new ways to teach nutrition

Hazel Taylor Spitze

"Hey, Mom, here comes the nutrition lady," called the preschooler as she saw the program assistant coming down the street.

"Good! I thought she'd be here today."

"I'm glad she's coming! I wonder what she'll have to show us."

Sometimes the "nutrition lady" has recipes, sometimes a "movie" (film loop), other times a booklet or chart or game, and occasionally real food. She always seems happy to see her clients, bubbling with something she has "just learned."

Learner's Interest

Does the above sequence suggest a successful segment of the Expanded Food and Nutrition Education Program (EFNEP)? You couldn't know, of course, without much more information, but one vital ingredient seems to be present: the learners are interested. As Gifft, Washbon, and Harrison say,

> What is taught, why it is taught, and how it is taught must be selected on the basis of what the audience will perceive as beneficial to its own interests. Whatever the purpose of the nutrition educator, the learner's concerns will determine his response.[1]

What causes learners to be interested? The choice of subject matter and the teaching techniques employed are both important factors, and the learner will be the ultimate judge of the appropriateness of both *for him*. Borrowing again, "Teaching techniques cannot substitute for meaningful . . . subject matter [but] attention to methodology is necessary to draw the audience into the learning process."[2] And not all teaching techniques are equally effective in getting a given learner involved.

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"There is essentially no disagreement that *guided* discovery improves understanding, retention, and application of knowledge."[3] Guided discovery is "techniques which provide structured opportunities for the learner to participate in developing the cognitive base for his own ideas."[4]

With ideas like these in mind, I conducted workshops in nutrition education for teachers, Extension home economists, school nurses, and others interested in communicating the nutrition message.

The purpose of this article is to share some of the teaching techniques and materials created by members of the workshops and staff in Home Economics Education at the University of Illinois and explain some of the principles on which they were based. Since the less-educated or slower-reading youth and adult were constantly in our thoughts, and all materials were written on elementary reading levels, they're usable and adaptable for a wide range of audiences.

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Only Individuals Learn

There's general agreement that only *individuals*—not groups—can learn. Thus, the current emphasis is on individualized instruction. There's not such agreement, however, on *how* to individualize. Those who criticize programmed instruction as a way of individualizing point out the rigidity inherent in this type of teaching and stress that "learning is also exploring, conceptualizing, experimenting, interacting, and valuing."[5] Others remind us that knowledge is not enough and that the process of socialization is also an important function of education.[6] Educators at least as far back as John Dewey have suggested student interest as a point of departure or as a necessary component in the teaching-learning process, and materials and techniques affect this interest.

Rubin has also called for major changes in teaching methods and removal of some

> . . . great defects in the present climate of learning. Drudgery is taken for granted, boredom is viewed as a necessary evil, our methods of motivating the learner are counterfeit, spontaneity has become something of a lost cause, and knowledge itself is packaged in a grossly unappetizing form.[7]

Materials Flexibility

Therefore, in my materials I've tried to build flexibility to allow some opportunity for the learner to work alone. But, I've stressed interaction among learners and between teacher and learner to permit socialization and to encourage affective as well as cognitive development. I also tried to "package the

knowledge appetizingly" and to make it possible for the teacher as well as the student to learn from the materials for, as Houghton says, "the magnificant joy of teaching is that the teacher should always be the first and foremost learner."[8]

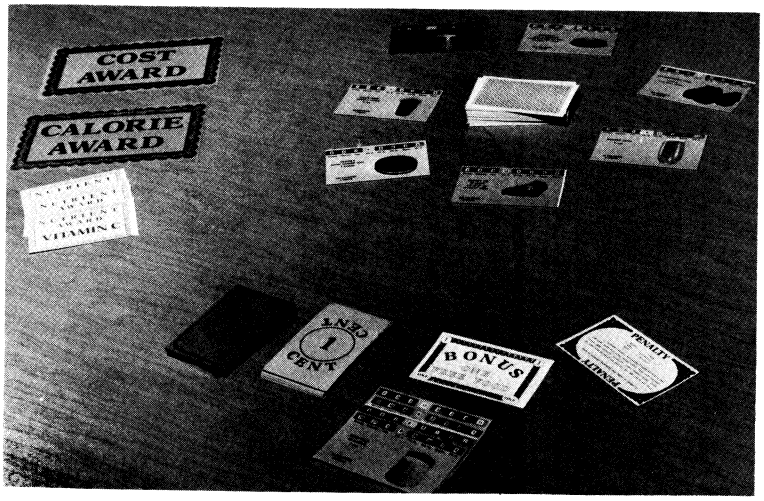
Members of each workshop began with the "Basic Conceptual Framework of Nutrition"[9] and asked themselves: What specific facts are needed to lead learners to discover the general relationships? What experiences are needed to build these generalizations into their thinking? Members of recent workshops benefited from the earlier materials, but always the greatest benefit is from creating materials oneself.

