group opinion, evaluation, planning, or interaction. At times, the chairman in charge of a program feels that all those present should be involved in the discussion at least to some extent. However, if the group is too large for informal discussion, the method of multiple round tables does not seem feasible.

In this situation, the chairman may divide the group into small groups of six members each, by asking all those in the first, third, fifth rows, and other alternate rows to turn their seats to enable them to face directly those behind them. The chairman then suggests that the three at the end of the first row and the three they are now facing belong to a discussion group of six. Each group chooses a chairman and a secretary. The entire class, now divided into groups of six without having anyone leave his seat, starts discussing a particular

topic or question on which judgment is sought. They think out as many ideas as possible, and then they pick out what they regard as their three best suggestions. The secretary then reports what was agreed upon when the different groups reassemble for a general discussion.

The buzz session is also useful when a lecture is to be followed by a question period. Most members of the audience may be too shy to ask questions, thus the question period will be a failure. The chairman therefore announces that, after the lecture, the audience will be divided into buzz groups for about ten minutes; each group is to select two or three questions they would like the speaker to answer. It is seldom that those who are too shy to speak up before the entire group will hesitate to express themselves in a group of six. The buzz session can result in many good questions which the spokesman of each group will in turn address to the speaker.

## **The Workshop**

The workshop is generally used as a technique of in-service education and group thinking and planning. It involves the use of the group process in attacking and solving educational problems. Persons with problems of common concern come together to attack and solve their problems cooperatively.

During the workshop, participants are encouraged to stay together in one place to enable them to have opportunities for interaction not only during their group work or deliberations but also in personal-social relations. Such interaction made during the social activities which is a part of the program. The workshop also makes use of a variety of means and devices in the solution of problems such as group meetings, individual conferences, field trips, and excursions, and the use of resource persons and consultants. The values gained from the workshop are both intellectual and social.

### *Different Phases of the Workshop*

A committee works out the preliminary planning for the workshop to do away with the difficulty that is usually met when the group is large. In such a case the members of the conference are divided into subgroups to take charge of a specific area or group problems. The problems should, however, originally come from all the members. The planning committee studies, classifies, organizes, and puts in workable form the problems submitted by the members.

The workshop proper embraces several stages like the following:

1. Opening session
  - a. Keynote address and inspirational speeches
  - b. Organization of the conference
    - (1) Election of leaders and conference staff members
    - (2) Organization of subgroups
2. Group work—presentation and discussion of problems
3. Consolidation of group reports leading to formulation of the entire conference report

4. Closing session
  - a. Evaluation of the work conference
  - b. Disposition of the results of the work conference
  - c. Planning for the future

The opening session is keynoted by speakers who explain the importance and objectives of the workshop. This is followed by the organization of the conference and the election of the chairman or discussion leader, the recorder, group process observers, and other personnel if these had not been previously selected. The subgroups may also be constituted if they had not been formed previously.

It is best to allow the members to choose the area or subgroup in which they prefer to work. So that members are equally distributed, first and second, and even third choices should be secured. In this way the members can give their maximum participation because of their special interest in the group and because their qualifications are suited to the problems involved.

Each subgroup should select its own leader that will steer the work of the group. Each subgroup is expected to come up with a report on the problems assigned to it. These reports are coordinated and made the bases of the entire conference report.

The consultants or resource persons may be called upon to speak to the entire conference or to the different subgroups so that the members may profit from their broad experience and special qualifications.

The effectiveness of the workshop should be evaluated by a panel which had been previously formed. Such evaluation should include the appraisal of the content of the report and the process itself, including the effectiveness of the different leaders and the quantity and quality of individual participation. In doing this, the evaluation committee may avail itself of the assistance of the process observer. The evaluation panel should not make its evaluation on the basis of its own opinion alone. It should make use of individual evaluations by members. A checklist or a rating scale may be accomplished by the individual members in order to get their opinions in the varied aspects of the conference. In this way the appraisal made by the panel becomes the combined judgment of the entire conference participants.

The last part of the closing session should be devoted to the planning of the future. The plan should include the ways and means by which the recommendations of the workshop are to be implemented.

## The Seminar

A seminar is held for the purpose of solving or attempting to solve a problem. The discussion is on an issue, problem, situation, or proposition on which an answer, a solution, or a policy is arrived at. The seminar group is a deliberative body looking for the solution to the problem from the evidence based on readings, experiences, and minds of its participants. As such evidence accumulates, an effort is made to develop a policy or solution that is better than what is in existence.

The steps in preparing for a discussion in a seminar depend on (1) how complex the seminar problem is, (2) how much of an expert the leader, and (3) how skillful the leader is in guiding a group through the process of learning.

It is of great advantage when the leader knows enough about the subject or can find out enough through reading and interview, can define objectives, and can state the problem definitely. Then he can guide the seminar group into the subject without much difficulty.

However, if the leader is not an expert on the area himself or if the area is too complex to have objectives defined and problems stated specifically, a basic preparatory approach is needed. A well-thought-out approach is the problem-solution approach. This constitutes a generalized agenda to put order and systematize the seminar discussion. The steps to follow in group problem solving are (1) identifying the problem, (2) gathering data, (3) analyzing the data, (4) formulating hypotheses, (5) testing the hypotheses, and (6) formulating a conclusion or solution.

Identifying the problem means determining the real inner nature of the crux of the problem. It means involving all participants in getting the same idea of what the problem is. As much as ten percent of the total discussion time can be spent in developing a thorough mutual understanding of the problem. This means actually saving several times the amount of time which would be lost later if everyone were not on the same track. The nature of the problem is such that when it is fully identified, the solution becomes almost routine and identifying the problem becomes practically the total problem-solving process.

Gathering data takes two forms. Each seminar member contributes his personal knowledge and experience to accumulate a sizable body of information from the group itself. This will consist of talking over various aspects of the problem, preferably maintaining a blackboard record of facts, ideas, and approaches developed. This is a way to convert the stock of knowledge of each member into a storehouse from which the whole group can draw.

Each seminar member or his staff, on the other hand, makes a systematic gathering of data from the field, libraries, or other sources. This involves providing for long breaks in the seminar to allow members to gather as much data as they can and reconvening to assemble the data into usable form.



Analyzing the data means "looking over" the stock of knowledge the group has gathered—noting significant leads toward a direction and trying them out in different combinations. Sometimes the order in which one looks at a body of facts and ideas holds the key to solving a problem. Implications, hints, trends, and clues should be carefully noted. It takes plenty of skill and know-how to make an accurate diagnosis and interpretation of facts. Time should be spent on this step.

In formulating the hypotheses, direct steps are already being taken toward a solution. All possible solutions, answers, and explanations should be listed. Everyone should be encouraged to offer as many possible solutions as he can. By this time the members have already spent considerable time thinking about the seminar subject and their minds are pretty well steeped in it. Critical evaluation of suggested solutions is not yet necessary at this time.

The different hypotheses formulated are then evaluated carefully. Some hypotheses will offer a partial solution to the problem and can be combined with others to produce improved solutions. Various aspects of some of the hypotheses will be found unsuitable and will have to be discarded. When the list of possible hypotheses stand the test of critical evaluation, then the seminar is now ready to move into the last stage of the discussion.

The best possible answer to the subject for which the seminar was convened or the solution can now be formulated from the soundest hypotheses that have been critically evaluated.

It is possible, of course, that at any point in the process, a new slant on the real meaning of the problem or new evidence or interpretation may come up, a brilliant idea might present itself which may cause the group to return to an earlier stage. However, this general step-by-step sequence has proved to be a sound basis for running many seminars.

## **SUMMARY**

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Changes in emphasis on educational objectives, focusing on the child as the most important factor in the educational processes, has called for a broader and more diversified concept of method.

A knowledge of improved instructional practices can make a teacher's work more interesting and more effective. Improved instructional practices include the following:

1. The integrative technique, the aim of which is to achieve the integration of the individual, i.e., the development of a well-rounded personality;
2. The discovery approach, the process whereby the child under subtle direction go through the logical processes of observation, comparison and obstruction, generalization, and application. The child is encouraged to explore a process and discover rules and generalization;

3. The process approach, which in substance is the same as the discovery approach. The process approach to science teaching is an attempt to solve the problem of what science concepts to teach and how to teach them effectively. The processes can be used in other subjects in all levels of education. Actually the processes are used in the question-and-answer method, in the unit, the project, the inductive, and in other methods. The expected sequence of development in both simple and integrated process categories are observation, description, classification, measurement, inference, hypothesis, prediction, control of variables, and experimentation;
4. The conceptual approach, whereby subject matter is taught to enable pupils to develop concepts. A concept is one's mental picture of anything, which varies from person to person depending on previous experiences. Concepts provide shortcuts which make it possible for transfer of learning to take place in the mind of the learner;
5. The mastery learning, which offers a new approach for raising the achievement level of a learner. It aims to insure that each learner will develop to his maximum potential and thus acquire successful learning experience which will engender self-confidence;
6. The programmed instruction, which refers to a planned learning pattern presented to the pupils in a sequential manner;
7. Team teaching—an approach that involves two or more teachers who work cooperatively with the same group of students for some period of time;
8. Simulation—a miniature representation of a large scale system or process. It is a teaching technique that makes participants/learners more explicit about what they are doing, seeing, or learning;
9. Module—a self-learning kit which usually consists of a package of learning activities that have to be accomplished by the student;
10. Discussion procedures, the purpose of which is to get the desired understanding through analysis and evaluation of facts; and
11. Special techniques such as role playing, case study method, buzz session, the workshop, and the seminar which insure active participation of all learners.

## ***STUDY GUIDE*** \_\_\_\_\_

1. Explain the different aspects of the discovery and process approach as a teaching-learning process, its advantages and disadvantages. How can the disadvantages be minimized?
2. Analyze the steps in self-discovery as a teaching approach. How does this compare with the problem-solving and inductive methods of teaching?
3. Discuss the steps in the integrative activity technique. How do these steps compare with the steps of the unit mastery technique of Morrison?

4. Explain the principles underlying the planning of integrative activity units. How do these principles apply in other teaching approaches?
5. Explain how programmed instruction and the use of learning modules meet individual needs.
6. Define *team teaching* and explain its major characteristics.
7. Which of the patterns of team teaching described in the chapter can be adopted in the Philippines? Why?
8. What are the implications of oral communication in daily living and the school curriculum?
9. What is common in the different discussion procedures discussed?
10. Organize a group discussion utilizing any of the suggested patterns. Consider topics of current interests.

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## MULTISENSORY AIDS TO TEACHING

### OBJECTIVES

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1. To explain the values and uses of instructional materials in classroom teaching
2. To relate the use of various instructional materials to the teaching of a particular subject area
3. To prepare and demonstrate the use of various instructional materials in the teaching of a particular subject area
4. To gather instructional materials from various sources as a start of a personal resource file in the teaching of a particular subject area

Teaching is essentially a communication process between teacher and pupil. In the past, teaching depended entirely on verbal communication. Although this kind of communication process continues to play an important role in the teaching process, current educational practice recognizes the value of a growing number of instructional materials as aids to effective communication and, in turn, to effective teaching and learning. These materials are commonly referred to as audiovisual aids because they are sensory objects and images utilized to promote meaningful communication. These numerous materials that are available to present-day teachers vary from very simple ones such as chalkboard, flannel boards, workbooks, and exhibits to more complicated and sophisticated ones like motion picture projectors, computers, and the like.

To ensure sound and effective use of audiovisual aids, it has become important for teachers to know and understand certain facts about these materials, such as (1) the educational values derived from their use, (2) the guidelines in the use of these aids, (3) the various kinds and uses of audiovisual aids, and (4) the various sources of audiovisual aids.





*There is more effective learning when pupils take part in sense-based experiences and activities.*

## EDUCATIONAL VALUES OF AUDIOVISUAL AIDS

It is quite impossible to enumerate all the educational values of instructional materials. However, it is important that some of the common values be brought to the attention of teachers, particularly beginning teachers. Awareness of the values that can be derived from the use of audiovisual aids will help the teacher decide when to utilize audiovisual aids in any lesson or unit that he will take up with his pupils.

There are a number of reasons for using audiovisual aids in classroom teaching. Among them are the following:

1. *To help clarify important concepts.* A basic learning principle is that learning begins with the concrete and moves increasingly toward the abstract. For students to understand certain abstract concepts, they have to bring rich, concrete experiences to those concepts either by experiencing the real thing or a contrived substitute of the real thing. It is at this point that audiovisual aids serve a very useful purpose. Audiovisual materials can serve as bridges between the concrete and the abstract.

Through the use of audiovisual aids, qualities, relationships, and processes represented symbolically by words help students to form mental pictures of the realities which they represent. Hence, for instance, maps may be used to show the relationship between geographic areas and vegetation; organization charts to show complex interrelationships in an organization; pictures, diagrams, or films to illustrate a process; and models to show the qualities of an object.

2. *To arouse and sustain students' interests.* Students who experience things through multisensory ways are more highly motivated than those who have a narrower range of opportunity. When teachers employ audiovisual materials rather than sticking to purely verbal procedures, students' interests are aroused much faster. Novelty and variety introduced in a classroom activity through the use of audiovisual materials also help minimize monotony. Monotony promotes boredom which results in unfavorable attitudes toward learning. If their interests are to be sustained, students have to develop desirable attitudes toward their learning activities.
3. *To give all students in a class the opportunity to share experiences necessary for new learning.* There are certain experiences necessary for new learnings which students, in spite of opportunities provided to them outside of the school, find too expensive and complex or too remote in time and place for them to experience. With the use of some audiovisual aids such as pictures, films, filmstrips, television, and recordings, students are given the opportunity to share experiences, current or past, right in the classroom. This way, richer experiential backgrounds for certain new learnings are provided to the students.
4. *To help make learning more permanent.* The intensity, vividness, and accuracy of impressions conveyed by audiovisual materials are likely to be retained longer than vague impressions conveyed through purely verbal instructions. Furthermore, through the use of audiovisual aids, certain ideas which need to be repeated in order to be better remembered can be repeated in a different form or context. There is variety in showing the application of ideas being remembered permanently than simply presenting the ideas repeatedly in the same form and manner.

## BASIC GUIDELINES IN THE USE OF AUDIOVISUAL AIDS

Audiovisual aids cannot teach by themselves. They need skillful teaching to make them effective. Hence, like any other activity in the classroom, the teacher must take into account four basic considerations in using any of these materials: (1) selecting the materials, (2) preparing the class for the audiovisual experience, (3) guiding the class through it, and (4) following up the experience after its completion.

*Selecting the materials.* The first concern of a teacher who plans to use some audiovisual devices is proper selection. Experienced teachers may not find it difficult to judge the appropriateness and effectiveness of different instructional materials. It is the beginning teacher, more than anybody else, who probably needs a guide in selecting them for his lesson. In this connection, the following simple criteria may be considered: (1) suitability of the material for the intended purpose, (2) appropriateness of the material for the intended learner, and (3) quality of the materials.

No material is of much value unless it contributes to the realization of the basic objectives of a lesson or unit. For the pupils to gain from the presentation of the material, the teacher must see to it that it is according to their age level, intelligence, and experience. In addition, the legal and ethical aspects

of a material must be considered. The material must be free from bias, prejudice, distortion, antisocial attitudes, and untruthfulness. Depending upon the kind of material to be used, the teacher may want to look into any of the following various factors relating to quality:

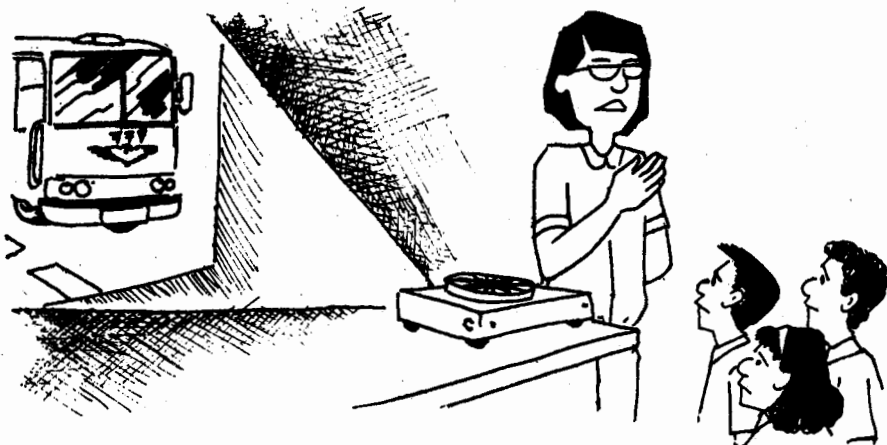
1. Recency—up to date, reflecting current thought, original or revised
2. Availability—obtainable when needed
3. Appeal—aesthetic, attention holding
4. Technical quality—simple, workability
5. Cost—within school budget

The best way the teacher can be sure of the appropriateness of a material is to try it out before using it in his class. This is particularly important when selecting the more complicated materials such as videotapes, films, filmstrips, and recordings. Depending only on descriptions of these materials in catalogs may not be very reliable.

*Preparing the class for the audiovisual experience.* Before starting an audiovisual activity, the teacher should prepare the class for it. Motivation should accompany this preparation. He should spend some time in discussing the purpose of the activity and in suggesting points that will direct attention to key ideas during the activity.

In preparing for the activity, the teacher should also prepare the activity itself. He should make sure that the equipment or material is in working order. The pupils may have been well prepared, but the activity can be disrupted because the equipment does not function properly or some of the materials got lost.

*Guiding the pupils through the audiovisual experience.* An audiovisual activity does not mean that the teacher will not need to guide the pupils any longer. On the contrary, the activity will be an opportunity for the teacher to guide them to more fruitful learnings. There will be more effective learning if pupils will be given a chance to be active participants in the audiovisual experience. Or, depending upon the audiovisual activity, the teacher can stop at certain points during the presentation to ask questions or to explain to the pupils what they are experiencing. These procedures will help pupils get the most from the audiovisual experience.



*Following up the audiovisual experience after its completion.* A follow-up of any audiovisual experience after its completion will help clear up possible pupils' misunderstanding of certain portions of the experience and if pupils know that an audiovisual activity will be followed by class discussion or testing, then they will do their best to pay attention during the experience. It is also through follow-up where the teacher can evaluate the worth of the material. He can find out whether the purpose of undertaking the audiovisual activity was realized. Such evaluation can also be a basis for improving the material for further use.

## KINDS OF INSTRUCTIONAL AIDS AND THEIR USES

There is a constantly growing array of instructional aids. A number of these devices which teachers use in their everyday teaching are commonplace and inexpensive. A few are quite intricate and complicated aside from being expensive and hard to procure.

The following is a list of different instructional aids. This listing is not exhaustive but it should help in identifying aids most suitable for use in specific classroom situations.

### I. Printed Materials

- A. Textbooks
- B. Supplemental materials
  - 1. workbooks
  - 2. duplicated outlines
  - 3. teacher-prepared study guides
  - 4. reference books
  - 5. pamphlets
  - 6. magazine articles
  - 7. newspapers

### II. Audio Aids

- 1. radio
- 2. phonograph
- 3. tape recorders

### III. Visual aids

- A. Chalkboard
- B. Still pictures
  - 1. nonprojected
    - a. photographs
    - b. illustrations
  - 2. projected pictures
    - a. slides
    - b. filmstrips
    - c. opaque projections
    - d. overhead projections

- C. Graphic materials
  - 1. charts
  - 2. graphs
  - 3. maps and globes
  - 4. posters
- D. Exhibits
  - 1. school-made displays
  - 2. bulletin boards
  - 3. museums
- E. Flannel board and felt board
- F. Objects
  - 1. specimens
  - 2. realias
  - 3. models

#### IV. Audiovisual aids

- 1. motion pictures
- 2. television
- 3. videotapes

#### V. Demonstrations

#### VI. Community resources

- 1. field trips
- 2. resource persons

#### VII. Language laboratory

#### VIII. Programmed instruction

Not one of the devices in the above listing is suited for all kinds of lessons. As has been stated earlier in this chapter, it is the teacher's responsibility to choose the most appropriate device according to the objective of the lesson. Hence, to do this, the teacher must be acquainted with the characteristics and uses of different audiovisual devices. The following are brief descriptions and uses of each of the materials in the list above:

### Printed Materials

A large portion of all teaching aids is composed of printed materials. These materials fall into two broad classes: the textbook and the supplemental materials.

*Textbook.* A textbook is a systematic arrangement of subject matter designed to assist the instructor in teaching particular content to students at a specific grade level. It is the one book used by the entire class.

The textbook is the most commonly used teaching aid. If a well-organized textbook is placed in the hands of an effective teacher, it can be a most

helpful aid to promote learning. A well-organized textbook can be used to advantage, which makes it an invaluable educational tool. Among its advantages are the following:

1. It provides a common core of learning that is essential in intelligent class discussion, problem-solving situation, and small group work.
2. It contains a concentration of course-related materials, such as suggested collateral readings, projects, problems, exercises, and other suggestions for specific points worth considering in carrying out the objectives of the course.
3. It helps the student understand how various parts of the course content are interrelated and provides him with an easy means of review.
4. It aids in the implementation of the course syllabus or outline because it usually coincides with the syllabus or outline.
5. It is easy for the student to take home for study since it is compact.

Because of the well-planned, well-developed, and comprehensive content of most textbooks, some teachers use the textbook to the exclusion of other teaching materials. For some teachers, especially the poorly prepared ones, the textbook serves as the syllabus, study outline, sole source of pupil learning, and the only basis for testing the students. In some instances, the textbook becomes the subject itself, in which case, very limited pupil learning is achieved.

