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## MEASURING THE EFFECTIVENESS OF CONSUMER NUTRITION EDUCATION PROGRAMS

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Nutrition education is certainly not a new topic. Ever since the White House Conference in 1969, chaired by the illustrious Jean Mayer. . . and the Senate Select Committee's hearings. . . the subject has been a hot one. Industries hopped on the bandwagon hoping to be the leaders, and trade publications rewarded companies for films, booklets, film strips, and other teaching aids deemed superior.

Materials and programs to improve the nutrition IQ of Americans of all ages are plentiful, but few are being evaluated. Few do benchmark studies. Few try to find out if eating habits are really influenced by certain programs.

For example, several cereal companies have excellent educational kits for high school home economics classes that deal with the importance of breakfast and fiber. And the recent elevation of fiber as one of the most important edibles has increased the use of the materials. The companies survey the teachers regarding usage, offer reply cards, and respond to questions by telephone. Similar programs are undertaken with adult educators. But it would be very difficult to determine which cereal company's materials and programs made the difference in eating habits or in how the consumers feel after changing those habits.

In interviewing a number of corporations, trade associations, and government agencies regarding their nutrition education programs and how they evaluate them and report their findings, I found that most programs work this way. Educational kits are shipped out, there is some check on usage, sometimes reply cards for evaluating films saying, "we liked it" or "I showed it to 10 classes," but rarely any real analysis.

There are exceptions, however. Planters Peanuts, my client, got into the nutrition game in the late '60s, before the White House Conference. Booklets and a film on physical fitness and nutrition were produced for children eight to twelve years of age. No one else was aiming materials at that age group and Planters believed that good eating and exercise habits had to begin young. . . long before children become

teenagers and lose interest. Ten years later, over 33 million youngsters had seen the film and millions of the booklets had been distributed. Whole school systems made the booklets official texts. From a distribution point of view, the program is a great success.

But does it do any good? We wanted to know, so we asked teachers to share their experiences with us. Many responded. An extension 4-H youth worker in Orange County, California, described how she had been using the film and booklets for two years in kindergarten through sixth grade classes. In one six-week period she had worked with 1,700 students. The youngsters' enthusiasm had resulted in an after school cooking project in which they learned how to make nourishing dishes. The children reported trying the dishes at home and actually changing their eating habits. Similar reports were received from all over the United States. Going one step further, two classes of students in the same town were interviewed on film. A first grade class had had no nutrition education. The kindergarten class had been working with the booklet for two months. . . in school and at home. The younger class was able to talk about nutrition and described what they ate for each meal, illustrating that the program was, indeed, working. These kids were into carrots and milk and all those good things and even knew what these foods did for them. "Meat makes me strong," said one little girl.

The United States Department of Agriculture (USDA) asked us to describe this way of evaluating nutrition education programs to professionals and paraprofessionals when the Expanded Food and Nutrition Education Program (EFNEP) started. 4-H agents also used the film to help them analyze their programs with young people. The program became computerized last year. Students "talk" to Mr. Peanut on an Apple II computer and tell him what they eat and how they exercise. Mr. Peanut works with them until there is a noticeable change. The evaluation is immediate.

Fleischmann's Yeast has used two programs to teach nutrition education and has evaluated them afterwards. The 4-H Bread Program is nutrition-oriented and participants have been surveyed ten years after being in the program. They report an effect on the kinds of foods they purchase and make.

The company's other program is a Share the Health Contest in which classes of home economics students select a group in the community. . . like a senior citizen's home, a class of elementary school students, a group of pregnant women, or a high school athletic team. Menus are designed for the particular group. The class works with the group and documents their activities. Even before submitting their entries, the classes evaluate what they have done and the evaluation becomes part of the presentation. Letters are included from the individuals whose eating habits have been changed. . . kids, the elderly, and others tell how they've changed eating habits and intend to con-

tinue. The whole approach is effective because it is personal and it is a great deal more interesting than listening to someone lecture on nutrition.