Techniques

As they worked together trying to think of ways to make nutrition interesting to individuals, small groups, clubs, or classes of varying ages and ability levels, one idea sparked another and several techniques emerged: pantomimes depicting symptoms of nutrient deficiencies, a simple team game of "Calorie Order" in which players draw three food models or pictures and arrange them in order of increasing caloric value to earn a point for their team, Nutrition Tic-Tac-Toe, and Nutrition Dominoes with foods instead of spots.

Simulations

Simulations, or pretenses of real-life situations with educational objectives, also came into being. Some were simulations of television shows (for example: Will the real vitamin A please stand up?). Some were real-life situations, such as a press conference, an election, a job interview, or a trial in court in which the defendant was accused of malnutrition. One workshopper simulated a soap opera and in a two-scene, five-character skit titled "For Lack of Niacin," she made the symptoms of niacin deficiency so clear that it would be hard for an audience to forget them.



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Three of the characteristics sought in developing the simulations were: (1) little or no risk, (2) little or no threat, and (3) opportunity for heuristic learning.[10] I also strived for maximum participation of learners—physically, mentally, and emotionally—and, of course, for the preservation of the structure of the subject matter to be taught.

Other simulations included a "private eye detective agency" in which learners collected hidden clues to identify the "secret substance" (vitamin A) and the winner was promoted to lieutenant in the agency and received a certificate to frame and hang on her wall! There was a simulation of a county fair with contestants judging four days' menus for a particular purpose. Another simulated a zoning committee hearing. A school nurse emphasized the varying nutritive values of snack foods with a simulation of "a day in the life of a teenager," and there was a "fight anemia cooky contest" to encourage new recipes with iron.

Preparation of techniques and materials for teaching often leads the teacher to discover what has yet to be learned. In the workshops, liberal use was made of references and consultants to be sure that the science of nutrition was preserved as new ways to teach it were invented.

Games

Games can often be effective teaching techniques for both children and adults if they're designed to preserve the structure of the subject matter to be taught and chosen to fit the teaching objectives. Two examples that teach principles of nutrition in ways that learners have found enjoyable are *The Calorie Game*, a board-type game, and *The Nutrition Game*, a card game that can be played in eight different versions of varying difficulty levels.[11]

Illinois Materials

Other materials available from the University of Illinois that Extension home economists and EFNEP program aides may find useful include:

1. "Letters from Your Unborn Baby"—a unique way to teach prenatal nutrition.
2. "Inside Information About the Nutrients"—a reference on 11 nutrients in simple language to be placed on 3 x 5 cards and used in a variety of ways.
3. "Nutrition Insurance"—a simulation of policies such as anemia insurance, goiter insurance, etc., with a description of how a leader could use them with one or several learners at a time (beneficiaries sometimes include a fetus, and "premiums" are the foods needed to prevent the deficiency).
4. Several self-teaching kits particularly useful in one-to-one teaching—titles include "Calories and You," "Discovering a Pattern for a Balanced

Diet," a couple on protein, and one showing how a hamburger becomes part of the body.

5. The "% Charts"—a simplified Table of Nutrient Values showing, for about 175 common foods, the size of a serving and the percentage of RDA for 8 common nutrients that serving provides, using as a referent for 100% the RDA for the 22-35 year old woman. These can be used in a group or with an individual in dozens of ways, depending on the imagination of the leader and the needs of the learner. Some suggestions are included with the charts.[12]

The same principles that guide you in developing new techniques and materials can be used in evaluating existing ones and making choices about which ones can be most effective in the situation where they'll be used. . . .