How can the teacher then utilize the textbook in a manner most conducive to pupil learning? The following are some suggestions for achieving this result:

1. Correlate the textbook with other learning materials. Utilize supplemental readings, other classroom experiences, and extra school activities.
2. Teach the pupils to evaluate and discriminate as they read. Develop an attitude of critical thinking concerning the textbook. Spend class time on class discussion, problem solving, small group work on broad concepts and attitudes contained in the textbook rather than paraphrasing the textbook.
3. Plan instructional units of study, projects, and problems instead of assigned pages, chapter, word or question lists in single texts.
4. Fit the textbook to teacher-pupil learning, not vice versa. The course should not be determined by the textbook.
5. Teach the pupils the best way to study a textbook, i.e., use of table of contents, index, glossaries, reference lists, and illustrations.
6. Make skillful use of the teachers guide to the textbook to provide meaningful experiences related to the core of learning.
7. Teach pupils the most effective way of reading and using textbooks for efficient learning.

*Supplemental materials.* These are the various printed materials used to supplement regular classwork and textbooks. They include workbooks,

duplicated materials, teachers' prepared study guides, reference books, pamphlets, magazine articles, and newspapers.

Workbooks are books accompanying basic texts with exercises related to the lesson or supplemental to what is to be learned in class or in the textbook. If well planned and carefully written, workbooks can help students supplement, review, and organize what they have learned. They provide practice in self-direction and independent study.

Teachers guides aid the teachers in much the same way as workbooks aid the student. They are useful to the extent of enriching the classwork. These guides may have been prepared by the authors to accompany their textbooks or by the teachers themselves.

The other supplemental materials—reference books, pamphlets, magazines, and newspapers—are generally available in the school library. Their value lies in providing the best sources of ideas and information, particularly current topics, otherwise not available in textbooks. By making use of these materials, teachers can at the same time develop proper study habits and skill in the use of the library.

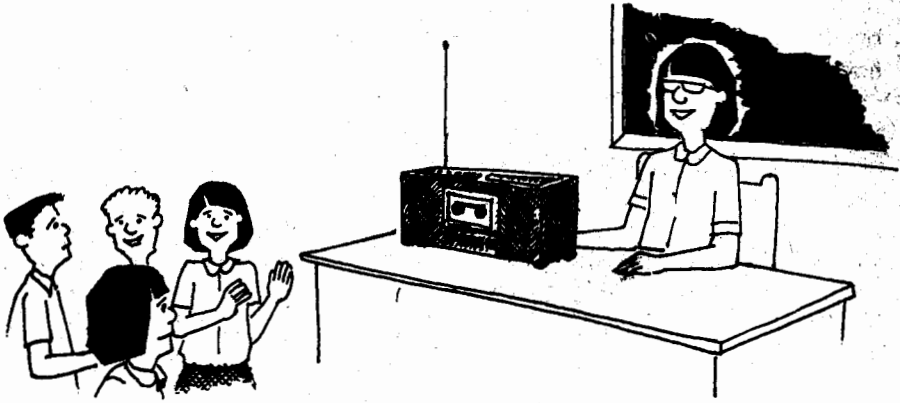
In order to utilize any of these supplemental printed materials effectively, one basic guideline should be followed by the teacher and that is, he should not adhere slavishly to the use of any of these materials. Any material should be used in positive conjunction with class discussion, textbook work, and student experiences.

## Audio Aids

Considering that a large portion of pupils' school day is spent in listening to instructions, to class discussions, to reports, to teacher's comments, etc., it has become necessary to help them develop their ability to grasp meaning from auditory stimuli. Recorded and transmitted sounds are used in schools now to provide learning experiences in listening.

These recorded and transmitted sounds are facilitated through the use of such audio aids as the radio, phonographs, tape recorders, and the public address system. Alcorn (1970) gives seven significant values of audio aids: (1) enrichment of curriculum, (2) preservation of contemporary sounds, (3) recording of contemporary events for later use, (4) pattern for remedial practice as in speech, music, and foreign language, (5) capture of natural sounds such as that of birds, animals, the sea, and hurricanes, (6) capture of sounds of industry and urban life like the click of electronic computers, sound of screeching brakes, hum of industry, and thumping of railroad cars, and (7) reporting and recording of various school activities as researches, committee findings, interviews, and the like.

*Radio.* The radio has been found to be a valuable instructional aid for most children. It has been used effectively by teachers of music, social studies, language arts, and other subjects for appreciation; for understanding techniques and skill; for keeping abreast of new ideas, opinions, and research; and for enrichment of experiences. With the availability of transistorized radios at present, the radio has become specially valuable for remote and isolated rural communities. It has contributed significantly to the children's fund of information in these communities.



There is little doubt that the radio can be utilized for certain instructional purposes. And if the radio is to be utilized, the teacher should emphasize four important points: (1) choose the programs wisely, (2) evaluate thoughtfully, (3) listen carefully, and (4) develop standards for judging programs.

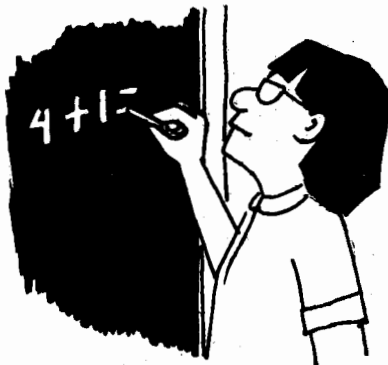
*Phonographs and tape recorders.* Recording sounds on either disc records or magnetic tape for school purposes has increased greatly in recent years. Such recordings have practically all the values derived from the use of the radio. Unlike the radio, however, it is easy to use these materials at the exact time that they are needed.

Recordings are suitable for use at all age levels of schoolchildren. They fit very well for individual or group listening. For example, in the kindergarten and primary grades, the teachers use recordings for rhythm development, storytelling, and playing games. In the higher elementary grades and high school, the teachers use them in practically all subject areas—science, music, language arts, social studies, and health. These recordings are specially useful in the teaching of speech, drama, poetry, and foreign language.

## Visual Aids

Most of the conventional and commonplace instructional materials by teachers are classified under visual aids. The development of newer complex devices does not mean that materials which have become commonplace or inexpensive are obsolete and must be replaced. The newer devices simply provide the teacher with more tools with which to add dimensions to his teaching.

*Chalkboards.* The chalkboard is perhaps the most common of all audiovisual aids in the classroom, lecture room, and laboratory. It is a medium on which words or illustrations can be written or drawn in chalk. The word *chalk-*



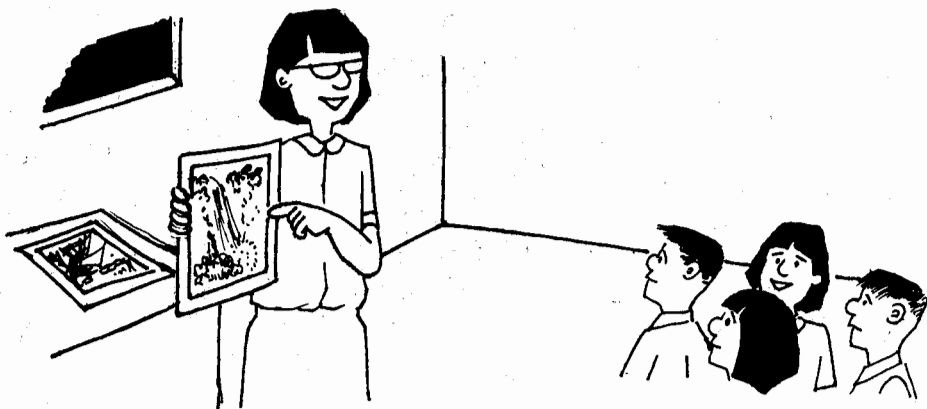


*board* is used instead of the conventional term *blackboard* because chalkboards now are mostly green to reduce the glare.

Some teachers fail to think of the chalkboard as an instructional aid, simply because it is so familiar and commonplace; yet they find it difficult if there is no chalkboard available in the classroom. Since it is perhaps the quickest, easiest, and often, the only means of illustrating some concept or principle of a lesson, teachers should plan and practice chalkboard presentations. Some of the simpler techniques in chalkboard presentations are as follows:

1. An orderly, neat presentation of material should be planned.
2. All illustrations and words should be legible from all parts of the classroom.
3. When talking at the chalkboard, the teacher or student should stand to one side so the entire class can see. A pointer should be used if necessary.
4. All distracting materials on the chalkboard should be removed or covered so that the pupils will concentrate on the material being presented.
5. Complicated drawings or illustrations should be placed on the chalkboard before class starts to minimize loss of time.
6. The chalkboards should be left clean and neat when vacating a room for the next teacher. There is nothing more irritating for the next teacher than finding the chalkboards filled up with Please Save signs.
7. The chalkboards should be cleaned well enough so that previously erased materials will not show through. Cleaning with a wet sponge will be effective.
8. Where possible, different colors of chalk should be used in drawings and illustrations.

*Still pictures.* Picture materials of many kinds serve many purposes in the teaching-learning process. They have been utilized by well-prepared teachers to make vicarious experiences meaningful to pupils. They help clarify vague ideas, especially of things, places, customs, and ideas removed from one's immediate environment (Kinder 1965). Pictures appeal to all children and adults. Throughout life a child will be "looking at" or "reading" pictures. Teachers, therefore, use pictures in motivating and vitalizing learning experiences with all age groups.



Pictures make such vivid impressions in the learner's mind that they need to be carefully selected. The teacher should have a specific purpose when selecting and using any still pictures. Often a single picture is sufficient to achieve his objective. If, on the other hand, one picture will not suffice, then he should select the key pictures which he feels will help achieve the objective. Accuracy of the picture should also be checked.

Still pictures are either nonprojected or projected. The nonprojected pictures are mostly composed of study prints, photographs, textbook illustrations, and illustrations found in magazines and newspapers. They are all much the same except that study prints are pictures which are mounted and curriculum oriented. To be classified with these nonprojected pictures are flash cards, which have been utilized extensively by teachers. Flash cards involving words, pictures, or both pictures and words have long been used for vocabulary building and drill exercises in various subjects.

Any or all of these nonprojected pictures are available in color or in black and white. They are the most numerous, inexpensive, and readily accessible to the teacher. Teachers will find it worthwhile to have a personal collection of pertinent pictures. Students who are preparing to go into teaching can begin collecting pictures while they are still in college. They will be able to use these pictures during student teaching, and these will be useful when they teach after college. This practice of picture collection could be continued for as long as they teach.

Still pictures may be projected in class. Projected pictures have the same general advantage as nonprojected ones. Projected pictures have additional advantages over nonprojected pictures. Because they are novel, pupils' attention is captured readily. The entire class is able to view a projected picture at the same time. Pupils at the back of the room are able to see it as well as the ones in front. Projected pictures, on the other hand, involve more expense because projection equipment is necessary.

There are various types of projections. These are slides, filmstrips, opaque and overhead projections.

Slides and filmstrips are pictures made on flat transparencies. A slide is projected by a specific type of projector into which individual slides are inserted one at a time. A filmstrip, on the other hand, is a continuous length of 35-mm film from as few as ten to as many as a hundred pictures; these are projected by a filmstrip projector. With a 35-mm camera and some raw film stock, the teacher can prepare these slides and filmstrips himself. However, this requires some expense. Hence, these materials are often provided by the school where there is an audiovisual center.

Where available, there are a variety of uses for slides and filmstrips. They may be used to motivate or to summarize a unit. Some materials can be made to fit developmental, drill, appreciation, and review lessons. In short, they can be used to enrich experiences in any subject area if properly integrated with the lesson.

An opaque projection is the throwing on a screen of an enlarged image of any picture, illustration, or printed material which is not transparent. This is done by a machine called *opaque projector*. One advantage of opaque

projection is that there is no need for the processing of materials to be projected. Any picture, whether in a book, magazine, or postcard, can be projected as it is.

An overhead projection is similar to an opaque projection. However, instead of throwing flat pictures on a screen as they are, overhead projection has to have pictures transferred to or drawn on plastic transparencies. In projecting these transparencies on a screen, an overhead projector is necessary. One advantage of this projector is that it is operated from the front of a fully lighted room and the teacher can write on or project transparencies while facing the class. Like other projected materials, overhead projection is most fit for large-group instruction.

*Graphic materials.* The term *graphics* is a word of Greek origin which refers to the art of expressing ideas by lines, pictures, charts, or diagrams (Alcorn 1970). As forms of instructional materials, they include graphs, charts, diagrams and sketches, posters, cartoons and comic figures, and maps and globes. In some instructional materials, one or more of these graphic forms are combined into one representation.

The part played by graphics in the field of communication is their most significant value. They are employed widely not only in education but in such fields as industry, advertising, government, and business. Through graphics, complicated information is vividly and concisely conveyed in a condensed and summarized form.

The five factors that give graphics materials such importance in the school are communications, concreteness, creativity, motivation, and economy. However, before students and teachers can profit from the use of graphics, it is important that they know how to read them. As James Kinder (1965) has remarked: "They are so important in education that the teacher who cannot read graphics suffers from a form of illiteracy; the teacher who cannot produce graphics lacks one ability to communicate." There are commercially produced graphics, but most graphics are produced by teachers and pupils in school. Requiring pupils to prepare graphic forms in relation to some lessons will develop their skill to read and interpret.

Graphics are used constantly in all areas of the curriculum. Like other instructional aids, the teacher should select the form to use, depending on the facts to be told and the group for which it is intended. Since graphics are representations of ideas, the teacher should see to it that whatever graphic material he uses is accurate in whatever it is representing.

1. *Graph.* A graph is a flat picture which employs dots, lines, or pictures to visualize numerical and statistical data to show statistics or relationships. It represents quantitative data for analysis, interpretation, and comparison. The different types of graphs are (1) circle graphs, (2) bar graphs, (3) line graphs, (4) area graphs, and (5) pictorial graphs.

Graphs should be simple and easy to read. A complicated graph is often more confusing than helpful in teaching. When necessary, labels for the graphs should be used but they should be read and understood easily. Graphs should be large enough to be seen easily

in the room where it is to be used. Where facilities are available, they can be projected. Colored graphs often give emphasis to certain derived details that might be hard to present in other ways.

2. *Chart.* A chart is a diagrammatic presentation. Facts can be built into charts that quickly clarify meanings. It saves considerable time in the presentation of facts. Charts are means of getting the pupils to think, compare, relate, and use factual information. The various kinds of charts are (1) time chart, which presents data in ordinary sequence, (2) the tree or stream chart, which depicts development, growth, and change by beginning with a single source (the trunk) that spreads out into many branches, (3) the flow or organization chart, which shows the functional relationships within an organization, and (4) comparison and contrast charts which tell a summarized story by the simple device of showing two or more sets of data in columnar form.
3. *Maps and globes.* The value of maps and globes in teaching social studies, science, and languages is universally recognized. A map results from a projection of the earth's surface onto a flat surface. It helps to reduce the scale of areas and distances on the earth's surface so that what is otherwise intangible becomes meaningful.

A globe can be very useful in the development of such concepts relating to the earth's shape, the earth's relationships with other bodies in space, the comparative sizes of nations and continents, of longitudes and latitudes, of time relation and distance, and the like. Like other graphic materials, the teacher should see to it that before maps and globes are used as teaching aids, the pupils understand the meaning of the symbols used.

4. *Posters.* Posters are forms of eye-catching graphics which are designed to convey a message quickly. They make extensive use of slogans, and they are characterized by boldness, simplicity, directness, strong color, large lettering, and often exaggeration. Although posters are used in schools largely for announcing events, promoting campaigns or issues, and reminding students, the classroom teacher can utilize them in beginning, developing, and summarizing units.

*Exhibits or displays.* An exhibit is an arrangement of educational materials for display, either outside or inside the classroom. Its main purposes are to inform, to influence, to interest, and to stimulate. Simple exhibits in the classrooms are usually made in relation to a unit. It may be used as motivation for a new unit, to visualize pupils' reports, or to summarize the findings of pupils' research undertaken in a unit.

For an exhibit to achieve its purposes, the teacher must consider certain points when preparing it.

1. It must be large enough to be easily seen.
2. It must attract attention.
3. It must be well lighted.
4. It must be built around one central idea.
5. Its captions must be short and simple.

6. It must convey a message at a glance.
7. Its objectives and materials must not be crowded together.

Of the various types of exhibits, the bulletin board display is perhaps the most common. Its function is no longer only for posting brief news items for students. Teachers utilize the board for such purposes as supplementing text materials, motivating students, developing interesting units of study, announcing new units of study, serving as a point of reference for introducing other types of audiovisual materials, and serving as a place for students' display of individual and group projects.

A museum contains professional exhibits and displays. It can be used to enrich the curriculum. To be effective, the objects in a museum must be available for pupils to examine, investigate, and study. If the museum is easily accessible, it is not wise to show to the pupils everything in the museum in one day. Only the section or part of a collection about which the pupils are studying must be shown.

*Flannel board and magnetic board.* The flannel board is a board made of cardboard or plywood covered with flannel or felt. Cutouts with the same materials as backing adhere to the surface of the board. Instead of lightweight materials, the magnetic board is made of a steelbase surface and materials glued with magnetic holders that adhere easily to the board.

The flannel board and magnetic board are versatile instructional devices. They can easily be made by the teacher. They can be used in any grade level as a communication device. Processes and procedures can be developed step by step while materials are added, taken off, or moved as the presentation unfolds. They can display some objects and flat materials more easily than bulletin boards. They have the weakness, however, of requiring special backing materials as flannel, felt, or magnet.

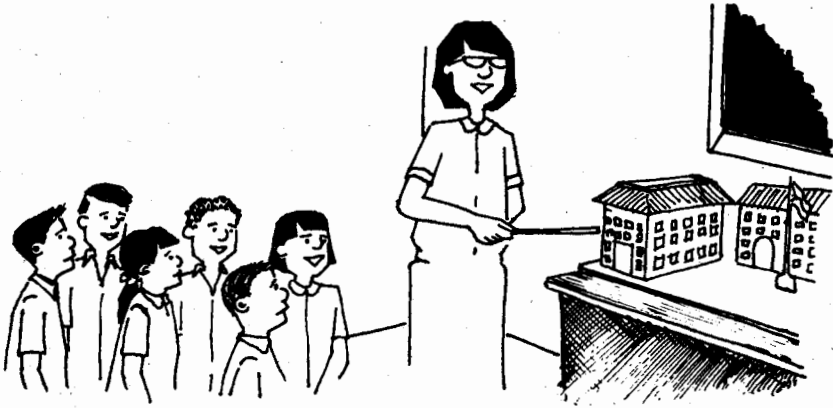
For effective use of these boards, the guidelines in the preparation of exhibits apply very well.

Objects are concrete audiovisual materials. They are three-dimensional materials which give a feeling of reality. They give a richer and more complete understanding of real things because children can see, feel, and investigate them. The most important of these instructional materials are the specimens, realias, models, and mock-ups.

*Specimens* are representative samples of some objects in the natural world. They are useful for various subjects, particularly science. Any classroom can have a collection of specimens—rocks, soil samples, leaves, insects, wood samples, and scores of other items.

Any specimen, if collected for instructional purposes, should be displayed in a part of the classroom where it can be highlighted. Its name and a brief explanation about it should be placed below or beside it.

Representative samples of artifacts of man and not part of the natural world are known as *realias*. Examples of realias are foreign coins and antique objects. Like specimens, they are important in bringing to the classroom objects for study; hence, they should be used by the teacher in much the same way as specimens.



A *model* is a recognizable scale representation of an object. It may be larger or smaller than the real object. Models are classified to (1) show the exterior form such as that of cars, housing, engines, (2) show the internal structure, such as animal anatomy and machines, (3) simulate parts such as a human body, insect bodies, and instruments, and (4) demonstrate the operation of a thing such as a machine or a power plant.

In using models, the teacher should bear in mind that these are merely representations and therefore should avoid the danger of oversimplification.

A *mock-up* is a working replica made from real or synthetic materials. It is an imitation of real things used when practice or training on the real object would be too costly or impossible due to size. Mock-ups can be used in all grade levels since children enjoy imitating the activities of adults. For example, mock-ups built to imitate fire stations, farms, or stores in the lower grades provide children with genuine learning experience.

### **Audiovisual Aids**

Three instructional devices which involve the use of both auditory and visual senses at the same time are motion pictures, television, and VTR.

*Motion pictures.* They possess all the advantages inherent in projected still pictures plus the significant feature of motion. Its chief educational value lies in promoting learning wherein movement is a necessary part of understanding. It is also an effective device in arousing pupil interest, in recreating the past, and in bringing the outside world into the classroom.

Correct classroom use of motion pictures follows the basic procedures underlying effective use of all teaching aids: (1) selection, (2) preparation, (3) guidance during presentation, and (4) follow-up. The following pointers, however, will help the teacher when planning for the use of this teaching aid.

1. Films are effective when movement is a necessary part of understanding.
2. Increased learning results when the film is introduced and its purpose and importance are explained.
3. Note taking during the film interferes with attention and thus with learning.
4. Learning from a film can be increased by repeated showing, particularly when complex situations are involved.

5. Special vocabulary used in the film should be discussed prior to showing.
6. When used extensively, films lose their appeal and are not so effective.
7. Activities planned by the teacher for the class during or after the showing are likely to increase comprehension.

Because of the expenses entailed in securing a film projector and films, this teaching aid is seldom used in many schools. However, these devices may be borrowed or rented from various sources if the teacher knows these sources. When borrowing any film, the teacher should preview and evaluate it in terms of educational objectives, potential enrichment of the curriculum, and propaganda effect.

