

thimble is between 0.075 and 0.100, the gage line on the barrel is between 19 and 20 on the thimble; the line 8 of the vernier coincide with a line on the thimble, the reading is computed to be  $0.075 + 0.019 + 0.0008$  or  $0.0948''$ .

### The Vernier Caliper

The vernier principle is incorporated in another kind of measuring tool called vernier caliper. (See Fig. 2.)

The vernier caliper, as commonly known, is made almost similar to the micrometer. The stock to be measured is clipped between two jaws. One of these jaws is fixed while the other is sliding. There is attached with the sliding jaw a vernier scale. The main scale which is etched on the body of the caliper shows the major dimension in inches. Each inch division is sub-divided into 40 parts, so that each graduation is read as  $0.025''$ . Numbers 1, 2, 3, etc., in between the inch division represent the readings of  $0.100''$ ,  $0.200''$ ,  $0.300''$ , etc. Three marks after number 4 within an inch division is read as  $0.475''$ .

When the zero mark of the movable jaw falls between two graduations on the main scale, the dimension made will be between the smaller and the bigger reading. This reading is approximated in the case of a caliper made without the vernier. If there is one,

the vernier scale in the movable jaw will take care of the difference.

The vernier scale is graduated from 0 to 25. Actually, each mark is read in multiple of 0.001. That whole distance of the vernier scale is equivalent to 24 graduations on the inch division or  $0.600''$  on the main scale. Since there are 25 marks on the vernier scale, each mark is equal to  $1/25$  of  $0.600$  or  $0.024$ . A main scale division (which is  $0.025$ ) and a vernier division (which is  $0.024$ ) will make a difference of 0.001, the reading for every mark on the vernier.

The technique of locating the excess in reading as indicated on the vernier scale is an easy matter. Along the 25 marks on the vernier scale, one of these marks is in line with a mark on the main scale. The additional reading will be based on that mark of the vernier scale falling in line with a mark on the main scale. For example, when the index is between  $0.275''$  and  $0.300''$  on the scale, and line 23 on the vernier coincides with a scale line, the reading is  $0.275 + 0.023$  or  $0.298''$ . If the caliper is set for  $0.139''$ , the movable jaw is moved to 0.125 mark, i.e., one mark after number 1 on the main scale, and the vernier scale will be slowly manipulated such that the 14th graduation will coincide with a mark on the main scale.

# The Teacher's Methodology

By Juan V. Baquiran

## Character Education

SINCE the implementation of the Revised Philippine Educational Program at the beginning of the school year 1957-1958, the development of ethical character became the pervading element in all classroom instructions. In the past, Character Education was merged with Social Studies. Under the present plan, however, although it remains to be a part and parcel of Social Studies, it is being recognized as a separate Subject-Area in itself under Moral Character and Citizenship. It is the consensus among educators, that Character Education be treated as a separate subject in order to place moral character at the head of the civic virtues that must be inculcated and developed in our youth.

### *How to acquire character:*

Character is the sum total of an individual's inner traits as represented by his conduct. It may be acquired by:

1. heredity
2. home training
3. school training
4. associations
5. observation
6. studying the lives of great men

### *General Objectives of Character Education:*

Mckown gives us the following objectives of Character Education:

1. To develop an intelligent respect for the convention of society.
2. To develop an increasing ability to discern causes and to relate effects.
3. To develop a recognition, and acceptance of one's responsible membership in society and an increasing success and satisfaction in discharging that membership effectively.
4. The harmonious development adjustment, and integration, of one's personality.
5. To develop the desirable traits of character.

### *Methods of Moral Instruction:*

In general, there are two main types of instruction used in character education.

1. *The Direct Method* — begins with a consideration of the ideal, virtue, or trait to be developed. The direct method begins with a discussion of the picture of something that is not present, or at least we assume that it is not present because we are setting out to develop it.
2. *The Indirect Method* — begins with a consideration of the settings out of which the trait is supposed to emerge. If the teacher, in leading her group to see the necessity for some direct improvement, say, in classroom courtesy, helps the pupils to analyze the situations and perhaps develop and generalize principles and standards for this and other similar situations, the method is indirect.

### *Grade Placement of the Two Methods:*

The direct plan is used more in the grades than in the high school and more in the lower grades than in the upper. Hence, the most natural thing to do is to approach moral instruction very directly.

### *Materials of Direct Moral Instruction:*

The most commonly recognized and utilized materials in the direct approach are indicated below:

1. *Word* — is the briefest form of description of moral ideals and habits.

*Examples:* truthfulness, honesty, etc.

2. *Slogans, Mottoes, and Maxims* — are proverbial statements embodying moral or practical precept, usually in a more or less logical and sententious form.

*Examples:* Honesty is the best policy.

Nothing succeeds like success.

Do a good turn daily.

3. *Oath or Pledge* — is a solemn declaration or affirmation, frequently, to or in the presence of, some higher authority, of one's promise by which one binds one's self to do or to forbear from doing something.

"On my honor I will do my best —

"Believing most sincerely in —

"Hereby accepting —

"I solemnly pledge —

4. *Creed* (fr. credo—I believe) — is a personal acceptance of a concise summary of the principles and essential doctrines of an organization, cause, or institution.

"The Apostles' Creed"

"The Nicene Creed"

"The Athanasian Creed"

"The American's Creed"

5. *Memory Verses, Jingles, and Rhymes* — These are forceful, somewhat poetic statements of some great truth, ideal, or virtue.

"Early to bed and early to rise

Makes a man healthy, wealthy and wise."

6. *Code* — is a more or less systematized and condensed collection of rules, regulations, or expressions of desirable ideals.

### *Materials of Indirect Method of Moral Instruction:*

Indirect moral training begins with a situation and that out of meeting the problem offered by this particular setting, there arise a worthy ideal and action which represent a contribution to an individual's moral growth.

The materials of this method are as follows:

1. *Curricular Activities* — Opportunities offered by other school subjects for ethical instruction.
2. *Classroom Activities*—Recitations, reports, examinations, demonstrations, etc.
3. *Extra-curricular activities* — Athletics, dramatics, assembly programs, school clubs, social events, campaigns, drives.
4. *School routine activities* — coming and going about the building, entering and leaving the classroom, order and direction of traffic.
5. *Personal contacts* — Pupils' contacts with parents, teachers, and school mates.
6. *Guidance and Counselling Program.*

### *Conduct Assignments:*

Conduct assignments are those assignments which lead children actually to perform actions appropriate to the ideals in specific situations made in a form of a project or a problem.

The steps in a conduct assignment are:

1. The stories should be studied to see what ideal is developed.
2. The children are asked to give other illustrations from literature or history.
3. Illustrations are given from the personal experiences of other children.
4. The children examine their own lives and suggest situations to which the traits may apply.
5. At this point the conduct assignment is made. The children are asked specifically to apply the trait to the situations that have been discussed and to other situations as well.
6. Finally, the report is made. This report is absolutely indispensable.