Many of these materials have been used by various groups of youths and adults, including one small group of program assistants "in training" and one group of inmates at the Illinois women's prison. The choice was based on the time available and the interests of the group. All of the materials could have been used if time allowed.

Nutrition Knowledge Test

I've recently completed a test to measure consumers' knowledge of nutrition. In simple language and true-false format, with items grouped according to subject, it contains about 300 items and is scored by machine. Hopefully, both teachers and researchers will find it useful for stimulating the interest and curiosity of learners, for pre- and post-testing.

Theoretical Base

The creation of materials must be done with a theoretical base. We at Illinois benefited from the work of curriculum or program developers in other fields, such as Max Beberman in mathematics education, Jerrold Zacharias who developed the "new biology," and John Gibson in the social studies area.[13]

Teaching-Learning Principles

The following principles of teaching and learning may help guide those who develop or adapt teaching techniques and materials:

1. If the learning situation is a part of "real life" or seems real to the students, they'll perceive the relevance and be more eager to learn.
2. If the learners are actively participating, their interest is likely to be greater and achievement more rapid.

3. If the learners are mentally and emotionally involved in the learning situation, motivation and learning are increased.
4. If the students are involved in choosing the techniques to be used, they'll be more likely to accept the resulting situation.
5. If the chosen techniques help the students to experience success, their self-esteem and motivation will be enhanced.
6. If the students find pleasure in the learning situation, they'll be more likely to continue learning.
7. If the students develop skills for independent learning, they can continue to learn when no teacher is available to direct them.
8. If the students see usefulness in their learning activities, motivation will be increased.
9. If the students develop positive attitudes toward learning, they'll be more likely to continue learning independently.
10. If the learners *discover* an intellectual relationship, they have greater joy in learning and greater interest in continued learning than when they're *told* the relationship.

Summary

Developing new ways to teach can be as exciting as creating new works of art, new products for industry, or new techniques in surgery. To be successful, you need a solid foundation in the subject to be taught and a thorough knowledge of the principles of teaching and learning. Without this base, you might still have ideas worth submitting for consideration by the specialists, and the team effort might produce results no individual could have done alone.

The same principles that guide you in developing new techniques and materials can be used in evaluating existing ones and making choices about which ones can be most effective in the situation where they'll be used. Orchestrating the music we have may be as important as composing new music!

Footnotes

1. Helen H. Gifft, Marjorie B. Washbon, and Gail G. Harrison, *Nutrition, Behavior, and Change* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972), p. 257.
2. *Ibid.*, p. 329.
3. *Ibid.*, p. 331.
4. *Ibid.*
5. H. T. Fitzgerald, quoted in *Process as Content: Curriculum Design and the Application of Knowledge*, J. Cecil Parker and Louis J. Rubin, eds. (Chicago: Rand McNally and Company, 1966), p. 6.
6. Louis J. Rubin, ed., *Facts and Feelings in the Classroom* (New York: The Viking Press, 1973), pp. 4 and 9.

7. *Ibid.*, pp. 28-29.
8. Raymond W. Houghton, "The Focus of Humanism and the Teacher," in *Humanizing Education: The Person in the Process*, Robert Leeper, ed. (Washington, D.C.: Association for Supervision and Curriculum Development, NEA, 1967), p. 61.
9. Ruth Leverton, "Basic Nutrition Concepts for Use in Nutrition Education, *Journal of Home Economics*, LIX (May, 1967), 346-48.
10. Harvey Day and Robert Parnes, "A Computer Based Simulation as an Alternative Teacher Training Strategy" (Paper presented at the AERA, April 3, 1975, Washington, D.C.).
11. Brochure available from Graphics Company, 1107 West University Avenue, Urbana, Illinois 61801.
12. Brochure with descriptions available from *Illinois Teacher* office, 351 Education Building, Urbana, Illinois 61801.
13. Robert W. Heath, ed., *New Curricula* (New York: Harper and Row, Publishers, 1964), pp. 9-34 and John S. Gibson, "Selecting and Developing Social Studies Instructional Materials" (Washington, D.C.: National Council for the Social Studies, 1969), pp. 174-205.