*Television.* Educational television is considered as one of the newer instructional media. There are two kinds of telecasts: (1) open circuit and (2) closed circuit. The first is the familiar one commonly tuned in by home receivers. It is usually telecast by commercial networks or stations. The second one is not telecast on the air. Its signal goes only to specially equipped receivers. Closed circuit television is used in bigger universities.

The advantages of utilizing television for instructional purposes are well known. It possesses all the advantages of the motion pictures plus the fact that it can bring many events into the classroom at the moment they are happening. On the other hand, it has been found to possess a number of disadvantages such as (1) a TV set is expensive, (2) scheduling of classes presents problems, (3) pupils tend to become passive, (4) education tends to become impersonal, and (5) individual differences cannot be checked.

Television teaching, to be effective, must involve shared teaching wherein several teachers have complementary roles to play. Television teaching, therefore, is considered applicable to team teaching.

*Video tape recorder or VTR.* In view of the high cost of moving film materials and equipment and the sophisticated technicalities required in producing motion pictures, the video tape recorder or VTR is becoming a popular modern instructional aid in teaching. Compared with the production of motion pictures, the technicalities of VTR photography, recording, and editing is simpler and easier to learn. Except for the movement involved, the method in the production of VTR follows that of producing slides series.

## **Demonstrations**

A demonstration is a teaching procedure which may also be classified as an audiovisual device because it makes use of instructional materials and equipment. Demonstrations are most commonly used in teaching skills, showing processes, defining a problem in concrete terms, and conveying information. Like other teaching aids, demonstrations can be used effectively at various points of a unit lesson.

Since demonstrations will be used by the teacher quite often in most subjects, he should be familiar with the techniques of a good demonstration. The following are some techniques:

1. Prepare both the pupils and the materials for the demonstration. The pupils should know in advance the important things to be learned. Materials and equipment needed should be on hand when the demonstration starts.
2. Make sure that all pupils can see and hear everything that takes place.
3. See that everyone understands as the demonstration proceeds.
4. Pace the demonstration slowly so that the explanations are not rushed.
5. Whenever possible, involve pupils in the demonstration by allowing them to handle equipment and materials used.
6. Invite questions and comments.
7. After the demonstration ask students to summarize what has been learned.
8. Give assignments based on the demonstration such as drawing a picture of the demonstration or making an explanation of what happened step by step and why.

### Community Resources

Any community possesses various resources that can be utilized to enrich learning experiences of pupils. In utilizing these resources, the teacher can either bring the community into the classroom or bring the pupils out into the community. This is done by inviting resource persons or by taking the pupils on a field trip.

*Resource persons.* The most important resource of a community is its people. In any community there will always be individuals who have special knowledge and skills that they can share with students. When they are invited to school for this purpose, they are called *resource persons*. These persons can provide information not otherwise readily available and provide help in specialized projects. Among the people who might be good resource persons are policemen, health officers, college teachers, the mayor, hobbyists, businessmen, specialists, craftsmen, clergymen, foreigners, and parents.

In preparing for a resource person in the classroom, the teacher should see to it that

1. The resource person to be invited is one who is unbiased and can speak on the pupil's level.
2. The resource person is briefed on what he is to talk about and the purpose of the talk.
3. The pupils are prepared for the talk of the resource person. They must know what to expect and what to look for.
4. A large portion of the time is given to discussion and pupil questions.
5. A thank-you letter from the class is presented before the resource person leaves.





*Field trips.* The field trip is an activity wherein a group of pupils leave the classroom and go out to gather firsthand information about objects, places, people, or processes in order to enrich their learning experiences. A field trip must not be confused with such activities as picnics, sight-seeing, excursions, athletic events, and the like.

Conducting a field trip is like any other instructional activity in the way of preparing the pupils for the activity, going through it, and following it up. The teacher, however, will have to consider problems involved in field trips such as scheduling, permission from school authorities and parents, transportation, expenses, and control. It is best for the teacher to talk the trip over with his principal and get his support. The teacher will need the principal's assistance in arranging the administrative details and his authorization for the trip. Going first to the place where the class will be taken will help the teacher decide whether a field trip would be worthwhile for the pupils and whether it can be made most productive.

### **Language Laboratory**

Another important technological development in education is the language laboratory. The development of this laboratory reflects the change in the teaching of a language from the grammar-translation to the audio lingual and to the communicative approach.

What is a language laboratory? According to Kinder (1965), "it is a workshop designed to give students practice in listening, comprehension, and speaking. The equipment includes magnetic tape recorders, headsets, and microphones for students, and a switchboard and intercommunication system for the teacher." The time necessary to learn a language is relatively shortened because the student's errors can be corrected at once. Speaking ability is increased greatly because the students hear the language clearly and correctly and because students are given actual speaking practice.

Language laboratories at present have TV sets or a screen for use by students and teachers.

There is no doubt of the importance of the language laboratory in language teaching. Most schools, though, cannot afford to install such a laboratory because of its cost. However, this is not enough reason why student teachers should not be given the opportunity to master the needed technique in the use of the language laboratory in their preservice education.

## Sources of Instructional Aids

One of the major problems of teachers with reference to the use of instructional aids is where to get these materials. With the exception of some of the expensive materials and equipment discussed in this chapter, the teacher can avail himself of unlimited supplies of other materials with just a little ingenuity and initiative.

Following are some possible sources of instructional materials:

1. Various periodicals and magazines which are full of potentially useful pictures
2. Stores, factories, and commercial concerns of all sorts which give samples of raw and processed materials to schools
3. Collections of specimens and realias obtained from the community
4. Cooperative preparation of materials with students, such as flannel and magnetic boards, bulletin boards, graphics, and exhibits
5. Commercially produced materials of all sorts
6. The best sources of educational films are the Department of Education, Culture and Sports, and the various embassies in the Greater Manila area. Some of these are the United States, Australian, Austrian, Belgian, British, Ceylon, French, Italian, Japanese, Royal Swedish, Switzerland, and Spanish embassies. Films available from these sources deal mostly on art, music, natural resources, health and hygiene, medical science, mental health, safety, welfare, labor, science, social sciences, sports, travel, and recreation.

## Computers

Only a few years back, computers were a rarity. Nowadays, computers have become very popular. Computers in miniature form is now available in offices, at homes, and in schools. There are pocket-sized computers that many students now use. We have to accept that we are now in the computer age, and computer literacy is a must for all teachers.

A computer is a machine that accepts data from an input device, performs mathematical and logical operations in accordance with an internally stored program, and transfers the processed results to an output device.

The computer operates on electrical energy. It can perform certain tasks like addition, subtraction, multiplication, division, and logical operations. It can perform with high speed and its results are highly accurate. This machine can also store large amounts of information which it can recall when needed.

Because of the computer's almost unbelievable capabilities, many people feared that many human functions may be replaced by computers. The fear, however, is baseless since human beings are needed for computers to operate. Computers, by themselves, cannot give information on their own, neither can they make decisions. Information must be fed to them, and this has to be programmed by humans.



### *Use of Computers*

Computers are generally used in business and industry. Almost all big business offices and banks own computers, and transactions as well as many office routine jobs such as preparing payrolls, filing, recording, etc., are done by computers. The more up-to-date and bigger hospitals use computers, too, for many purposes. A computer gives the doctor fast and accurate diagnosis of illnesses. Even the patient's history and results of laboratory tests can be analyzed by computers. In big supermarkets and banks, cashiers and tellers are provided with computers. In air travel, computers control air traffic. The latest models in cars utilize computers. Some housewives use computers for their budgeting chores. In schools, computers are used for instructional purposes. Computers enable individual students to learn by themselves. Even whole classes can utilize computers. Through computers, learning then can be facilitated and increased enormously.

But in all these wonderful and varied uses of the computers, the human being is indispensable. Computers will be useless without the programmer or user. Man's genius is still needed in all aspects of computer learning.

Further progress and development on the use of computers is expected. The prospects of using the computer in education are tremendous. Already, computers have been used in management of school records, testing, research, and counseling.

The next decade will surely decide how much of computer education can be absorbed by our schools. At present, we have to admit that since we are living in a computer age, we cannot stop the impact of computers in education.

### **SUMMARY**

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The effectiveness of the teaching-learning process can be increased greatly through the proper use of instructional aids. Among these aids are printed materials, audio aids, visual aids, audiovisual aids, demonstrations, community resources, and autoinstructional materials. These aids are commonly referred to as *audiovisual aids* because they are sensory objects and images used to promote meaningful communication.

Instructional aids cannot teach by themselves. They need a skillful teacher to make them effective. To get the most from the use of any of these aids, the teacher must take into account four basic considerations: (1) selecting the materials, (2) preparing the class for the audiovisual experience, (3) guiding the class through it, and (4) following up the experience after its completion.

Where to get these materials is a common problem of most teachers. It is true that some of them are expensive, but the teacher can avail himself of a number of materials with just a little ingenuity and initiative.

Computers, as the most current instructional aids, are slowly but surely having their impact on our educational endeavor. It will be well for teachers to get acquainted with them and realize their various uses. Every teacher should aim at computer literacy.

**STUDY GUIDE**

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1. What are the chief uses of instructional materials in teaching?
2. What are the four basic guidelines in the use of audiovisual materials?
3. What are the instructional aids that are commonly used by elementary school teachers? by high school teachers? When can each one be effectively utilized in the classroom? How?
4. What point of view should the teacher hold with respect to the place and use of audiovisual aids in the classroom? What factors in planning audiovisual aids indicate the effective use of these aids? Where can they be secured? What are the criteria for the teacher's selection and use of these materials?
5. What is the place of the textbook in education? What are some of the important values and limitations of the textbook?
6. What are the community resources which the teacher can utilize in his teaching? What are the principles he should bear in mind when planning for the use of community resources?
7. What is a language laboratory? How important is it in language teaching?
8. What is programmed instruction? What is its psychological basis?
9. What steps must a teacher follow in the preparation of instructional materials?
10. What questions may a teacher ask to determine if the materials he has chosen are good or not?
11. What is a computer? What is the role of computers in the classroom?
12. What should a teacher strive to know about computers?

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## AIDS TO EFFECTIVE TEACHING: THE RECITATION, ASSIGNMENT, AND ART OF QUESTIONING

### OBJECTIVES

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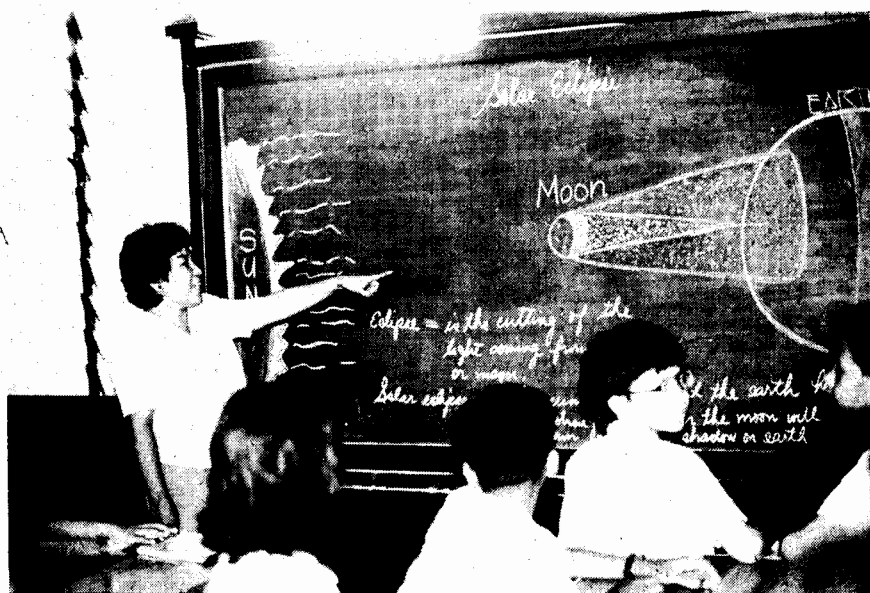
1. To explain the importance of the recitation in teaching-learning situations
2. To discuss the procedure and principles of conducting recitations
3. To conduct socialized recitations
4. To avoid the pitfalls in conducting recitations
5. To explain the role that assignment plays in the teaching-learning process
6. To state the functions of the assignment
7. To state the requisites of a good assignment
8. To state the types of assignments and when to give them
9. To discuss the principles of giving assignments
10. To evaluate assignments given
11. To explain why questioning is an art
12. To state the uses of questions
13. To state the characteristics of good questions
14. To discuss the techniques of giving questions and how to handle answers of students

This chapter covers essential tools that any teacher should use if he has to teach effectively. The teacher must know how to conduct recitations, give assignments, and make good questions. Specific suggestions, procedures, and cautions are well provided for in each area. The beginning teacher, and even experienced teachers, will find this material a rich source of information about each tool. The discussions and examples are designed to help the teacher improve his teaching techniques and procedures. Principles underlying the use of each tool are amply explained, and enough cautions regarding practices are also given. The teacher is forewarned as to what may happen if

these cautions are not heeded. A careful perusal and study of the areas will solve many of the problems that the teacher may encounter in the complex process of teaching.

## THE RECITATION

The recitation has become a permanent fixture of the classroom situation. It is the visible manifestation of the teaching-learning situation. It aids pupils in learning and clarifying abstract concepts and ideas. While learning can take place even without recitation, recitations are still very common in Philippine schools.



*Properly conducted, the recitation develops the learner's skills, abilities, attitudes, and ideals.*

Recitation has been used in all levels as an effective device for teaching and learning. The beginning teacher, however, does not automatically learn how to conduct recitations correctly and effectively. He has to develop the ability to conduct good recitations. This chapter hopes to provide the prospective teacher and those already in the field with a few pointers in conducting functional recitations. The current traditional forms of recitation are described, but the teacher is enjoined to try the current types which are believed to be better geared to preparation for democratic living.



### Rationale for the Recitation

The recitation seems to be the legitimate excuse for classroom meetings. If there were no recitations, teaching and learning would be more of the contractual form where at the beginning of the term the pupil is told the subject matter to be covered. Then dates or schedules of discussions or examinations are also set. There will be no day-to-day classroom meetings. While this arrangement is followed in other school systems in other countries, the majority of school situations particularly in the Philippines still use the recitation. At all levels, teachers and students meet to discuss or plan together, think together, and learn together. Students and teacher can disagree civilly, and criticisms, especially the constructive ones, are evaluated, accepted, or disregarded as the case may be. The recitation becomes a living laboratory for acquiring and developing democratic ideals and practices.

The importance of the recitation in learning needs no further elaboration. Teachers still believe in its efficacy as a means of developing many skills, attitudes, abilities, and ideals. If properly conducted, the recitation can serve many purposes.

The current concept of the recitation looks upon it as the occasion for developing reflective thinking, creative expression, favorable attitudes, and ideals of social living. Recitation has become the matrix for the inculcation of democratic ideals such as respect for the human personality, cooperative effort, general welfare, group responsibility, and the use of one's intelligence.

To achieve these goals, the use of the old type of recitation can hardly be justified. Much criticism has been leveled against this traditional type of recitation. It has been described as a session of lesson hearing in which the teacher merely hears the pupil "re-cite" the material he prepared at home. There is emphasis on the ability to memorize, and the best pupil is one who memorizes best. All that he does is give back to the teacher what was taught to him the previous day.

The new type of recitation is pupil centered. The pupils become the most important factor in the learning situation. All learning activities revolve around the pupils. There is emphasis on pupil involvement in planning,

executing, and evaluating activities in the classroom. The new type of recitation emphasizes problem solving and inclusion of lifelike situations in the classroom procedure. Group work, discussion, exchange of ideas, cooperative thinking, respect for individual differences, initiative, constructive criticism, application of principles learned characterize the new type of recitation.

### **Purposes of Recitation**

The recitation in present-day classrooms serves the following purposes: to develop wholesome attitudes essential to effective social living, to provide practice in democratic ideals and processes, to provide problem-solving activities that will train pupils in reflective thinking and critical evaluation, and to encourage freedom of expression and respect for the opinions of others. It is in the recitation where wholesome discussion takes place and where textbook material is supplemented by reference materials. It is this kind of atmosphere that develops creative expression and resourcefulness among pupils.

### **How to Conduct the Recitation**

There is no hard-and-fast rule in the proper conduct of the recitation. The procedure varies with the teacher and the class. There are, however, some suggestions worth remembering. Some authors refer to these as principles.

The recitation should be well planned, motivated, and purposive. It should provide for active pupil participation and self-activity. Lifelike situations should be utilized in the classroom. The good recitation should provide for individual differences. Finally, it should lend itself to evaluation.

1. Planning and organizing will insure the smooth unfolding of activities in the recitation. This is what a good assignment can contribute. Moreover, activities planned by students will be done with enthusiasm, and the relation of the different phases of the recitation can be made clearly evident.
2. The recitation should be purposive. Goals should be clear to both teacher and pupils. The reasons for activities and requirements should be explained to the pupils, and values to be derived from the activities should be discussed with them. Since classroom activities are learning situations, students should realize their significance and value. If pupils know why they are doing something, they will try to accomplish the task to the best of their ability. Motivation thus becomes intrinsic. Many recitations become dull and boring because students are made to do exercises or activities that have little meaning for them.
3. The recitation should provide for active pupil participation and self-activity. Children learn by doing. No teacher, no matter how efficient, can learn for his pupils. All that the teacher can do is to create the situations. It is up to the pupils to do the learning. Discussions, conversations, dramatization, creative dramatics, debates, buzz sessions, class meetings, supervised study are among the classroom



procedures that insure maximum pupil participation. The very nature of these activities implies pupil interaction and cooperative effort.

4. The recitation should utilize lifelike situations. If the classroom should become a laboratory for developing democratic competencies, activities that students will meet in the world outside should be chosen. Training in solving problems, involvement in planning and evaluating projects, awareness of problems of the community should be emphasized. Elections, health brigades, barangay activities, 4-H activities, church rites, vocational pursuits in the local community can be some of the situations to be used in the classroom. Use of unrealistic and foreign situations such as those found in many textbooks should be eliminated. For example, a lesson involving winter sport has no place in a hot country like the Philippines. Children in the Philippines hardly hope to see snow and skis. Stories about raccoons, moles, giraffes, etc., will not interest the Filipino child as would stories about carabaos, dogs, horses, goats.
5. The recitation should provide for individual differences. Just as the assignment provides for individual differences, the recitation should take into account the varied interests, capacities, and needs of pupils. Recitations in bright classes will not be the same as those in classes with slower pupils. Activities will vary in difficulty as well as in number. The teacher handling four classes grouped according to ability should not expect the same results from all the four classes. The alert and wise teacher should suit the activities to the abilities, needs, and interests of the class. Bright classes can very well perform creative activities without the guidance of the teacher who acts merely as consultant to these groups. The lowest section should not be expected to render good reports or conduct panel discussions without the help of the teacher. Herein comes the value of pupil planning. When pupils plan their activities, they choose those that are within their interests and abilities. Within one classroom, the teacher should be aware of individual differences among his pupils. The shy pupil needs special attention. He should be drawn out of his shell gradually. He should not be given the leading role until he has gained self-confidence. The bright pupil should be challenged enough in the recitation by giving him the difficult jobs like leadership and chairmanship in activities. The teacher should guard against expecting results beyond the capacities of his pupils. There is nothing so frustrating to the child than his realizing that he can never compete with his fellows. The child should be made to compete with himself.
6. The good recitation should provide for evaluation. There is always room for improvement, so the saying goes. All activities in the classroom can be evaluated for improvement. It is good to train the children to be critical of what they see, hear, or do. Constructive criticisms should be the order in the classroom. Children should be

taught to look for good points first before the bad points. The expressions to be used should also be taught. Criticisms can be given without hurting the feelings of others. Giving polite and discreet comments should be developed and encouraged in the classroom.

### **Conditions Necessary for an Effective Recitation**

Certain factors need to be considered to insure success in the recitation. Among these are a good environment, mastery of the subject matter on the part of the teacher, interest and enthusiasm, cooperation, and preparation on the part of the pupils.

1. Good environment means a classroom free from distractions. A quiet, well-kept, clean, well-lighted, and well-ventilated room is the ideal setting for a good recitation. How often have recitations been spoiled because of noise coming from another room or from vehicles outside the school. The teacher himself may be the cause of distraction among the pupils. His mannerisms, his habit of leaning on the blackboard or of walking back and forth, his wearing outlandish clothes with large prints and loud colors can be sources of distraction. A voice that is shrill, ill-modulated, or too soft or too low can be distracting too. Calling the attention of an inattentive pupil, interrupting someone who is reciting, and poor discipline are other sources of distraction caused by teachers.

Distractions may also come from the class itself. Inattention, mischief, and restlessness are examples. Raising the hands when someone is reciting is not only impolite but also very discouraging on the part of the one reciting. However, minor misdemeanors should not be made to distract the recitation.

2. The properly managed class is usually free from even minor distractions. The teacher who is worried that his class may ask questions that he cannot answer can never have the necessary self-confidence and composure that goes with mastery of subject matter. Pupils know when their teacher is hazy or insecure about his subject matter. No recitation can be successful if the teacher shows that he lacks mastery of the subject. Sometimes the tempo of the recitation slackens because the teacher fumbles and hesitates. Every teacher should therefore strive to have a good command of his subject matter.
3. Interest and enthusiasm are contagious. Like other emotions, interest and enthusiasm are radiated. The teacher should himself be interested and enthusiastic before he can expect his class to be. The wise teacher motivates the recitation and uses devices to arouse and sustain the interest of the class. The teacher who loves his job and who is proud to be a teacher does not get tired easily. He is happy at his work. His interest and enthusiasm will not be lessened by strain, worry, and nervousness. The old adage, a sound mind in a sound body, holds true in this case. The healthy teacher is therefore enthusiastic and alive.

Psychologically, human beings tend to repeat satisfying and pleasurable experiences. The teacher's facial expression which mirrors his thoughts and feelings has a lot to do with setting the right mood in a recitation. The teacher who is afraid to smile or laugh with his class cannot generate interest and enthusiasm in the classroom.

4. A spirit of cooperation should prevail in the classroom. If the teacher and the pupils have a cordial relationship, the pupils will cooperate with the teacher. They will look upon the recitation with anticipation and interest. The teacher who has a genuine desire to help his pupils will adopt the attitudes of a friend and coworker. The recitation, therefore, becomes a time for cooperative effort and wholesome sharing of ideas.
5. The recitation is bound to fail if pupils do not do their part. High standards of performance can be expected of pupils if recitations are properly motivated and understood. Some assignments are not done because they are either too difficult or are not challenging enough. Sometimes pupils lose interest in preparing their lesson because there is too much to do. If the lesson is not understood or is not mastered because of its length, pupils will not recite no matter how much coaxing the teacher does. The remedy lies in assigning lessons within the abilities of the pupils and giving them enough time to do their assignments. If assignments are right, the teacher can insist on high standards in the recitation. Such excuses as laziness, lack of study, or indulgence in mischief should not be condoned by the teacher. He should have a high standard of performance for all activities. Weak teachers are never liked by pupils, much less respected by them. Pupils tolerate them for a while, but not for long. Even dull pupils can discern whether their teachers are competent or not. The teacher should gain the confidence and respect of the pupils if he expects maximum performance in recitations.

One last reminder pertains to overemphasis on details and too much analysis. The teacher should concentrate more on salient points and the main ideas in the lesson. He should avoid stressing details that may clutter up the memory at the expense of major points that need remembering.

### **Cautions in Conducting Recitations**

Here are a few reminders to minimize poorly conducted recitations.

1. Pupils should recite for the class, not for the teacher alone. If pupils are to be trained for democratic living, they should be aware of the principle of general welfare. All recitations should be directed to and for the class. A mistake many teachers often commit is concentrating on the pupil reciting without including the whole class. The practice of asking pupils in front to face the class is an application of the principle of general welfare. The pupils should be trained to listen to the one reciting. The child should realize that when he recites, he has a message to tell, and his classmates should hear out the message.

2. Pupils should not be allowed to do as they please in the classroom. Good discipline should always prevail inside the classroom. No matter how well planned and how well organized the recitation is, if pupils have very bad habits of listening and are quite disorderly during the recitation, learning is negated. Classroom decorum and courtesies should be practiced all the time. Permissiveness in the classroom does not mean allowing the pupils to talk at the same time. Rules should be followed and the rights of others should be respected.
3. No one should monopolize the recitation, especially the teacher. Some teachers love to hear their voices. They do the reciting for the pupils. Pupils become mere passive listeners.
4. The modern teacher gives his pupils every chance to recite and aims for even distribution of his questions and activities. He avoids doing things for his pupils. He is at best a guide and director of activities rather than the sole performer. Group work will solve the difficulty.
5. Interrupting the pupil who is reciting discourages him in his task. His train of thought is disturbed, and he forgets what he wants to say. It is a sign of discourtesy on the part of the teacher or the pupil to interrupt the one reciting. The pupil should be given a chance to correct his errors or collect his thoughts. It must be remembered that students are using a foreign language, and it takes them some time to express themselves coherently. Corrections are better made after the recitation or during the evaluation. Children can be trained to jot down the errors and criticisms for later discussions.
6. Teachers should know how to handle the responses of pupils. There are many ways of reacting to a pupil's answers. Correcting wrong answers will take a lot of discretion and sympathy on the part of the teacher. Sarcasm and ridicule have no place in any classroom. Likewise, teachers should not rely only on the answers of bright pupils. To do so is a sure way to discourage the other pupils to recite.

Shy pupils need special attention. The more aggressive ones should be taught to give a chance to the others. Prompting should never be allowed. The teacher should respect the opinions of his pupils.

Some of these difficulties and pitfalls in the recitation can be avoided if at the beginning of the school year certain rules and regulations regarding the recitation are spelled out by both teacher and pupils. Classroom courtesy and other rules of classroom decorum should be discussed and then practiced consistently.

### **The Socialized Recitation**

This type of recitation is geared to a greater socialization of the individual. To train youth for democratic living, the elements of socialization are fostered in the classroom. This is the principal purpose of the socialized recitation. Cooperative effort characterizes the activity and the spirit of friendliness pervades the atmosphere.

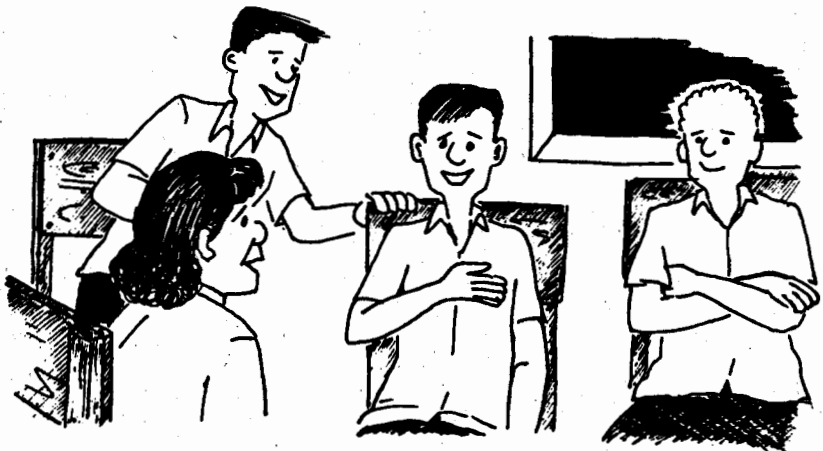
The teacher is no longer the center of attention as it used to be in the traditional recitation. He is no longer the chief actor. He is now a member of the class or even of the group. While he still plays the role of leader, he is democratic, not autocratic. He suggests rather than orders.

The children assume more responsibilities for classroom activities than they used to have. Because of this, children gain in ability to manage their own affairs. They become more independent of the teacher. There is greater pupil participation. Pupils plan, discuss, question, report, work, evaluate their activities. The teacher assumes the role of guide, counselor, consultant, and director as the situation demands, trying to make pupils learn for themselves rather than spoon-feeding them.

New knowledge is gained through discovery, not through direct telling. There is not really a change in form in the socialized recitation compared to the traditional type—rather, there is a change in spirit. There is a spirit of familiarity as against the feeling of aloofness prevailing in the traditional type of recitation where there seems to exist a demarcation line between the teacher and the pupils. Small informal groups, friendly discussions, and committee meetings are the common activities in the socialized recitation. The pupil's attitude is marked by a genuine desire to contribute to group thinking and an attempt to help solve the problem on hand.

The main aim of the socialized recitation is to enlist maximum participation from the pupils and to teach them how to live with others, to work and play together, and to share each other's thoughts, ideas, and feelings in a friendly manner. The natural interests of children are utilized and children learn by doing.

There are two general types of the socialized recitation: the formal and the informal. Formal socialized recitations are imitations of adult forms of institutional organizations. The class may stimulate a city council meeting or a court of justice, a meeting of a club, the proceedings in a business organization. Pupils participate in situations that they are likely to meet after schooling. The informal type takes the form of discussion groups like panel discussions, round table conferences, caucus meetings, single-leader group discussions, symposiums, seminars, and workshops.



### *Principles to be Observed in Conducting a Socialized Recitation*

Certain principles have to be borne in mind in conducting socialized recitations. Among these are the following:

Create a social atmosphere by arranging the room in such a way that maximum interaction among pupils is possible. Arranging pupils in a semi-circle or by groups where pupils face each other are two of the informal arrangements in class that are worth trying. Sometimes children may be allowed to sit around the teacher especially in the planning stage. Some teachers arrange the seats in small groups of tables and chairs. Special seating arrangements may be provided for a panel discussion. The idea is to allow freedom of movement. There is flexibility in the seating arrangement. Children can easily go from one group to another if there is a need for it.

The teacher should encourage pupil participation. Group work will usually take care of this. There should also be a change in leadership roles. Each child should be given a chance to become the leader. The teacher should guard against the tendency on the part of bright pupils to lead most of the time. The qualities of a good group leader should be emphasized. The good leader should be able to make his members work for the welfare of the whole group with each member contributing his share. The good leader does not do the job for his members. He gives each one an assignment to do, and each member is made to understand that it is his whole responsibility to prepare his part well.

The pupils should be encouraged to get as many sources of materials as they can. Textbook material should be supplemented by research work and additional information taken from interviews or experiences. Optimum use of the library should be made and community resources tapped. Resource persons can be consulted for possible enrichment of subject matter.

The teacher should bear in mind that the lesson is merely a means to an end. The ultimate aim of the lesson should not be lost sight of. In an effort to produce a good socialized recitation, both the teacher and pupil may be so engrossed in the mechanics rather than in the real aim of the lesson. For instance, if the aim of the discussion is the development of appreciation in poetry, the class should focus their attention on the appreciation of poetry, not on whether the participants did their part or not. Suggestions for the improvement of the mechanics are in order, but this should only be secondary.

Encourage spontaneity of expression. Pupils should learn to express themselves in their own words. Words in the material should be avoided unless absolutely necessary. Parrotlike repetition of textbook material should be discouraged.

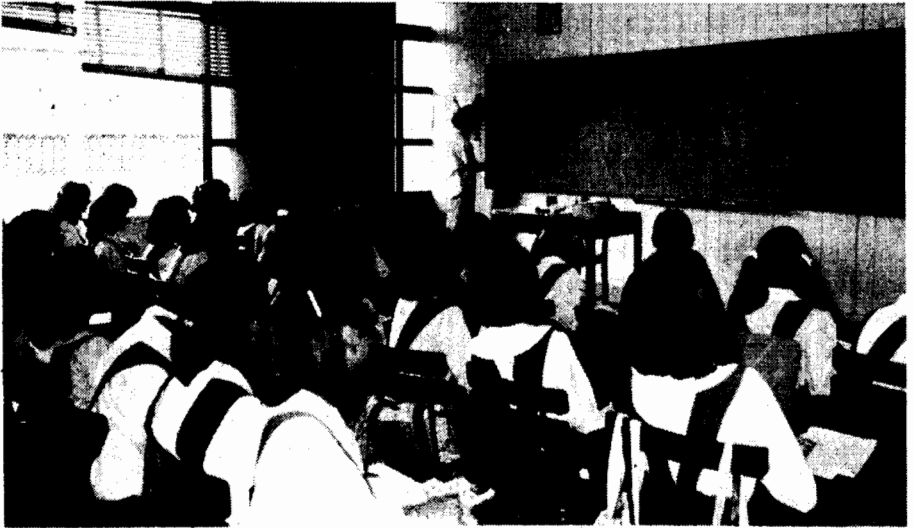
### *Outcomes of the Socialized Recitation*

If properly conducted, the socialized recitation can lead to desirable outcomes. Children learn to plan, initiate, and push through an activity or project. Initiative and resourcefulness are encouraged. Cooperation is learned and pupils and teachers get to know each other better. Respect for others as

well as tolerance for the ideas of others are cultivated. Children learn self-expression and develop self-confidence. For the more able students, practice in leadership roles is provided. Best of all, learning becomes highly motivated. Children realize the objectives of the learning activity and plunge into it without any coercion. Children realize that learning, reciting, and working with others are more enjoyable than studying by themselves.

## THE ASSIGNMENT

The value of the assignment in the teaching-learning process has long been recognized by educators. It is an integral part of any lesson. Good teachers plan their assignments well because they know that the success of any lesson depends in a large measure on the kind of assignment given to students. Students do assignments that are clear, worthwhile, and purposeful. To be able to make such an assignment is not easy especially for beginning teachers. This portion hopes to give pointers on how to make good assignments. The meaning and importance, the functions, and the requisites of a good assignment are likewise discussed. Some principles to observe in giving effective assignments are suggested and how to evaluate the assignments clinches the discussion.



*The assignment challenges pupils to answer thought-provoking questions.*

### Meaning and Importance of Assignment

The assignment is that part of the lesson which tells the pupils what they are to do and what they are to accomplish in the lesson. In the past, assignments were regarded as synonymous with homework. The modern teacher looks at the assignment as a job to be done either at home or in class: a lesson to be

studied, a theme to be written, a project to be accomplished, an exercise to be explained, a selection to be memorized, a question to be answered, an interview to be accomplished, or a review of the past lesson or lessons. Such activities are parts of the teaching-learning cycle.

The assignment is the chief means of stimulating and directing learning activities inside or outside the classroom. It helps in creating favorable attitudes toward the task to be done. Pupils take pride in their accomplishments, and each assignment completed is regarded as an accomplishment which serves to motivate the student to do better. Assignments can be the means of developing good study habits and independent work. They become deterrents to waste of time since a well-planned lesson gives specific tasks and goals to be accomplished.

### Functions of Assignments

There is no point in assigning tasks merely to keep students busy. Assignments must be purposive; it is the teacher's duty to ensure that all his assignments are significant and meaningful to students. Through proper motivation, he can establish the reasons for performing the assigned work. Once this is understood, even the few who may not have the favorable attitude toward assignments will undoubtedly work on their assignments more willingly and happily. What, then, are the functions of assignments?

The first function of the assignment is to set the goal or direction of the learning activity. The pupil must know what he is supposed to do. His task must be clear and definite to him. When pupils know the purpose of the task to be done, they perform better. One such goal may be to arouse the pupil's interest in engaging in some learning activity or project. Some assignments stimulate logical or creative thinking. Others may give training in good study habits.

Another function is to review past lessons in preparation for a long test, or it may call for organization of ideas and concepts. Some teachers tell students directly what to do. Others involve students in determining the goals of the activities. In the case of a problem, the pupils should understand the problem and know how to solve it. Enough time should be allotted to explanations, clearing of difficulties, and identification of the task to be done. The teacher gives verbal instructions or prepares guide questions. Some teachers write short assignments on the chalkboard or mimeograph the longer ones. Written assignments minimize the pupil's forgetting or misunderstanding the directions.

A second function of the assignment is to motivate the pupil and prepare him for the job to be done. This preparation includes giving the background of the activity. Here the teacher displays his skill in motivation. Pupils should know why they are doing the task assigned. They should be convinced that the job is worthwhile, and that they stand to benefit from the exercise or project. Some questions to ask at this point should be

1. Is the activity worthwhile?
2. Is the task within the interest and capability of the student?
3. Does it take into consideration the length and difficulty of the assignment?



There are varied ways of motivating the students. The teacher can use the challenge involved in the needs and varying abilities of the students, the natural tendency of pupils to see what happens, or the opportunity to develop necessary traits of character and personality.

A third function deals with setting up definite learning activities to be carried out. Interesting activities that will answer the needs of students should be chosen by the teacher. Such activities can include practice exercises to reinforce what has been taught; completion of a project begun in class; follow-up activities to develop certain traits; reading of background material for a new lesson; collection of specimens for a biology lesson; interview of a resource person for further information; research work for the solution of a problem or perhaps preparation of arguments for a debate forum. All these can do away with the monotonous page assignments so commonly given in many classrooms.

A fourth function deals with providing directions for the learning activity. Students must be given clear instructions as to procedure, sources of materials, and criteria for evaluation of the finished exercise or project. Many assignments are left undone because directions to the students are either misleading or inadequate. Sometimes books or references are not available. Problems assigned should provide means of finding out whether answers are correct or not; projects need some guidelines for judging whether the finished product is good or not.

A pupil who comprehends the details of a specific piece of work will have the necessary urge to do it. This stimulation and urge become all the more powerful when he realizes that the assignment is a natural growth of past lessons. Provided the teacher has anticipated the roadblocks and has taken time to unlock difficulties that the pupil would likely meet in the performance of his assignments, it is very likely that the latter will do his job unhesitatingly.

The fifth function of the assignment has to do with establishment of the habit of studying regularly. While the fourth function deals with how to study, the fifth function tries to make students get into the habit of studying regularly. Some students study only when they have homework or lessons to study. Regular assignments will therefore help students develop the habit of studying.

### **Requisites of a Good Assignment**

What are the characteristics of a good assignment? Authorities on principles and methods of teaching agree that a good assignment should be clear and definite, should relate new learning to the old, be significant to the learner, be stimulating and challenging, be adapted to the learner's ability, be comprehensive, and should include large units of work.

Much of the failure of students in doing their assignments may be traced to vague and carelessly given assignments. Sufficient and clear directions should be given as to what to do and how the task is to be done. Abstract principles and ideas should be buttressed with concrete examples and details. Guide questions, suggested activities, definite sources of information and how to obtain and use them should be provided. The language should

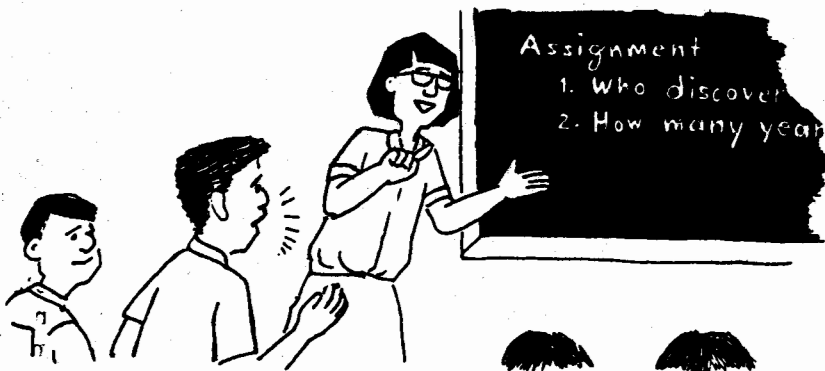
be within the level of the learner. The assignment must be explained fully if the expected outcomes are to be realized.

It is a sound pedagogical principle to take into account the past experiences of the learner. When new knowledge is presented on the basis of the old, learning becomes easier and more meaningful. The teacher must therefore endeavor to know the previous experiences of his pupils so that he can utilize them when assigning specific tasks. The past lessons, however, need not be the immediate past lesson. Any past experience having direct bearing on the assigned lesson would be pertinent and useful. This old experience thus becomes the apperceptive basis for the new learning. In explaining the task to be done, the alert teacher can draw from the varied social experiences of his pupils.

To arouse genuine interest and enthusiasm in the new assignment, the pupils should realize the value of doing the job. It is a truism that when an individual is convinced of the necessity and significance of a new task, he is not easily discouraged by drudgery or boredom. Many assignments are not done because the pupils do not see any value in their work. Some pupils do the assignment for the sake of complying with requirements, not because they know that their doing the job will benefit them in any way.

Therefore, the value of proper motivation comes into full play, and it is in this that many teachers fall short of their duty. Motivation often employed are extrinsic rather than intrinsic. Teachers make very little attempt to go further, to plow deep into the utilitarian values of an assigned task. It is through the assignment that the ultimate values of lessons for the student should be made apparent. Values that appear to be remote or intangible should be made clear and concrete. Very often teachers are satisfied with the accomplishment of immediate goals to the neglect of the true purpose of every lesson. All assignments should have some use and meaning for the student if he is expected to undertake the assigned job with zest and enthusiasm.

Much criticism has been directed against procedures that are followed in the classrooms. Critics say that there is no provision for the development of the thinking power or the reasoning power of pupils. The assignment can become an excellent vehicle for challenging the student to answer thought-provoking questions. Activities that call for the use of judgment or of reason-



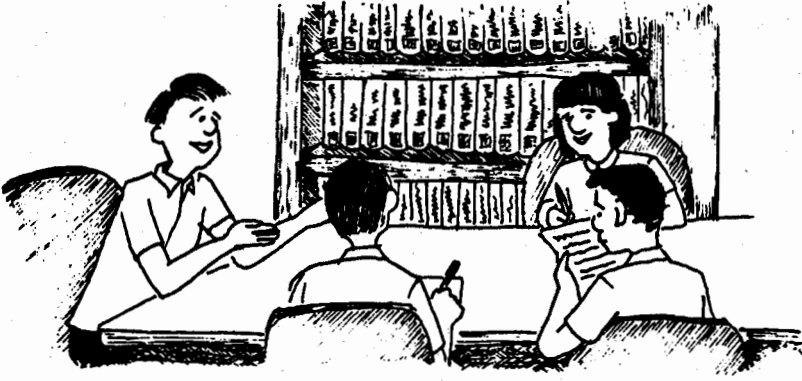
ing should be utilized in tasks assigned for homework. Jobs that are too easy or too difficult do not challenge students. Such questions as the following should provoke thinking on the part of the pupils:

1. Why was he considered a hero?
2. Do you think he was right in punishing the child? Justify your answer.
3. Prove that what he did was best for the child.
4. Could he have done the job more easily? What procedure would you have employed if you were in his place?

The assignment calls into play the teacher's ability to recognize individual differences among his pupils. The bright students should be given more difficult and challenging assignments than the less bright or the dull ones. Exceptional children can be given individual assignments suited to their abilities. Projects which would entail some expense should be assigned to children who come from better circumstanced families rather than to children who can hardly meet school expenses. Pupils who come from the rural areas should not be expected to do assignments that urban children would find easy to do because of experience. Likewise, children from rural areas will find certain projects easy to do which urban students would find difficult.

It is good practice to group children according to their abilities. For instance, in a class of varied abilities, a teacher may assign creative dramatics to the very bright group and the group next in ability may be assigned to dramatize a story. The weakest group may be assigned to do dramatic oral reading. In an arithmetic class, the brighter children may be assigned to solve more problems or to do advanced lesson. The practice of allocating minimum and maximum assignment encourages the more capable students to do maximum work. In assigning projects, children should be allowed to choose from projects graduated in difficulty. The old practice of giving only one assignment to the whole class has hardly any place in today's classrooms. Modern assignments should include a variety of activities designed to meet varying abilities and interests. Among these are committee work, group discussions, reporting, interviewing people, doing reference work, rehearsing for dramatizations, keeping records, answering work sheets.

The element of time should not be forgotten. The time available to the pupil to do an assigned task should always be taken into account. Pupils operate under varying circumstances with respect to available time. The more affluent ones are not bothered by household chores which the less affluent have to contend with every day. The brighter pupils can perform their assignments in a much shorter time than the average or dull pupils. Then, too, the teacher should never lose sight of the fact that it is not only his assignments which the pupils have to perform. Other teachers also give assignments which they expect their pupils to do. Therefore, no matter how interesting an assignment might be, it cannot be done if the pupil does not have the time to do it.



Fewer assignments covering large units of study have been found to be superior to small isolated ones. This implies more group assignments. Each member of the group may perform an individual task, yet he should realize that his job is tied up with, and not isolated from, the rest. He sees the ultimate goal to which his particular contribution is directed. Emphasis is therefore on the whole, rather than on a particular segment of learning.

### Types of Assignments

Assignments have been classified in many ways. In terms of the pupils for whom the assignment is intended, it may be individual or group. The individual assignment is the most time- and effort-consuming for the teacher since he must consider each pupil's need, interests, ability, and achievement level. Group assignments may be for a small group or it may be for the whole class. Activities in the small group assignment are tailored to the needs, interests, and abilities of the pupils belonging to a group. The class assignment involves every member of the class. Criticism has been leveled against this type of assignment since it does not provide for individual needs and interests.

Assignments may be classified also in terms of length. There are the day-to-day assignments or the long-range ones. Assignments given daily in every subject fall under the former category, while projects or activities to be accomplished over a greater length of time fall under the latter case—study assignments, panel discussions, dramatizations, debates, symposiums are examples of this type. Projects like the making of scrapbooks and relief maps, doing experiments, collecting specimens, the reading of novels, and other activities which involve some time in preparation are long-range assignments.

### Effective Assignments

An effective assignment involves planning and thinking between and among the pupils and the teacher. The teacher takes time to arouse the interest of the pupils in the activities through proper motivation. Projects and activities are initiated, planned, and analyzed with the pupils. The teacher merely steers or guides the thinking of the pupils. He may suggest some procedures or

sources of information but the choice is left to the pupils. An outline of the unit done cooperatively by the class may be helpful. The experience of the teacher will come in handy in deciding what projects to make because he can tell the pupils how much time and effort will be needed for the projected activity. He may also tell them of the difficulties to be met. His advice as to the extent and amount of work to be done will be very helpful. In other words, he acts as consultant and adviser but never the sole source of all classroom activities.

The modern assignment is a case of involvement. Pupils are never too young to give good suggestions. Sometimes the students have wonderful ideas that the teacher has neglected or has failed to see. The remark "How would you like to do this?" is much better than "I want you to do this." "Let us try this" is more pleasant to the pupil's ear than "Do this."

### **When to Give the Assignment**

There is no fixed time when the assignment should be given. It may be given at any time during the recitation when the psychological moment arises. If the assignment has no direct bearing on the lesson at hand, it may be given at the beginning of the period; if it is an outgrowth of the lesson, it may be given at the end of the lesson. Giving the assignment depends upon the subject matter, the type of assignment, and the need for it.

Giving the assignment involves another question: How much time should be devoted to the assignment? A day-to-day assignment requires a much shorter period than a unit or project assignment. The whole period or more may have to be devoted to the assignment where explanations and details are needed for the proper accomplishment of the project or experiment. Ordinarily daily assignments should take no more than ten or fifteen minutes of a 60-minute class period and from five to ten minutes of a 40-minute period. But certainly, there is no place for an assignment given a few seconds before the bell rings.

### **Pointers to Consider in Giving Assignments**

1. Make clear to the students the aim of the assigned task. They should know why they are doing the task. They will do their assignments enthusiastically if they are convinced that their assignments are worthwhile.
2. Make clear all directions, procedures, steps, cautions involved in the assignments. Many projects are not realized because instructions are not clear and definite.
3. Clear all difficulties so that learning will be smooth and continuous. Difficult and vague words or steps should be explained. Difficulties or obstacles to be encountered in the preparation of the assignments should be anticipated and discussed. Sources of data and references must be available.
4. Evaluation of the project or task should be very clear. Students should know how their assigned projects will be evaluated or graded. The bases of grading should be agreed upon by both teacher and students.

5. Assignments should not be given as punishment. Assignments should be positive, rather than negative, means of learning.
6. Provisions for enough time to complete the assignment should be given. Teachers should not compete with one another in giving assignments. It is not true that the importance of the subject is gauged by the length of assignments given.
7. Teachers should distinguish between homework and assignments. Tedious and lengthy homework should be avoided so that students will be given enough time to do their assignments.
8. Assignments should be within the ability of students in amount and difficulty.
9. Assignments must be checked. Teachers should never give any learning task that they cannot check or evaluate. Some teachers give projects like term papers that they do not check. This is most unfair to students.
10. Assignments should be varied and interesting. Projects that students like to do will be done better than teacher-imposed ones.

### **Evaluation of the Assignment**

The following list of questions can help the teacher determine whether his assignment is good or not.

1. Are the objectives of the assignments attainable?
2. Are the sources of materials available and accessible to students?
3. Are directions clear and specific?
4. Are the activities meaningful and worthwhile?
5. Does the assignment make use of past experiences of students?

## **THE ART OF QUESTIONING**

One of the teaching tools conveniently placed in the hands of a teacher is the question. And yet far too many teachers either use it carelessly or fail to see its possibilities for promoting effective learning. Even with the teaching formula of "assign, study, recite, test" of the traditional school, the ability to ask questions was a necessary art. In fact, the traditional classroom at all levels was dominated by activities of the question-and-answer type.

Although this traditional teaching formula has fallen into disrepute in current educational practices, questioning still remains an indispensable part of good teaching. There are even some who say that the effectiveness of a teacher can be gauged by his ability to ask good questions.

The question in the modern school serves a wide range of purposes. Thus this teaching technique has become more complicated and difficult with the emphasis on comprehension and intellectual understanding of facts learned. Skillful questioning involves knowledge of the various uses of the question, the characteristics of a good question, the techniques of questioning, and the techniques of handling students' responses and questions.



*Questions on the lesson arouse the child's enthusiasm and hold her interest.*

### **Uses of Questions**

What are the various uses of the question in the modern classroom? A careful examination of the different uses of the question will help the teacher utilize it to its fullest advantage. Among these uses are

1. To stimulate pupils to think
2. To motivate pupils
3. To diagnose pupils' difficulties
4. To discover pupils' interests
5. To help pupils organize and evaluate
6. To aid pupils to relate pertinent experiences to the lesson
7. To focus pupils' attention on the key points of the lesson
8. To develop new appreciations and attitudes
9. To provide drill or practice
10. To show relationships, such as cause and effect
11. To encourage the application of concepts
12. To encourage pupil evaluation

*To stimulate pupils to think.* Getting pupils to think intensively about subject matter content is a common problem of teachers. The effective use of thought-provoking questions serves well in this connection if the teacher knows when to raise the question and how to state the question. Emphasis is not upon recall of facts but upon thinking about facts in a meaningful, interrelated way. Factual knowledge is incidental to learning.

The thought-provoking question is used by teachers of all subjects, although it is probably used more often in such areas as mathematics and social studies, which are concept-centered. Here are examples of thought-provok-

ing questions relating to specific subjects. It will be noted that a quick answer is not possible in this type of questions.

Science: What good will it do us if scientists find out that man can inhabit the moon?

Social Studies: Would you rather live in a city or in a small town?

*To motivate pupils.* Questions can be used effectively to arouse and hold the interest of pupils. Questions can arouse enthusiasm for a lesson such that pupils are prepared to take up a new story or topic, and they are eager to find out something that appears interesting to them. Although questions are often used to motivate the class during the initiation of a lesson, they can also be utilized for this purpose at other times as well. For example, the teacher in a mathematics unit concerned with motivating the class to study a unit on budgeting may pose the question, Can you imagine what will happen to your mother's marketing if she does not know how to budget her money?

On taking up a unit on heavenly bodies in grade five, the teacher may start the lesson by asking Have you ever wondered where the sun, the moon, and the stars came from? Why does the moon change its shape from night to night?

An example of a motivating question to hold the interest of the class in health education after a unit on health problems has been started may be as follows: If you were the mayor of your hometown, what would you do to improve its health conditions?

A number of motivating questions can be raised by teachers to accompany demonstrations during which pupils are asked to explain the phenomena taking place.

*To diagnose pupil difficulties.* Questions can be helpful in determining the difficulties of students in any lesson. By using a wide range of question types—objective or subjective, oral or written, thought provoking or simple—a teacher will be able to obtain a valid appraisal of the pupils' specific weaknesses, indicating what remains to be done to help the pupils. For example, in diagnosing the difficulties of students in the use of the present tense, third person singular number, the following questions may be asked.

What form of the verb is used in the third person singular number?

What form of the verb is used in the third person plural number?

*To discover pupil interests.* Some random questions by the teacher may reveal what children are interested in. By encouraging pupils to raise questions, the teacher will soon find their interests, which are important factors in learning. For example:

Name some of your favorite sports.

If you were given the chance to interview astronauts, what would you like to know from them?

*To develop the ability to evaluate and organize materials or experiences.* Through questions, teachers can lead the pupils to evaluate carefully the values or



merits of the data gathered and to realize their relative significance. Examples of such questions are the following:

Was the sultan right in choosing Prince Marangal? Prove your answer.

Do you think Pedro deserves to be called a sissy by refusing to smoke? Give your reasons.

How true is the statement that Spain came to the Philippines with the cross in one hand the sword in the other?

Aside from developing the ability of pupils to evaluate, questions can be utilized further to help the pupils organize the data evaluated into a form that makes for larger generalizations. The teacher can formulate questions that will lead pupils to see relationships upon broader interpretation and conclusion. For instance, a teacher may ask the following questions regarding taxes:

What taxes have your parents paid?

What do you get for taxes paid?

Why are taxes necessary?

How does the amount of taxes raised affect the kinds of schools, roads, and other services that we have?

How are taxes used for the welfare of the community?

*To aid pupils to relate pertinent experiences to the lesson.* Children come to school with varying experiences which may have important bearing in the understanding of a given lesson. To supplement and clarify certain difficult points in a lesson, teachers can draw upon the experiences of the children through the use of questions. For example, in teaching about the different kinds of clouds, the teacher may ask:

Have you ever enjoyed watching the clouds on a bright sunny day? What did you observe?

What happens to these clouds when it is about to rain?

*To focus pupil attention on the key points of the lesson.* Some kinds of questions can help pupils pick out and remember the main ideas in a lesson. These questions can also help pupils organize their thinking about a lesson in a logical way. For example, in preparing a report about an educational trip made by pupils to the Rizal Park, the teacher may pose these questions:

What is Rizal Park known for?

Tell about it as a historical place, as a national park, and as a tourist spot.

Sometimes the class discussion may wander and become quite unrelated to the main idea of the lesson. In this case, the teacher can pose questions that will turn the pupils' thinking back to the important items in the lesson. In a math class, for example, if the discussion has strayed from the lesson, a question such as the following might be in order:

Going back to the facts you have presented, what are the advantages of savings accounts? of checking accounts? How do banks serve and help the community?

*To develop new appreciations and attitudes.* Questions can be used to help pupils modify, clarify, or expand ideas relating to appreciations and attitudes. A well-directed series of questions may awaken or change a certain type of response to a given situation and thus condition the response thereafter toward similar ideas or modes of behavior. In developing appreciation of the beauty of nature, the teacher in literature may ask the following:

What beautiful things mentioned in this poem are made by God?  
Which do you like best? Why?

How did Tom Sawyer make the boys want to paint the fence? How did he turn work into play?

*To provide drill or practice.* For certain types of learning, certain facts need to be fixed in the mind. Such facts are necessary either to continue to stimulate thought or elicit automatic response. Questions that involve frequent recall will help pupils' retention of facts. Such questions are very helpful in subjects like languages and mathematics, as for example:

What form of the verb is used with time expressions, such as *yesterday, last week, a while ago, two days ago*?

How can we find the number of times one fraction is contained in another when the denominators are alike? when unlike?

*To show relationships, such as cause and effect.* Why questions lead pupils to think about situations in relation to their causes. Such questions are important to avoid meaningless repetition of facts without real understanding of their relationships. Figuring out why story characters feel and act as they do, seeing what scientific principles explain a health or safety rule, noticing events that lead to other events in history—these involve perceiving cause-and-effect relationships. Examples of some questions of this type are as follows:

What are the causes of poor health?

How do forests prevent floods?

Why should the government regulate the cutting of trees in our forests?

*To encourage the application of concepts.* Questions can be used to help pupils see how they can apply the new concepts developed in a lesson to new situations or problems. A lesson takes on personal meaning for pupils when questions that point out the ways new ideas can be used are asked. Such questions can be used to good advantage in certain subjects. In mathematics, for example, after children have known a variety of geometric shapes, they may be taught the wide application of geometric shapes in their environment by using the following questions:

What objects can you find at home that are round, square, triangular, etc.?

Why are the wheels on your toys like a circle?

Why are the doors of your home like a rectangle?

Why are these shapes used in each particular instance?

## Characteristics of a Good Question

What makes a good question? The following criteria are characteristics of a good question:

1. A good question is simple and clear. It is so constructed that the student can easily understand what is asked, although he may not know the answer to it. The teacher must avoid ambiguity, confusing constructions, double questions, parenthetical remarks, and other verbiage which might cause the pupil to miss the point of the question. For example, "Who came while I was writing on the blackboard?" is a good question, but "Who came?" is a question that cannot be answered until the learner knows the exact time.
2. A good question is definite. It is so stated as to permit only one answer. "Who is our national hero, and why was he exiled to Dapitan?" is a poor question, for it requires two distinctly different lines of thought and should be broken into two separate questions.
3. A good question is challenging and thought provoking. It must stimulate the student to compare, evaluate, draw conclusions, and appraise results. Unless the purpose of questioning is drill, a question which can be answered by merely repeating some fact from a book can never be as stimulating as a thought question. Examples of such questions are

How can you tell that a material or an object is a magnet?

Why are insulators used in electric wires?

Why are machine-made goods cheaper than those made by hand?

4. A good question is adapted to the age, abilities, and interests of the students. The general level of ability and interests of students at various grade levels differ. Or, within an age-grade itself, there may be variations due to different home environments among pupils. There is no point in embarrassing or frustrating a pupil by asking him questions which are beyond his capacity. Neither is there much point in asking easy questions which will not stretch the intellect of bright pupils.

Examples of questions adapted to age and abilities of students are

Elementary: Show that the Philippines is favorably located.

High school: How has the strategic location of the Philippines affected her economy and national security?

College: How has the strategic location of the Philippines influenced her geopolitics?

5. A good question requires an extended response. Unless the purpose of questioning is drill, a question must not call for a single-word or phrase answer. A single-word or phrase answer tends to become the simple recall type and it could introduce the element of guessing in the classroom. This is especially true with questions that call for

either "yes" or "no" answers. If teachers will raise questions that call for answers in sentence or paragraph form, the probable results will be extended analysis, synthesis, and organization of response. For example:

How does knowledge of a worldwide system of air movements enable scientists to make a weather forecast?

Why is wind not a reliable source of energy?

If questions framed by teachers comply with the above criteria, teaching will be improved tremendously.

### **Techniques of Questioning**

Questioning requires skill. It often takes many years of classroom experience, professional reading, and self-evaluation for a teacher to be a proficient questioner. All the while the teacher must make a constant and persistent effort to improve his questioning ability and technique. Toward this end, the following techniques are suggested:

1. Questions should be asked in a natural and well-modulated voice. Questions should not be asked hurriedly nor in a way that is likely to create nervous tension in the student and thereby block the student's thinking.
2. A teacher should ask the question first and then wait for the class to think about it before calling on a student to answer the questions. In this way everyone has a chance to think before anyone tries to answer it. Students should be given enough time to formulate the answer. Furthermore, this technique will keep all the students alert. If students are appraised beforehand as to who is to answer the question, inattention will result.
3. A sufficient number of questions should be asked to stimulate students to activity. There should not be too many questions to the extent that they require a minimum of thought and the giving of very short or one-word answers. Too many questions lead to too much teacher activity and not enough on the part of the students.
4. A teacher should refrain from repeating questions. Attention is challenged when questions are not repeated. However, if for some legitimate reasons, the student did not hear or understand the question, then, of course, one has to repeat the question. This technique also applies to repeating answers. Repeating answers merely wastes time and encourages inattention.
5. Questions should be evenly distributed so that the majority of the pupils can take part in the discussion. Difficult questions should be asked of bright students. A teacher should encourage all students to share in the group thinking at all times.
6. A teacher should avoid resorting to any mechanical system of fielding questions to the class, such as by alphabetical order, or row by row. Students catch on to these devices, thus resulting in student inattention.

7. A teacher should ask questions that are really interesting and thought provoking. Leading questions, questions which give away answers, one-word answer questions, and the like may result in boredom on the part of the students.

The manner in which the teacher handles the answers of the students is as important as the asking of questions. The following techniques are suggested for the teacher to observe in handling student responses to his questions:

1. A teacher should make every effort to show an appreciative attitude toward student answers. The students should be made to feel free to do their best. They should be allowed to make mistakes without fear of recrimination, but they should not be abetted in doing careless work. When the student does not answer correctly, the teacher can ask further questions to help the student discover for himself why his original answer was wrong. The teacher should refrain from giving sarcastic comments to wrong answers.
2. A teacher should never allow wrong answers to slip by; otherwise the students will learn wrong facts and concepts. Any portion of an answer that is correct should be recognized, but any part of an answer that is incorrect should be corrected. This can be done by the teacher pointing out the error himself or by throwing the question to the class for discussion.
3. Correct answers of students should be followed with encouraging remarks by the teacher. Commendations should be judged by the nature of the response.
4. Clarity in every point expressed by the students should be insisted upon by the teacher. If a student fails to make a point clear, the teacher can ask him to elaborate.
5. Answering in concert should be discouraged. Allowing the whole class to shout the answers aloud will result in classroom chaos. It will also give the lazy or inattentive student the chance to go unnoticed.
6. A teacher should encourage students to answer in a loud and clear voice. A student's response should be heard by the other students in the class. This is especially important when the student's answer will be thrown to the class for the other students to comment on.
7. Students should be encouraged to answer in complete thought units and grammatically correct statements. Every teacher should be concerned with the development of correct expression, whatever subject he teaches. He should insist upon correct forms of expression in order that they may become habitual to the students.
8. A teacher should refrain from marking the students in his record book during the class recitation. Such a procedure is probably the worst way to handle a student's response. This will reduce the recitation to the level of traditional recitation. It will create nervous tension among students and may paralyze critical thinking and hamper spontaneity.

## Techniques in Handling Student Questions

The student, not just the teacher, should ask questions. Student questions should be encouraged because they reflect their mental activity. A student will be likely to ask questions only if the teacher will create that type of classroom atmosphere.

How should a teacher handle student questioning so that they will be constantly encouraged to ask questions? The following are techniques suggested in handling student questions:

1. Student questions should be welcomed by a teacher. If students know that their questions will be respected by the teacher, then a teacher can expect more students to ask questions.
2. A teacher should not answer a student question right away. He should first turn over the question to the class for other students to answer and probably to discuss.
3. Indiscriminate student questions should not be allowed. Trivial and insignificant questions should be dismissed by the teacher, not automatically but in a brief way such that the student will realize why the question does not merit attention.
4. A teacher should require students to frame grammatically correct questions.
5. If a teacher is asked questions he cannot answer, as sometimes happens, he should promptly admit his inability. Perhaps a student in the class does know. If not, the teacher should help the students to look up the answer. After class, he himself should look up the answer too.

## SUMMARY

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The recitation as a means of effective teaching and learning has been used by many teachers. It is a means of developing social and democratic skills and ideals. The current type of recitation is pupil centered. Pupils are involved in planning, executing, and evaluating their activities. There are better and more effective ways of conducting recitations. The teacher has to learn and develop the skills involved in conducting recitations so that he can use the recitation effectively. He should take note of the cautions in conducting recitations so that he can avoid some of the pitfalls in conducting them. The socialized recitation has advantages over the traditional type of recitation. Since recitation is an important part in the teaching-learning process, teachers should strive for effective recitations in their everyday teaching.

The assignment is that part of the lesson which tells the pupils what they are to do or what they are to accomplish the next day. It is an essential phase of the teaching-learning situation in the classroom and is a means of developing good habits of study among students. A study of the functions, requisites, and pointers of an effective assignment will help the prospective teacher take care of this important phase of the teaching-learning situation.

At present, questions are used to serve a wide range of functions; these are to stimulate pupils to think, motivate pupils, diagnose pupil difficulties, discover pupil interests, help pupils organize and evaluate, aid pupils to relate pertinent experiences to the lesson, focus pupils' attention on the key points of the lesson, develop new appreciations and attitudes, provide drill or practice, show relationships, encourage application of concepts, and encourage pupil evaluation. To be able to use questioning for any of these purposes effectively, the teacher should know the characteristics of a good question, the techniques of questioning, as well as the techniques of handling pupils' responses and questions.

### **STUDY GUIDE**

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1. Contrast the traditional type of recitation with the current type of recitation. What advantages do pupils get from the current type of recitation?
2. What are the purposes of the recitation?
3. What conditions affect the conduct of effective recitations?
4. What is the socialized recitation?
5. What principles govern the use of socialized recitations?
6. Why should assignments be given?
7. Why is the assignment an essential phase in the teaching-learning cycle?
8. Define the modern concept of the assignment. How would you differentiate it from the old view of the assignment?
9. What principles and teaching techniques underlie effectively planned and organized assignments?
10. At what stage of the class period should assignments be given? Discuss this problem in detail.
11. Why is the questioning technique considered more complex and difficult in present-day teaching?
12. What are the important uses of the question in class work? Explain your answer and give an example for each use.
13. What are the characteristics of a good question? Explain each characteristic and give an example.
14. How should questions be asked by the teacher?
15. Of what value are students' questions? How should the teacher handle students' questions?
16. How should the teacher handle students' answers to his questions?
17. What do you think are some chief faults of teachers in questioning? Explain why you consider them faulty.

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## CLASSROOM MANAGEMENT

### OBJECTIVES

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1. To explain the meaning and importance of classroom management
2. To take care of routine factors in the classroom
3. To direct and control the learning process by providing the proper learning situation
4. To explain how to maintain desirable classroom discipline

The teacher in the classroom is a veritable manager. He is at the helm of all activities, and these activities will succeed depending on how well he can steer and guide them properly. One of the most difficult problems that confront a beginning teacher is classroom management. Unfortunately, he does not learn the techniques of proper classroom management from books. He merely gets suggestions on how to manage a class, but there is nothing like teaching experience that will really teach him all the tricks of classroom management.





## MEANING AND IMPORTANCE OF CLASSROOM MANAGEMENT

Carter V. Good's *Dictionary of Education* (1973) defines *classroom management* as "the administration or direction of activities with special reference to such problems as discipline, democratic techniques, use and care of supplies and reference materials, the physical features of the classroom, general house-keeping, and the social relationships of pupils."

Classroom management includes operation and control of activities. Unless classroom procedures are spelled out carefully, much time and energy will be wasted. Such details as seating, attendance, use of instructional materials, classroom courtesies, and discipline require foresight and planning. A well-managed class is conducive to mental growth and development. Learning becomes interesting and enjoyable under favorable working conditions. Unhygienic conditions affect the health as well as the learning of pupils. The teacher is likewise affected. He can teach effectively only when conditions around him are favorable. Pleasant surroundings induce good thoughts and inspire both teacher and pupils to do their best.

Good classroom management establishes an atmosphere which permits activities to be carried on efficiently and economically. It insures wise use of both the teacher's and the pupil's time, efforts, and energies. It spells careful use of the physical facilities of the school.

## ASPECTS OF CLASSROOM MANAGEMENT

The management of a classroom includes control of its physical conditions as well as of the materials of instruction.

Some factors, though, that fall under physical conditions are not within the teacher's control; e.g., the size of the room and the location of the building. But the ingenious teacher can make even the dullest room in the building attractive, cozy, and comfortable, subject, of course, to facilities available to him and within his capabilities.

The teacher and his pupils together can plan how to make their room attractive. Curtains, flowerpots, flowerpots, picture frames, posters, and bulletin boards can be utilized to make the place beautiful. The teacher's sense of the beautiful can come into full play. Some rooms are better looking than others because of the fine taste of the teacher and the pupils.

When pupils are involved in the planning, executing, and evaluation of the project, they also help in maintaining the cleanliness and attractiveness of the room. Pupils can be grouped and assigned to take turns in keeping the room neat and orderly. Everyone, including schoolchildren, love to see materials set in their proper places in the room. Pictures should be carefully chosen and hung straight. Visual aids such as models, maps, charts, specimens, and globes should have their definite locations.

Pictures add life to a room. It would be better if pictures are pertinent to the lesson being studied; but a teacher may hang a beautiful picture merely



for its sake, especially if it contributes to the beauty of the room. Pictures should of course be changed from time to time.

In classrooms where there are no bulletin boards, pictures and posters can be displayed directly against the wall. Or the teacher may improvise display areas by means of running rolls of Manila paper across a wall or create a temporary tackboard from foam or paper-box material. Color can add to making a room bright. Cool greens and blues are suggested for the warm sunny side of the room and warm orange and yellow for the cool, shady side. A vase of fresh flowers can enliven the room. Pupils can take turns in bringing flowers for the room.

Displays on the bulletin board, murals on the chalkboard, exhibits in the display area can add cheerful color to a drab, dingy room. If students are motivated enough, they will spend much time and effort in improving and maintaining the cleanliness, orderliness, and appearance of the classroom. It is a good practice to spend a few minutes at the end of the class period to clean the chalkboards, to put the materials away, and to see to it that the room is in order for the next class.

## Lighting

The teacher cannot change the location of the windows or the chalkboards, but he can do something to improve the lighting of the room. The principal problem is to direct the light toward the pupils' work area so that glare and shadows are avoided. Pupils should not face the source of light nor should shadows fall on their work. The general rule is for the light to come from the left shoulder of the pupil except for the left-handed where the light should come from the right shoulder. The classroom should be free from harsh light and dark spots since these produce eyestrain.

Lighting and illumination should be abundant and adequate. Good lighting facilities affect the health and learning of pupils. Many factors enter into the provision of good lighting facilities, among them being the size of the room, the artificial light available, the color of walls, shades, location, and manipulation of blinds. The location and size of windows also affect room

lighting. The teacher should know the standards of good lighting. Blackboards should be placed where pupils will not face the light. They should not be placed near windows. The teacher should not stand at a place where pupils will face the light while looking at him.

Direct rays of the sun on books and shiny surfaces like blackboards and glass tabletops produce glare. Hard brilliant colors on the wall, ceiling decorations, dark floors likewise produce glare. Blinds or curtains can help minimize or eliminate glare. The teacher should constantly be on the alert for such visual discomforts during the day. Sometimes, proper manipulation of blinds can solve the problem. Pupils should be taught to manipulate the blinds and handle lighting problems. The teacher need not be bothered in the course of his teaching by such odd jobs as turning the lights on or off, pulling the shades up or down, and pulling the curtains aside. All these can be handled by the pupils. This is training in responsibility and thoughtfulness.

The physical appearance of the room can stimulate pleasant feelings, attitudes, thoughts, ideas, and appreciations essential to learning. The atmosphere can do a lot to the morale and work of the class. One author said that a pleasant atmosphere generates good thoughts and ideas, while unpleasant surroundings evoke dirty and ugly thoughts. Pupils tend to work better and longer if conditions are favorable. Learning also becomes more effective. The teacher should therefore strive as much as possible for pleasant conditions in his classroom.

### Care of Routine

A well-governed society is hardly possible without laws, regulations, and conventions. The classroom in itself is a society and needs its own rules and regulations to keep peace and harmony within it. Certain classroom activities can be made automatic in the sense that they can be performed without much thought, especially when they have become habitual. Such activities, we say, have become routinized. It is apparent that care of routine can help the teacher a lot in classroom management. There are no hard-and-fast rules as to which activities can be reduced to routine. Routinizing would depend on such factors as size of the class, the nature of students, materials available, arrangement of equipment, and the like.

There are certain advantages in routinizing activities and these are economy in time and effort, prevent confusion, and promote learning activity. Much time is wasted on administrative activities that are not handled in a well-organized manner. Activities that are repeatedly done may well be routinized so that pupils will know exactly what should be done.

Some disadvantages should, however, be mentioned if routine factors are overmechanized. If every little activity in the classroom is mechanized, no room for initiative is left to the pupils. They may behave like automatons and certainly creativity is destroyed. The teacher is reduced to an autocratic general and the pupils are regimented soldiers who merely wait for the chief's signal or command. Such a situation leads to blind obedience and acceptance of rules and procedures. This type of atmosphere must be avoided by the teacher.

Certain classroom activities, though, can be routinized so that more time can be devoted or allotted to more significant activities. The main goal is to save time and effort. Pupils should be made to understand and learn the value of time. The old saying that time is gold should be clearly impressed on the minds of children. Activities that are administrative in nature can be handled systematically so that minimum effort and time are spent. Among these activities are the roll call, seating, handling materials and devices, classroom courtesies, and responses to the bell signals.

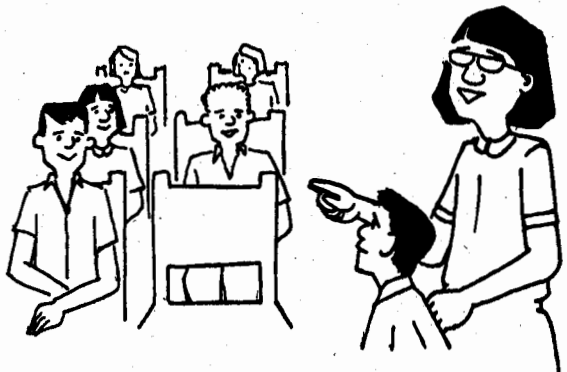
Calling the roll can be time consuming if the teacher checks on every child by calling his name from the registry book. Permanent seats should be assigned as early as the first few days of classes. Absences can be noted very quickly by referring to a seating plan. A good time to check attendance is at the beginning of the period. This will encourage pupils to be punctual.

Some teachers assign secretaries or monitors to record absences on either the attendance chart or in the record book. This practice relieves the teacher of having to do this. The teacher can start promptly and get the work going quickly and effectively. Excuse slips for absences and tardiness can be taken care of before or after class. Better still, the secretary can be trained to record such excuses.

As early as grade one, pupils can be trained to record absences. In a first grade class that the writers observed, attendance was checked by pupils themselves. As soon as the class entered the room, the customary greetings were given, after which the leader of each row went down his respective row to do the health inspection as well as to note the absences. Each leader gave this type of report to the class: "I am glad to tell you that everybody in my group is clean. Nobody is absent." The leader then went to the board to fill out the attendance chart. In another class the teacher assigned a child for the whole month to check on tardiness and absences and to note these on the seating plan. Other devices may be thought of and used by the teacher. The idea is to minimize the time spent on calling the roll, if not eliminating it.

For cleanliness and better discipline in the classroom, seats should be assigned permanently. The traditional way of having long rows of seats is now being replaced by informal seating arrangements. Children are seated at small tables or at long tables, de-

pending on what equipment is available. Chairs with arms may be formed in a semicircle. The arrangement scheme does not matter. What is important is to assign more or less permanent seats to avoid confusion. This seating arrangement soon becomes habitual with children. Grouping children according to ability necessitates flexibility in the seating arrangements. At intervals, seats may be changed,



but only after the teacher has memorized the names of his pupils. Special cases like pupils hard of hearing or who are nearsighted or farsighted should be attended to. These pupils should be assigned seats according to their individual needs.

For economy of time and effort, children should be taught how to distribute and collect materials. Books, pamphlets, notebooks, workbooks, supplies, or paper should be distributed according to a plan cooperatively arrived at by both the teacher and the pupils. At the beginning of the school term, it is best to lay the problem before the class, and rules and regulations formulated by pupils should be tried out and consistently followed if found effective. It would be wise to experiment with different procedures to determine which one is best from the point of view of economy of time and effort.

Someone should see to it that chalk is always at hand. Erasers should be clean and within easy reach of the teacher. Books needed for each lesson should be readied before the start of classes. All laboratory equipment should be carefully checked in advance and arranged conveniently so that classroom procedures can go on smoothly without confusion and misdirected energy. Sometimes, much time can be saved by mimeographing materials that otherwise would have to be dictated or copied.

Courtesy in the classroom should be observed at all times. Students should realize that there is always time enough for courtesy. No amount of enthusiasm or interest in the activities can tolerate discourtesy. The teacher and his pupils should formulate rules that should appreciate the values attained from an orderly and polite class. Such expressions as *please, thank you, I'm sorry, excuse me, I beg your pardon* should be automatic with both teacher and pupil.

The teacher himself should be the model of courteous behavior. If he expects to elicit courteous behavior from his pupils, he should be the first to be courteous. Sometimes teachers take it for granted that pupils should perform such acts of courtesy as greeting, erasing the board, and picking up something for the teacher and forget to acknowledge such favors with a nod of the head or a *thank you*. No teacher can be too busy to thank a child who has handed him a ball pen that fell on the floor or who has erased a used chalkboard without having been asked to. Even in the midst of an explanation, he can pause for a brief moment to say "Thank you." It is not uncommon to find pupils greeting the teacher and the latter not acknowledging the greeting. This is sad.

In the classroom the children should be trained to listen to the one reciting, not only because the pupil has a message to deliver but also and more importantly, because it is the polite thing to do. There should be no raising of the hand when somebody is reciting; and when someone is recognized by the teacher, all hands should be put down. Children should also be trained to speak softly but loud enough to be heard by the last child at the back row. Loudness of voice may often be mistaken for rudeness. Children should be taught to wait for their turn.

Children should be helped to realize that it is polite to share their ideas with others; hence, they should always remember to face the class when



reciting and to listen to the person speaking. Boys should be trained to be polite and courteous to girls. They should practice opening doors for them, helping them carry their things, allowing them to precede them in corridors and offering seats to them. On the other hand, girls should be taught to acknowledge these small favors with a gracious "Thank you," to greet boys politely, and to behave graciously before members of the opposite sex.

Some other class activities can be routinized. Beginning the class, listening, going to the blackboard, entering and leaving the room, responding to bells, seating, depositing things—all these can be done in an orderly fashion. Children should be trained to go to their respective seats, to deposit their books under the chair or desk, to pull out materials needed for the first class, and to get ready for the lesson.

Responses to the bell should be routinized too. When the bell rings, all should be seated quietly in their seats and begin their work immediately. The teacher should begin the lesson promptly too. There is nothing so disconcerting as the teacher who wastes some ten minutes hesitating to start the lesson. Pupils will respond to bells automatically provided the teacher does so.

It is not easy to have good classroom management. Several factors need to be considered, and conditions vary with different schools and situations. The problem becomes especially complicated with new teachers; however, the capable teacher will try to overcome difficulties, develop good habits among his pupils, and achieve excellent classroom management in due time.

Good classroom management results in the development of desirable character traits among pupils, the creating of a permissive atmosphere in the classroom, and finally in better teaching-learning situations.

### **Directing and Controlling Learning**

One aspect of classroom management deals with the guidance and direction of learning processes. The teacher who takes full charge of a learning situation should manipulate the learner and the situation to produce the desired learning. Manipulation implies arranging the learning situation so that the learner comes face to face with the stimulating problem. While it is true that most teaching tends to foster teacher domination, manipulation, and intervention rather than the development of a genuine helping relationship,

teachers can learn to dominate less and get students to participate more. It is good practice for teachers not to repeat their questions, answer their own questions, or repeat answers of students.

Some teachers tend to be autocratic or authoritarian. Research findings show that democratic teachers produce better learning results than those who dominate, control, or manipulate learning situations. Teachers should determine the psychological needs of their students and adapt their teaching styles accordingly. The teacher who encourages a two-way communication in the classroom insures a favorable teaching-learning climate. To understand better the complexities of learning and classroom behavior, classrooms must be pupil centered rather than teacher centered.

## DISCIPLINE

The other big aspect of classroom management has to do with the proper conduct of pupils in the classroom. This is referred to as *classroom discipline*. The teacher should not only take care of routine factors; he has also to maintain good discipline in his class to achieve good classroom management.

Good (1973) defines *discipline* as the process or result of directing or subordinating immediate wishes, impulses, desires, or interests for the sake of an ideal, or for the purpose of gaining more effective, dependable action. Discipline becomes an important factor in the development of character. It implies systematic training of the physical, moral, and social capacities of the child. In common parlance, discipline is understood in terms of punishment, control through obedience, and orderly behavior and self-direction.

Applied to classroom instruction, *discipline* has been taken to mean any means adopted by the teacher for the orderly behavior of pupils. But this concept of discipline has been changing radically. The old concept of the traditionalist, that of keeping pupils quiet, can no longer stand in the present classrooms.

Present-day authors agree that a classroom has good discipline if the children are earnestly and eagerly performing particular activities for the accomplishment of a desirable goal. Pupils enthusiastically pursue their tasks without restraint from the teacher. This concept implies wholesome activity, not the absolute quiet of the pindrop concept. There may be noise emanating from the hum of activities. This is all right since each pupil is intent on accomplishing his job.

The ultimate function of discipline is to help the child develop good moral character. It must help attain right behavior. Such character traits as obedience, responsibility, diligence, perseverance, fair play, respect for the opinion of others, and cheerfulness should be developed. Discipline should provide opportunities for training the intellect, the emotions, and the will. Above all, discipline should help the child develop desirable habits leading to self-discipline. Parents and teachers may not agree as to how much control and direction are needed, but both agree that children should be taught how

to discipline themselves so that they may take their places in society as responsible, law-abiding citizens.

### Principles of Effective and Constructive Discipline

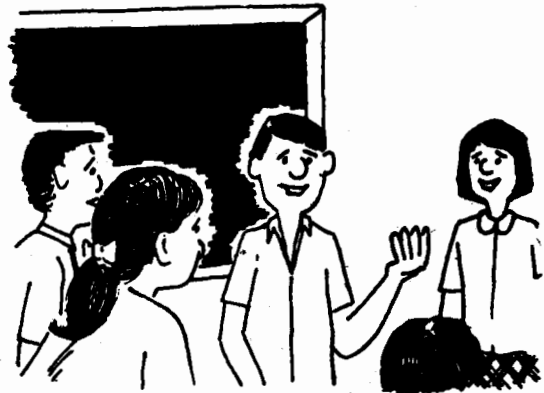
Many authors have set forth basic principles underlying effective discipline. The most important of these principles are discussed here.

The teacher should be responsible for his own class discipline. The able teacher tries to solve his own problems. Pupils will respect him more if they see that he can handle classroom misbehavior. He should resort to sending pupils to the principal only when they commit serious offenses like theft or those that may lead to a suspension or dismissal from school. These cases merit the principal's attention because the teacher cannot order the suspension of a pupil from class.

The teacher should provide a wholesome atmosphere which results from orderly and adequate classroom conditions. He sees to it that order is maintained in the classroom. No matter how interesting and important the lesson is, pupils should observe proper classroom decorum. Enthusiasm is no excuse for rowdiness and unnecessary noise. Consideration for others should never be overlooked. Sometimes classes become so engrossed in their own activities that they forget that classes in other rooms are also going on. Children should learn to control their emotions and actions.

Effective discipline aims for self-direction. The Constitution states very clearly that one of the main objectives of education is development of personal discipline. The teachers should stimulate worthy motives and give the pupils every opportunity to direct their own efforts. The rules of conduct can be worked out by the pupils themselves. Measures to check if the rules are being followed or not should be their responsibility too. Adherence to rules they formulate will not then be difficult.

Self-control can be taught like any subject in school. Self-direction develops slowly. Situations calling for the exercise of self-discipline should be provided. The key is consistency and persistence. A child should obey rules at all times and should not be allowed any exception. Persistence is equally important since it is only in correct repetition that good habits are formed. Encouraging pupils to take responsibility for doing things develops self-discipline. Participating in group activities whether as leader or follower will give the child the opportunity to exercise his self-control. He should be made to realize that in life outside the school, the person who has self-discipline can adjust to his environment more easily. Dealing with others involves a lot of self-control since no two individuals behave in the same way. If a child can get along very well with his classmates, if he can tolerate others and respect their wishes, ideas, and even their idiosyncrasies, he is going a long way toward developing his self-control.





Discipline, to be effective, should be vital, meaningful, sympathetic, and humane. The child should know why he is called upon to conform to certain rules and regulations. The advantage of proper conduct in society should be very clear to him. He should realize that developing desirable habits will be of value in his future life.

Pupils' rights should be respected. The teacher should be aware of these rights. In dealing with pupils even when they have erred, the teacher should be friendly, humane, and sympathetic. He should understand the nature of the child and endeavor to see things from the child's own point of view. Pupils do not resent punishment if justly and humanely given. The dignity of the human being should be maintained at all times even in meting out punishment. Pupils resent being treated like criminals. The teacher who can rebuke with a kind, soft, and sympathetic voice wins the love and respect of his pupils. A humane teacher will never embarrass a pupil and will give him the benefit of the doubt. In other words, positive measures for disciplining the child are superior to negative ones.

Effective discipline should be based on the tenets of democracy. The Philippines is a democratic country. The schools are charged with the responsibility of producing efficient, democratic citizens. The principles of democracy should therefore be basic in the life of a child in school as well as in society. Consciously and deliberately, teachers should inculcate democratic ideals if pupils are to take their places effectively in a democracy. The principles of general welfare, civil liberty, consent of the governed, appeal to reason, etc., should be lived by children in school.

A child should learn to think of his personal life in terms of others. He must see his place in a group. The welfare of others should govern his actions. Self-denial for the good of others is worth cultivating. The child who has learned to subordinate his interests to the interest of the group is learning how to live in a democratic society.

Many have mistaken notions regarding individual freedom in a democracy. Freedom in a democracy means freedom with restraint. It is not doing anything that one pleases. Reasonable restrictions are welcome to young people, and even the rowdiest will follow rules that are just and reasonable to him. Restraint without freedom is tyranny; freedom without restraint is anarchy.

The concept of equality is often misunderstood too and becomes a cause of misbehavior in the classroom, especially when pupils believe that an act of injustice has been committed against them. Pupils should be made to see that individual differences exist. As a matter of fact, no two individuals are exactly alike—not even identical twins. Each individual has his own strengths, abilities, and potentialities. Equality means providing each individual the same opportunity to develop his potential and to allow him to contribute his share to society. This implies that the teacher should be aware of individual differences, and that he should give each child an equal share of his attention, guidance, and direction.

The premium put on the intelligence of the individual calls for the use of reason in many situations. When the teacher allows the pupils to formulate

rules to govern their conduct, he is actually manifesting his faith in the ability of his pupils. When he metes out punishment only after due investigation, he believes in giving the child the chance to reason out and defend his actions. When the teacher allows the pupil to choose, he gives him credit for the exercise of his judgment and intelligence. When in the classroom the teacher calls for a pupil's opinions, he believes in the worth of the other's ideas and decisions.

### Types of Disciplinary Problems

It is difficult to classify behavioral problems of children because several factors are involved in each type of misdemeanor. Factors like unwholesome home environment, poor training and upbringing, desire for attention, lack of self-control, weak personality of the teacher, autocratic procedures in the classroom, and problem parents need be considered before any offense can be classified as serious or less serious. Classification, however, is not very important. What is necessary is for the teacher to determine the cause or causes of problems so that remedies can be applied. The following is a list of the most common problems to be met by any teacher, particularly the new teacher. Inattention, whispering, laughing, giggling, clowning, joking, playing, talking, discourteous language—all these may be taken as less serious offenses. Among the more serious ones are cheating, lying, stealing, defiance, impertinence, stubbornness, malicious destruction of property, physical attacks, and bullying.

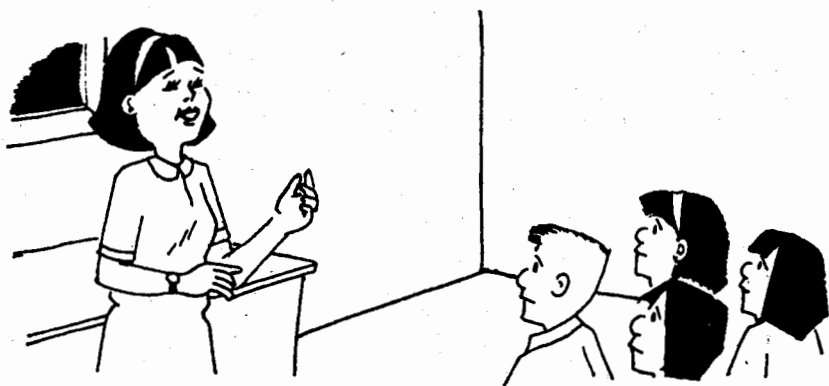
As implied in the previous paragraph, an offense may be serious or less serious depending on the circumstances. A teacher with a strong personality or one who has sufficient experience will be able to deal with most of these offenses. Good classroom management can eliminate many of the common misdemeanors in the classroom like inattention, talking, or whispering. Often an interesting lesson can prevent many forms of misbehavior. In planning activities for the lesson, the teacher should foresee the reactions of the pupils so that those which will surely cause problems can be changed or eliminated.

### Causes of Disciplinary Problems

It is easy to solve problems of discipline if the causes of misbehavior are properly diagnosed and studied. Constructive discipline is feasible only when a thorough identification and study of the causes is made by the teacher. Punishment meted out can be termed commensurate to the offense only when the cause of the offense is known. Here are some causes suggested by different authors.

*The teacher factor.* A teacher can be a potent factor in discipline. The impact of the teacher's personality upon the pupils stems from two aspects, namely, the teacher's personal characteristics and his scholastic qualifications. The former includes his physical, mental, and moral characteristics.

Physical characteristics include the teacher's personal appearance, poise, health, and habits of neatness and cleanliness. A teacher who possesses good habits of neatness and cleanliness can be the model for his pupils to emulate. Everybody respects and admires a well-groomed and healthy teacher. The



teacher who has good poise can develop the same in children. One's physical health can become a serious problem in discipline. If a teacher is suffering from a chronic disease, say asthma or ulcers, he will be often late or absent.

A mentally healthy teacher can contribute a lot to the proper emotional development of the children and to the atmosphere of the classroom. Many incidents in the classroom can just be laughed off by a tactful teacher. If he laughs them off, he can prevent many disciplinary problems. A mentally alert teacher is quick to make decisions. He uses foresight in planning his activities. He has insight into the abilities, needs, and interests of his pupils.

A morally upright teacher deals with his pupils fairly and justly. He possesses strong will power and conviction. He is a person of integrity and dignity.

The social characteristics of a teacher include his understanding of the nature of the child, his ability to deal with others, and his genuine sympathy and care for the welfare of others.

The teacher's attitude may affect the pupils favorably or adversely. If the teacher is irritable and "flies off the handle" easily, if he has favorites, or if he is overbearing, he is likely to stir resentment among his pupils, who in turn may cause many disciplinary problems. On the other hand, if the teacher is friendly, helpful, cheerful, and humane, he need not worry about having behavior problems.

The teacher's scholastic qualifications include academic preparation, mastery of subject matter, command of the language, cultural background, and experience. Pupils seem to have more confidence in teachers who have adequate preparation for teaching. It becomes imperative, therefore, for the teacher to continue growing professionally so that he can inspire confidence in his pupils. Mastery of the subject matter is an important factor in discipline. Children begin to get restless the moment they feel the teacher is not so sure about his teaching. Pupils are quick at noticing hesitancy, uncertainty, and insecurity in their teachers.

The teacher who shows evidence of mastery of subject matter stimulates attention, and his pupils become careful even in their asking of questions. Immediately the confidence of pupils is drawn and a feeling of security is aroused—security in the sense that their teacher is going to teach them the right things in the course.

The teacher's command of the language can be the source of problems in discipline. Pupils begin to be unruly when teacher stammers or stutters. They imitate his *ahs* and *ehs* or even keep a tally of these. Speech defects are quickly noticed and counted against the teacher, especially when influenced by regional intonation. It may not be fair but somehow pupils and, parents too for that matter, expect the teacher to be perfect or nearly perfect. They do not easily condone the shortcomings of their teachers.

The teacher with a wide cultural background and experience can enrich his subject matter. A teacher who intersperses his explanations with pertinent anecdotes, stories, or incidents enlivens the recitation with a variety of activities. Ennui, inattention, restlessness, and listlessness on the part of the pupils should be the least of his worries.

*The pupil as a factor in discipline.* The teacher's proper understanding of the nature of the child is a prerequisite to good school discipline. Maladjustments, behavior problems, and poor attitudes have causes. The teacher should be alert to recognize symptoms in order to determine or identify their causes.

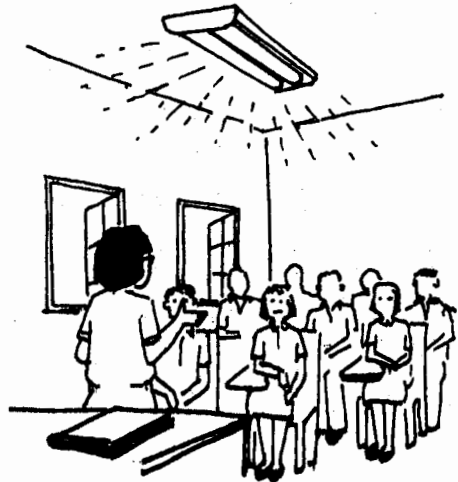
Knowledge of the basic characteristics of children at different levels will help the teacher prevent misdemeanors by anticipating the probable reactions of pupils. Like the teacher factor, the pupil factor involves the physical, mental, social, and moral aspects.

The pupil may be hard of hearing, a cripple, or a hunchback. Such physical handicaps can cause problems of discipline. Pupils who are poor in health can be irritable, restless, or morose. Lack of mental ability, emotional immaturity, irresponsibility, unwholesome fears, poor habits, poor home environment, lack of interest, stubbornness—all these are likely causes of disciplinary problems.

Inadequate social training results in such acts as lying, stealing, vandalism, and immoral conduct. Sometimes the child's desire for sensationalism or recognition may cause him to play the role of a glorified but rather undesirable hero. Resistance to authority or control of any kind can cause many misdemeanors such as truancy, defiance, discourtesy, or disrespect for elders.

Spotting these causes is not an easy job, but the teacher has to learn how if he is to solve disciplinary problems arising from the pupil factor.

*School as a factor in discipline.* It is the consensus that a wholesome school environment is conducive to learning. Writers also agree that unclean surroundings evoke ugly thoughts, and a clean atmosphere can stimulate beautiful thoughts and ideas. Rooms that are properly ventilated, well lighted, and attractive can pre-



vent many classroom disturbances. Poor classroom management invites disorder and minor misbehavior such as whispering, note writing, indifference, and moving from one place to another. Lack of facilities and lack of suitable textbooks also affect discipline.

The school administration is also a factor in discipline. It is not amiss to say that sometimes the teacher encounters disciplinary problems because of unfortunate administrative policies, regulations, or practices. Laxity in enforcing school regulations can develop bad habits among children. Students learn to be careless about observing regulations, respect for authority, and assuming responsibility. Regulations relative to tardiness, attendance, and interruptions of classwork should be clearly stated and strictly followed.

### Improving Classroom Discipline

It has been stressed time and again that good classroom discipline is indispensable to an effective learning situation. All teachers, old or young, old or new in the service, are faced with problems of discipline.

It is true that some teachers can maintain better discipline than can others. It is suggested that the best approach should be positive rather than negative. The best measures should be preventive rather than remedial. "An ounce of prevention is worth a pound of cure," so the saying goes. This adage is exactly what should guide the teacher. Knowing the possible causes of disciplinary problems, the teacher should strive to eliminate them.

When disciplinary problems do arise, however, they should not be ignored. They should be treated from the social point of view that regulations exist for the purpose of enabling the whole group to work to advantage. Minor disturbances can often be controlled with as little fuss as possible. Often a shake of the head of the teacher or a glance in the pupil's direction will make him stop. The important thing to remember is not to let noise or disturbances continue. The practice of stopping the recitation until everybody is listening will make pupils realize that the teacher means business, that they have to pay attention.

Aggressive disorder should be dealt with positively. Among the desirable measures suggested are personal conferences with pupils and parents, giving disorderly pupils special responsibilities, keeping everybody busy with wholesome activities, proper motivation, use of devices, loss of privileges, isolation from the class, and change of activity. Less desirable measures include detention, demerits, sending pupils to the principal, suspension, and assigning menial tasks.

Negative or ineffective measures which should be avoided are sarcasm, threats, forced apology, punishment of the group for the offense of one or a few, ridicule, nagging, embarrassment, name calling, humiliating remarks, and corporal punishment.

Corporal punishment is not allowed in Philippine schools. The *Service Manual for Public School Teachers* gives specific rules and regulations regarding school discipline. Any prospective teacher will be greatly benefited by an intensive study of these provisions pertinent to discipline.

## Suggestions and Tips for Classroom Discipline

The following suggestions and tips can be most helpful to the new teacher, but even experienced teachers who are poor in classroom discipline may benefit from them:

*Classroom management.* Classroom management is a major responsibility of the teacher. Many a brilliant teacher has failed because he has not learned to manage the class properly. Classroom management includes care of routine factors and classroom discipline.

Establish good routine habits and keep pupils busy. Stand at a place in the room where everybody can be within your gaze. Be alert to detect any signs of boredom, discontent, or misbehavior. Call on pupils who do not pay attention or who may begin to be disorderly. Never let a class know that you cannot control them. Use your voice to advantage. Firmness and forcefulness in speaking can make pupils attentive. Pupils know by your voice whether you are pleased or not. Remain calm and well poised even in an emergency.

The teacher would want to know if the measures he has adopted to attain good discipline will work or not. Jean Dresden Grambs and John C. Carr (1970) suggest the following questions:

1. Are students developing the ability to obey rules because they understand what is reasonable?
2. Do students help one another in those situations that demand self-control? Does this helping occur because of concern for one another or because of a promised reward or a threatened punishment from the teacher?
3. Does the need for the teacher to exercise control diminish as the group continues to work and learn together?
4. Can the students accept a substitute teacher or the unexpected absence of the teacher during the period without becoming disorganized or having to be held down by teacher threats?
5. Can the students develop their own rules of behavior and follow them fairly well?
6. Can students and teacher talk calmly together about class disturbances not anticipated in the rules and arrive at mutually acceptable compromises?
7. Are students who seem to be the source of major problems of discipline being helped by group acceptance or by outside guidance from a teacher or specialist?
8. Does the teacher enter the classroom feeling relaxed and in a mood for work? Does this atmosphere develop during the semester?

It would be well for the teacher to take stock of his ability to discipline his class by frequent self-evaluation. He should find out which measures are effective and which are not. As the teacher grows in experience, he should also improve in his ability to manage and to solve disciplinary problems of the class.

*Punishment.* Punishments should be adjusted to the offender and the offense. Never punish a whole class for the offense of one individual. Be sure

to find out who should be punished. Sometimes the culprit remains stoically calm, while all the others are shaking with laughter. A punishment should be swift and, if possible, be a natural consequence of the act. Never punish in anger. Be sure the child understands why he is being punished.

*Attitude.* Show the right kind of interest in your pupils and in their schoolwork. Chat with them, but do not allow overfamiliarity. Be genuinely interested in the problems of your pupils and help them in the best way you can. Be generous with your praises, and be sincere about them. Never flatter.

*Personality.* Dress and behave in a manner that becomes a mature individual of your position. Remember you are a model for your pupils at all times and in all places. Be genial, amiable, and friendly with your pupils, but always maintain a dignified reserve. Avoid gossip. Never talk about the deficiencies of your coteachers or those of your pupils. Make pupils believe and trust in you. Never promise anything that you cannot do. Above all, learn how to smile. A smile can disarm the most hardened offender.

## **SUMMARY**

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The classroom cannot function well without the teacher. The success of the activities in the classroom depends on the ability of the teacher as classroom manager. He takes care of two aspects of classroom management, namely, care of routine factors and classroom discipline. The prospective teacher will gain a lot from a serious study of the suggestions, principles, and practices of classroom management given in this chapter. Constructive measures of discipline are worth trying in solving disciplinary problems in the classroom.

## **STUDY GUIDE**

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1. What aspects of classroom management affect the learning process most? Why?
2. Why should certain procedures be routinized?
3. What is constructive discipline?
4. How should punishments be administered?
5. What are the causes of disciplinary problems? Discuss each.
6. What tips in classroom management can help the teacher in maintaining classroom discipline?

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## ASSESSING INSTRUCTIONAL OUTCOMES

### OBJECTIVES

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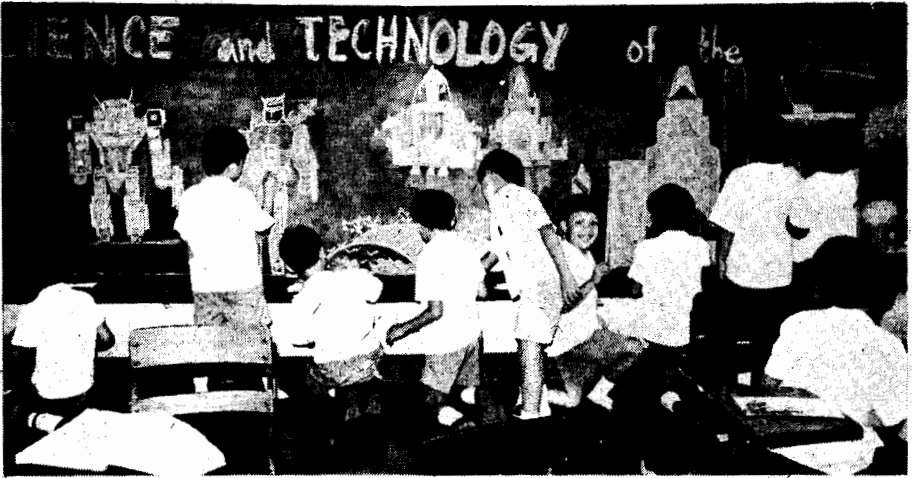
1. To explain the meaningful nature of evaluation
2. To enumerate and explain the purposes of evaluation
3. To describe how appropriate evaluation procedures may be selected to assess pupil's/student's mastery of set instructional objectives
4. To identify an effective evaluation program to
  - a. explain the principles underlying the evaluation process
  - b. state the characteristics of an effective evaluation program
5. To compare norm-referenced with criterion-referenced tests

Which experiences were effective in promoting learning? Did the pupils develop adequate skills? Were the teaching methods and techniques adequate in helping the learners pursue their goals? How successful were the teacher's efforts in contributing to the realization of the fundamental objectives of education? These are the kinds of questions that continually confront the conscientious teacher at all levels—elementary, secondary, and tertiary—as he plans and guides learning in his classes.

Widespread interest in evaluation has led to the systematic study and appraisal of our educational program at all levels of education from elementary through college. Policies and plans for action based on the results of these appraisals have led to many forward-looking changes in the work of the schools and to improvements in the community.

An educational program may be evaluated most satisfactorily by studying it "in terms of its philosophy of education, its individually expressed purposes and objectives, the nature of the pupils with whom it has to deal, the needs of the community which it serves, and the nature of our democratic life of which it is a part" (Burton and Brucckner 1947).





*Intelligent evaluation based on accurate measuring devices gives a complete picture of the child's growth and development.*

## MEANING AND NATURE OF EVALUATION

Evaluation is a continuous process of inquiry concerned with the study, appraisal, and improvement of all aspects of the educational program. The most ideal is for this process to be carried out cooperatively by all concerned with the growth and development of children.

It is the process of determining the changes in the child as a result of teaching and of his experiences. It is a systematic attempt at ascertaining the amount of progress made in the education of the child toward the realization of objectives of education. It is an act of judging the child's acquisition of all forms of learning outcomes based not only on the definitive data of the child's subject matter achievement in the learning of facts, skills, and abilities but also on descriptive, qualitative data about his personality changes such as social attitudes, interests, ideals, ways of thinking, work habits, and personal and social adaptability.

On the basis of the information about the growth and development of the child, suitable evaluative procedures and instruments can be prepared by all concerned to find out the effectiveness of the whole educational program in terms of meeting the needs of the individual learners and the community as a whole.

## IMPORTANCE OF EVALUATION

Evaluation is important to the teacher, the child, the parent, the administrator, and the profession as a whole. The teacher continuously evaluates the effectiveness of his teaching in order to improve procedures and techniques and to understand his pupils better. The child who goes to school has the

right to know what progress he is making, whether or not he is attaining the goals he has been helped to set up for himself.

The administrator is eager to determine the effectiveness as well as the inadequacies of the educational program he has endeavored to set. The parent has the right to know the progress his child is making in school. He has as much responsibility as the teacher and the administrator in helping determine the extent of the progress of his child.

## SCOPE OF EVALUATION

Evaluation involves the determination of the goals toward which educational efforts are directed and the determination of instruments and techniques to be used in appraising the degree of progress toward these goals. More specifically evaluation is concerned with

1. The scope and quality of the goals, purposes, and functions of the total educational program and the extent to which these meet the needs of the various individuals and the community as a whole.
2. Evaluation is concerned with the progress being made in the achievement of these goals as measured not only by the characteristics and behavior of the learners, but primarily by the growth that they have made in attaining socially desirable objectives both as individuals and as members of the larger social group.

The process of evaluation includes the appraisal of all elements of the total teaching-learning situation that contribute to effective and economical learning with a view to improvement. This embraces (a) the organization and administration of the school, (b) the school curriculum, (c) the teaching-learning process, (d) the instructional materials, equipment, and faculties, and (e) the community life and social community relations.

## GENERAL PRINCIPLES

The greatest benefit can be secured from an evaluation program by following certain general principles:

1. *Evaluation should be in terms of the extent to which the pupils have attained the objectives of education.* These objectives include not only mastery of subject matter but also the growth in physical and mental health, ability to get along with others, use of critical thinking to solve problems, efficiency in using skills, competency in the creative arts, wide interest in many fields of human endeavor, and ability to use knowledge gained.
2. *Objectives should be defined in terms of pupil behavior.* This refers to a behavioral analysis of what a pupil should be able to do after successfully completing a unit of instruction. Behavioral analysis is the breaking down of higher level objectives into component parts, each of which must be mastered to eventually lead to a final behavior expected of the pupil.

3. *Evaluation is an integral part of the educative process.* The teacher should guide every experience in terms of the needs and interests of the group as seen in life situations. Evaluation forms the basis for decisions as to the nature of the next experience needed by the learner. The day-to-day appraisal helps the teacher in deciding how to guide on-going experiences and when to introduce new ones.
4. *The evaluation program should be cooperative.* Learners, teachers, and parents should participate in the process of evaluating educational objectives.
5. *Records should give a complete picture of each child.* Growth as a continuous process can be seen only when adequate records give a complete picture of the child as he develops under the care of the teacher. Records, however, should not be considered as ends but as service tools to help the teacher understand the learners with whom he is working, to help the learners to interpret behavior, and to define immediate and long-term needs.
6. *Evaluation should be comprehensive.* It should take into account the learner's individual character, his background, and the immediate environmental factors. Data should include the individual's health, physiological needs, emotional adjustments, mental characteristics, talents and aptitudes, values and attitudes, social relationship and competence, ability to function effectively in his environment and in the whole realm of his interests, aspirations, and goals. Records should show the learner as a developing personality, including both positive and negative aspects of the learner's development.
7. *Evaluation uses a variety of instruments, tools, and techniques.* These instruments should be valid, reliable, and practical from the standpoints of time, effort, and facilities of the school. There are teacher-made and standardized tests, anecdotal records, rating scales, samples of pupils' work, sociograms, diaries, and journals. The teacher should choose the technique suited to the individual pupil concerned and to the specific purpose for which the evaluation is being made.
8. *Objective measurement and subjective judgment are both essential in evaluation.* Records should be specific and, as far as possible, objective. Subjective estimates are made objective by the inclusion of specific incidents and illustrations.
9. *Diagnosis and remedial work are phases of the evaluative process.* Test results should be used for the improvement of instruction. Results should be carefully interpreted and the necessary follow-up work should be done accordingly.
10. *Evaluation should be descriptive.* Although the use of terms like *superior*, *good*, *average*, and *poor* is better than the use of figures, these terms still leave much to be desired from the standpoint of evaluation. A descriptive concrete statement about the child is more meaningful and significant to teachers, to parents, and to children than any blanket judgment that merely indicates that the child has passed.

## DIFFERENT ASPECTS OF GROWTH TO BE EVALUATED

For evaluation techniques to be improved, there must be agreement on what are to be evaluated. The total development of the child should be the first concern. The different major aspects of growth include (1) mental and physical health, (2) social adjustment, (3) purposes and activities, (4) intelligence and readiness, (5) quality of thinking, (6) integrative knowledge and skill, (7) interest in many fields of knowledge and endeavor, and (8) individual aptitudes and creative art. All these should be included in the evaluation program.

There is general agreement that a child should show satisfactory development in social, mental, and physical maturity commensurate with his chronological age. The child should grow in his ability to attack problems analytically and to think critically. The analysis of thought processes is difficult and complicated but teachers can watch for improvement in the children's ability (*a*) to select the significant from the trivial, (*b*) to connect ideas and draw conclusions, (*c*) to ask intelligent questions, and (*d*) to do some critical thinking. The child should show increasing ability to use the work skills and increasing comprehension of material being studied, organizing it for use, and adapting it to his purposes.

There should be evidence of the child's ability to get along with people—children and adults alike—under many and differing conditions. He should learn to cooperate with others and adapt himself to group situations.

Examination of the activities children are engaged in as individuals and as groups and the purposes promoted through these activities will give a clear picture of the child as he develops socially, mentally, and physically.

## CHARACTERISTICS OF AN EVALUATION PROGRAM

An evaluation program should be designed to cover as many important outcomes as possible. This should include a variety of methods for securing and recording the evidence. Through observation during class discussions, individual committee reports, and supervised study, the teacher learns a great deal about each pupil.

Tests still provide the more concrete and detailed evidence. Tests yield evidence in a convenient form. The important thing, however, is to recognize that tests should be used to supplement, rather than to supplant, the evidence collected through observation. Accordingly, an important aspect of teaching skill is the ability to devise suitable tests for specific outcomes and to integrate the use of tests into the sequence of learning activities.

Both the learning activities and the appraisal procedures should be based on clearly defined outcomes. Learning situations should provide opportunities for useful observation. Some situations should be specially designed to reveal understanding, critical thinking, and ability to apply what had been learned. Tests, though designed primarily as a means of evaluation, may also be used to stimulate. Stated in more general terms, the procedures used to measure pupil progress are those required to obtain evidence of pupil progress toward educational objectives.

## EVALUATION DEVICES

There are various techniques in evaluating pupil growth as specified in our goals. The effectiveness of these techniques depends upon the skill of their user.

*Self-evaluation Techniques.* There are several ways by which children may be guided to do self-evaluation. They can be encouraged to keep diaries, preserve samples of their work, and keep records. They can compare recent achievements with records of earlier achievements. They may also rate themselves on an appropriate checklist at intervals of time. Self-evaluation develops in the child self-control, self-direction, and wise judgment.

*Teacher Evaluation.* Evaluation includes a variety of methods for securing and recording the evidence needed to provide information on pupil progress. The teacher who is completely aware of what he is looking for collects evidence from practically all learning activities. He continually collects information on the child's progress. To do these, he utilizes observational procedures, teacher-made tests, standardized achievement tests, and achievement test batteries.

*Observational Procedures.* The teacher, in his daily contacts with pupils, collects information as revealed in discussions and other situations. Such information is very valuable. However, there is the possibility that records may not be available when the teacher needs them and important behavior may be overlooked. Standard procedures have been adapted to guard against these possibilities. The most commonly used of these are anecdotal records, checklists, and rating scales.

*Anecdotal records.* Many teachers find it convenient to keep a pad on their table ready for note taking. This pad is designed for two kinds of entries: what happened and what it probably means. Any interpretation of the meaning of behavior is tentative and subject to revision as more anecdotes are collected. For example:

What happened: In a discussion of how carpenters use instruments to make linear measurements, Jose offered to bring his father's rule that is calibrated to tenths of an inch.

Interpretation: This indication of interest is encouraging because Jose had not been cooperative in the past.

With continuous practice, a teacher can become sufficiently skillful in keeping anecdotal records to make routine observation an effective evaluation procedure. When a teacher has become accustomed to using these records, his observations will be more detailed and accurate. In addition, he will have a permanent and useful record of pupil behavior.

*Checklists.* A checklist is a list of the kinds of behavior to look for. A teacher usually makes use of a checklist if he feels he may be neglecting certain outcomes, or if he has any pupil who exhibits the desired behavior. Below is an example of a list assembled by a teacher of mathematics:

Are pupils willing to do work beyond what is required?

Do pupils voluntarily bring items of mathematical interest to others?

Do pupils demonstrate pleasure in their own or others' mathematical activities?

Do pupils demonstrate pleasure in their own or other discussions?

Do pupils volunteer reasonable generalizations?

Do pupils show pleasure in analyzing problems?

*Rating scales.* In order to record an appraisal along with his behavioral observations, a teacher may make use of a rating scale instead of a checklist:

*Example:*

	<i>Never</i>	<i>Occasionally</i>	<i>Frequently</i>
Does work beyond requirements			

Or it may look like this:

<i>Does not turn in assignments</i>	<i>Turns in assignments if urged</i>	<i>Turns in assignments of his own accord</i>	<i>Does work beyond assignments</i>
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It should be emphasized, however, that specialized observational procedures are time consuming. The choice of what data to collect depends on whether the information is really needed and whether it will be used.

### Teacher-made Tests

Several types of test questions have proved their value in teacher-made tests of computational ability, vocabulary, information, understanding, and other specific outcomes. These types are the short-answer, multiple choice, matching, and true-false questions. A teacher who wishes to be competent in designing tests should know the purpose for which each type of question is best suited and the special techniques for constructing these questions.

*The short-answer question.* This type of question comes in a variety of forms and is known by a variety of names. There is the incomplete sentence form: "A garden is 72 square metres. If it is 9 metres long, then it is \_\_\_ metres wide." Then there is the question form: "What is the difference in stopping distance between a car going 40 kilometres per hour and a car going 50 kilometres per hour?"

These various forms measure essentially the same thing. Experience indicates that the short-answer forms are more easily read and less confusing than any other type of question. However, other kinds of questions may be used to provide interest and variety and to serve special purposes.

The short-answer type of question is limited, however, to questions that call for facts—who, when, where, and how many.

*The multiple-choice question.* The multiple-choice question type is the best general-purpose question for testing outcomes. It is the most widely used

type of question in standardized tests, largely because of its flexibility and the fact that it can be scored objectively—that is, anyone who scores it using the answer sheet will arrive at the same results. In teacher-made tests, the multiple-choice question is useful for measuring ability in vocabulary, reading comprehension, interpretation of graphs, formulas, and tables, drawing inferences from a set of data, and understanding of concepts and relationships.

*Matching-type questions.* An interesting variation of the multiple-choice question, and one which the teacher can use for a number of special purposes, is the matching-type question.

This type of question is widely used in pairing off such things as definitions and words defined, or measurements and formulas. Three of the more important points to watch for in constructing questions of this type are (1) the list on the right, from which selections are made, should contain more items than the list on the left; (2) to make it simpler for the pupil who knows the right answer to find it, possible answers should be arranged alphabetically, chronologically, or in some other systematic way, and each item should be short; (3) the questions should be homogenous; that is, no item on the right should be logically excludable as an answer to any item on the left by a pupil who is uninformed.

*True-false questions.* True-false questions lend variety and interest to informal testing activities. It is easy to construct, interesting to the pupils, easily scored, and it arouses discussion. It is useful when performance of the pupil on any one item is not an important consideration.

## Standardized Achievement Tests

An achievement test is designed as a sampling of skills or abilities in a specified area. A standardized test is one in which the performance of an individual, or the average of the class, may be compared with that of a larger population. The uses to which a standardized achievement test may be put are best seen if the differences between the standardized test and the teacher-made tests are examined. Standardized tests have limitations in the sense that it is often difficult to say what the norms mean. They represent an average of pupil performance from a cross section of different kinds of schools in various parts of the country. It is therefore meaningless to compare the performance of any given class with this average unless the nature of the cross section is kept in mind.

Standardized tests also share the limitations of teacher-made tests with respect to outcomes that cannot be measured in this way. They are not useful for measuring interest, appreciation, ability to think critically, or even the efficiency of the procedure used by the pupil in getting answers.

Standardized tests are limited still further because their coverage includes only what is common to all the courses of study and textbooks that are examined in determining the test content. Any unique aspect of a given course of study is omitted. Therefore, anyone using the test must examine it carefully to determine the extent to which the coverage of the tests corresponds to that of local curriculum.

These limitations indicate that **standardized tests** are not intended to replace teacher-made tests in measuring pupil progress toward objectives set up for the class. They are intended, rather, to provide supplementary information on the progress of the class as it compares with a larger population.

### **Achievement Test Batteries**

It is typical for a pupil to do better in one subject than in another. Some teachers are more skillful in teaching one subject than in teaching another; this is reflected in the performance of their pupils.

Achievement test batteries are designed to determine the comparative performance of a pupil, a class, or even a school system in practically all areas of the school program; performance in each area is compared with a national norm. They are commonly made up of sections, each covering an area such as reading, mathematics, science, araling panlipunan, and health.

## **ADEQUACY OF THE EVALUATION PROGRAM**

The adequacy of an evaluation program is measured by its effectiveness in the operational control of classroom activities and the quality control product. Important identifying marks of a good evaluation program are the following:

*Integration with learning activities.* Evaluation is an integral part of the instructional program. Effective teaching is possible only if pupil progress is appraised in terms of such outcomes.

*Selectivity of outcomes evaluated.* Evaluation is so time consuming that it would be impossible to incorporate in an evaluation program a complete appraisal of all outcomes. Outcomes to be omitted, however, should be selected only after a careful consideration of priority and the purpose for evaluation.

The term *comprehensive* is often used to describe a program of evaluation which has considered all the desired outcomes and selected the most important points for evaluation. The term *balanced* is frequently used to describe a program in which all of the priority objectives are evaluated, and the emphasis is distributed among them. These characteristics are both prerequisites of a good program.

*Systematic administration.* Observational procedures are continuous and are made a part of the learning activities. Pupil progress, however, may be systematically measured by more formal testing which should take place at regular intervals. To do this, a schedule for the more formal testing should be set up in advance and vigorously adhered to.

*Provision of information for effective records and reports.* A properly designed evaluation program should be provided for an effective system of records and reports. Pupils and parents should be continuously and fully informed with regard to pupil progress. The records that should accompany pupils when they transfer to another school should be comprehensive and adequate. This would be impossible without a good evaluation program.



## CRITERION-REFERENCED MEASURES

The emphasis in education on changed behavior in the student implies that there is greater emphasis on content usage and on content application rather than on content recall. The stress is on what the student does with content that he learns rather than what he is able to remember when asked about it. Hence, educational objectives are expressed in behavioral terms: what are to be learned are listed as behavior to signify the *can do* (cognitive) and *does do* (affective and psychomotor). The gathering of evidence of success or failure is therefore a crucial and integral aspect of the instructional process itself.

These developments necessitate a restatement of educational objectives in terms of pupil behavior specified and arranged in hierarchies of complexity. Clear objectives provide focus for the evaluation and tests to determine the extent to which the purpose of an educational program is being achieved. Objectives, then, should be continually defined, simplified, or specified until they are stated in testable form. Testing becomes the means to get feedback on the student's mastery or nonmastery of the criterion objective. The tests, then, should be based on the objectives themselves. In this sense the test may be called criterion or proficiency measure.

### Criterion-referenced Measurement

Criterion-referenced measurement is a test that measures whether a learner has mastered an instructional objective which is specific, observable, achievable, verifiable, and interpretable. In this way, it is possible to evaluate the success or failure of the activity by means of direct measurement.

A criterion-referenced test is deliberately constructed to yield measurements that are directly interpretable in terms of specific performance standards. It is used to ascertain an individual's status with respect to some criteria rather than with respect to individuals; the meaningfulness of the individual's score is not dependent on comparison with other individuals.

A criterion-referenced test is constructed to provide a measure that is interpreted in terms of a specific performance level. It serves the purpose of assessing to what extent an individual's performance has met a certain criterion. It indicates what an individual can do, not how he compares with others.

### Distinctions Between Criterion-referenced and Norm-referenced Tests

One cannot easily distinguish a criterion-referenced test from a norm-referenced test by just looking at its items. W. James Propham and T.R. Husek (1969) point out that the distinction between the two tests is not easily made by inspection of particular instruments. The distinction can be noted by examining these points:

*Purpose for which a test is constructed.* The criterion-referenced tests are specifically designed to provide information that is directly interpretable in

terms of specific performance standards. Such performance standards are established prior to the test construction. The purpose of testing is to assess an individual's status with respect to the standard. The results of such tests yield measurements for an individual and can be interpreted without referring those measurements to other individuals or norm groups.

*Manner in which test is constructed.* The desired outcomes are specified in terms of performance in the criterion-referenced test but not specified in the norm-referenced test before it is constructed. The easiest and the most difficult questions are discarded in the norm-referenced test, which is not done in the criterion-referenced test.

*Specificity of information yielded.* Through a process of analysis and synthesis, one can identify with some degree of confidence the class of tasks that can be performed in a criterion-referenced test. The task domain measured by the criterion-referenced test is defined in terms of observable behavior. The test contains representative examples of the performance domain tasks from which competence is referred.

*Generality of test performance information.* The criterion-referenced test consists of items of reasonable length so that generalization about test performance of an individual can be inferred in terms of specific types of problems an individual learner can or cannot perform. The norm-referenced test does not have such a problem since there is a judicious deduction of items which results in variable scores which spread people out.

*Use to be made of tests results.* In the criterion-referenced test, the questions of what a learner can do and the type of problems or difficulties he faces are answered. In the norm-referenced test, the learner is compared to another learner or to the group. The scores in the norm-referenced test, as cited above, spread people out.

Rey Maxlye (1972) distinguishes a criterion-referenced test from a norm-referenced test in terms of the number of questions each kind of test is capable of answering. The criterion-referenced measure depends upon an absolute standard of quality, while the norm-referenced measure depends upon a relative standard. An absolute standard is the sole criterion and is predetermined in evaluating the significance of a child's score. The relative standard depends upon the comparison of an individual with another, using the same measure. A criterion-referenced measure can answer the following:

1. What do they know?
2. Where are they going?
3. What did they learn?
4. What do they need to know before they learn?
5. How can they learn?
6. What conditions hinder learning?

### **Steps in the Preparation of Criterion-referenced Tests**

As mentioned earlier, a criterion-referenced test is a device for obtaining a sample of a learner's behavior. For valid results, the behavior that is sampled must be in harmony with both the instructional objectives and the subject matter emphasized in the instruction. A satisfactory sample is most likely to

be obtained when the preparation follows a systematic procedure. The following steps are suggested:

1. State the general instructional objectives and define each objective in terms of a specific type of behavior which the learners are expected to demonstrate at the end of the instruction. The instructional objectives have these four basic characteristics: (a) description of the learner, (b) description of the behavior, (c) specification of the conditions of learning, and (d) performance level.
2. Make an outline of the content to be covered during instruction.
3. Prepare a table of specifications that describes the nature of the test sample.
4. Construct test items that measure the sample of the learner's behavior specified in the table of specifications.

## THE USE OF THE TABLE OF SPECIFICATIONS

A major step in ability test construction is the preparation of a table of specifications. It is a two-way or one-way table with one axis to represent the subject matter content and another the type of behavior or mental ability the test intends to elicit. Each of these broad categories deals with the complexity of the objectives and depends partly upon the degree of detail which the examiner wishes to perceive in his tests. In other words, it is a test indicating the terms of the subject matter and the mental processes of the instructional objectives whose achievement is to be evaluated.

### A. Steps in Constructing a Table of Specifications

1. List the subject matter which has been taught after a definite period of time in terms of units, problems, area, etc.
2. Determine the objectives, specific knowledge, or skills to be evaluated.
3. Find out the number of recitations spent for each subject matter, units, area, etc., taught and the total number of recitations.
4. Find out the total number of test items desired to be administered. This depends largely on the nature of the test and the length of time spent in teaching the subject matter or discipline.
5. Find out the number of items for each subject matter as well as the objectives by dividing the total number of recitations and the questions multiplied by the number of items on the test.
6. Distribute the number of items for each subject matter among the different objectives—cognitive, psychomotor, and affective.
7. Construct the test, observing the principles of test construction. Take care to group together questions belonging to a specific instructional objective.

### B. Steps in the Construction of Objective Tests

1. Draw up a table of specifications.
2. Decide the scope of the test.
3. Draft the items in a preliminary form.
4. Edit and select the final items.

5. Rate the items for difficulty.
6. Break the items into alternative forms.
7. Arrange the items in a rising order of difficulty.
8. Prepare the instructions for the tests.
9. Make the answer key.
10. Decide upon the values for scoring.

### C. Identification of Objectives

Guidelines in identifying the objectives and in preparing the table of specifications:

1. Each objective should be written in terms of observable and measurable aspects of human behavior.
2. Objectives of the test should require the pupils to do several kinds of tasks as follows:
  - a. Recall the most important pieces of the specific information the learner is expected to commit to memory.
  - b. Generalize and draw conclusions both from the information the learner has remembered and the information provided for.
  - c. Apply new learned generalizations to new and familiar situations.
  - d. Discover and reveal relationships between newly learned information and information previously learned.
3. Prepare the table of specifications indicating the objectives for the areas of instruction the teacher decides to evaluate. The one-way or the two-way table of specifications should be prepared depending upon the subjects to be tested or the particular response to be taught.
4. The rationale behind the table of specifications can be stated thus:
  - a. It serves as an examination guide.
  - b. It indicates content validity.
  - c. It shows comprehension reporting of pupils' strengths and weaknesses about the test.
  - d. It guides the teacher on how to administer the test and specifically the number of items to be placed in certain objectives of instruction.

### Sample Tables of Specifications

The following are examples of tables of specifications:

- A. One-way table of specifications in elementary agriculture, grade five, indicating areas of instructions and number of recitations

<i>Area of Contents</i>	<i>Number of Recitations</i>	<i>Number of Items</i>	<i>Test Placement</i>
1. Definitions of terms	7	8	1-8
2. Fertilization a. Natural fertilizers	3	3	9-11

<i>Area of Contents</i>	<i>Number of Recitations</i>	<i>Number of Items</i>	<i>Test Placement</i>
b. Commercial fertilizers	4	5	12-16
c. Compost pits	3	3	17-19
3. Kinds of crops			
a. Leafy vegetables	5	6	20-25
b. Vine crops	5	6	26-31
4. Garden characteristics ideal to planting			
a. Topography	4	4	32-35
b. Fencing	3	3	36-38
c. Water supply	6	7	39-45
	40	45	1-45

*Note:* To get the placement, study the formula below.

$$\text{Test placement} = \frac{\text{No. of recitations}}{\text{Total recitation days}} \times \text{Total no. of items}$$

- B. Two-way table of specifications in elementary agriculture, grade five, indicating objectives to be tested and the contents

<i>Educational Objectives</i>	<i>Disposal of Garden Products</i>	<i>Care and Fertilization</i>	<i>Related Activities</i>	<i>Total</i>	<i>Test Placement</i>
	15	10	15	40	
A. Cognitive					
1. Knowledge	4	3	4	11	1-11
2. Comprehension	3	2	3	8	12-19
3. Application	4	2	4	10	20-29
4. Analysis and synthesis	3	2	4	9	30-38
B. Affective					
Change in attitudes					
Appreciation or valuing	5	3	4	12	1-50
<b>Total</b>	19	12	19	50	39-40

**Computation:**

$$\text{Test} = \frac{\text{No. of recitations}}{\text{Total recitation days}} \times \text{Total number of items in test}$$

$$= \frac{15}{40} = .375 \times 50 = 18.75 \text{ or } 19$$

$$= \frac{10}{40} = .25 \times 50 = 12.50 \text{ or } 12$$

The distribution of these figures becomes arbitrary on the part of the teacher.

## SUMMARY

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Evaluation is a continuous process. It is designed as an operational control to guide the learning sequence as well as a quality control to test results. Ideally, evaluation includes many aspects of learning besides the pupil's degree of information and skill. His achievements as they relate to his aptitude, his work habits, and his understanding should be part of the evaluation. The teacher should use evaluation results to point out the pupil's strengths and weaknesses and to help the pupil analyze the sources of his difficulties.

Evaluation procedures to be used depend on the kind of information needed. Tests are used when appropriate, but much of the data comes from observation during learning activities.

The purpose of evaluation, however, is not merely to check on pupil achievement but to provide a means of determining the effectiveness of the curriculum, of the instructional materials, and of the classroom activities. In each instance, the evaluation is designed to determine whether, and to what extent, they promote progress toward the established objectives.

## STUDY GUIDE

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1. What are some major goals achieved by an effective evaluation program?
2. What are the characteristics of an effective evaluation program?
3. Discuss the advantages and difficulties of using observational procedures in evaluating attitudes and behavior toward specific questions.
4. How may an effective evaluation program be identified?
5. Distinguish between criterion-referenced and norm-referenced tests.
6. What is a table of specifications?