When the Food and Drug Administration (FDA) was about to make nutrition labeling mandatory, they hired J. Walter Thompson to do an advertising and public relations program to announce it and to teach consumers how to use it to prepare well balanced meals. The slogan selected was, "Read the Label, Set a Better Table." Dick Van Dyke donated his time to do an educational film that also starred nutrients as "characters." Pearl Bailey did some marvelous radio commercials. A package of information. . . releases, booklets, wall charts, slide shows, and radio scripts were produced and FDA's fifty consumer specialists in major cities were trained to use them, place them, get themselves on radio and television, and make arrangements for newspaper interviews. When all the elements were ready, the FDA held a major conference in Washington for food industry representatives and invited the industry to reproduce the consumer booklet themselves and put their company name on it so that maximum distribution could be achieved. According to an FDA evaluation, the program reached 92% of all listeners in the United States through radio alone. The film was judged to be the best public service film of the year.

Several years later, FDA conducted nationwide surveys to find out if consumers were now able to choose foods wisely. The survey was part of a periodic assessment of how well equipped consumers can use this information to choose foods wisely and maintain good nutritional status.

Some of the results. . . almost half of those who reported changing their shopping habits were either buying less meat or cheaper cuts. Thirteen percent were buying fewer sweets and fifteen percent were watching for specials and using coupons more. Three out of five had seen the nutrition labeling and over half of these reported using it to purchase food and beverages [1].

The Expanded Food and Nutrition Education Program (EFNEP) mentioned earlier, has been enormously successful. Developed by cooperative extension, which had become aware that segments of the population, particularly low income groups, were not being reached by available education programs and resources, it was funded by earmarked Smith-Lever funds and was initially designed to help low income families, especially those with children, acquire the knowledge, skills, attitudes, and changed behavior necessary to improve their diets.

In extension, professional nutritionists train paraprofessionals or aides to work individually and in small groups with adults and children. This unique delivery system is the reason the program works so well. The aides usually are indigenous to the area where they work. In New York City, for example, an aide who lives in a project would work just within that project either in a room or recreation center or

in individual apartments. The aide knows the families, knows their ethnic food preferences and habits and guides them accordingly. The menu planning is individualized according to these preferences. Cooking and food selection, as well as the economics of food purchasing, are included. The aide checks to see what is working. . . whether a peanut butter and carrot snack has appeased Juan's sweet tooth, for instance. Once a participant has convinced the aide that the program has been successful, the participant graduates.

By combining theory, very specific instruction designed for individuals, and a real personal interest, the EFNEP program in just more than ten years has been highly successful where other programs have failed.

The government and local extension does constant evaluations on the program so effectiveness is measured on a regular basis. In New York City's infamous south Bronx, a report on Puerto Rican families showed that 45% increased consumption of vegetables, 34% more fruits, while 31% decreased consumption of fried foods or fatty foods.

In the spring of '84, the 4-H component of EFNEP in New York City was appraised. The program is carried out by the aides in primary schools. A questionnaire was designed to document the effect of the program on food selection and eating habits at home. Eighty-four percent of the mothers indicated that they were aware of the nutrition education activities primarily because the children brought the materials home. Observed behavior changes ranged from 44% to 56%. . . with the most frequently mentioned. . . 73% said children were more willing to try new foods, 60% responded that children asked them to prepare different kinds of foods that had been discussed in the lessons [2].

In a New York statewide survey taken in February of this year of knowledge and skills attained by youth in the 4-H EFNEP program, results showed that 75% knew the food groups and the foods in them, 74% could name ten foods needed for good health, 59% reported eating fruits and vegetables for meals and snacks. Seventy-seven percent knew that food affects how we look, feel, work, and play and 82% knew that exercise is needed for good health. Similar surveys taken in various parts of the state in the last three years show similar results [3].

In 1980, the National Pork Producers Council conducted a comprehensive survey of consumers regarding the purchase of pork as compared to other meats and the reasons for the purchases. The objectives were to provide a baseline of information to allow for future comparisons. Among other findings, pork was rated poor or very poor in nutrition, far below chicken and beef. It was considered highest in cholesterol levels and high in caloric content. The Council embarked on a nutrition education program, primarily through advertising, to turn these opinions around. A recent survey of 1,000 consumers in ten major cities nationwide shows that they have done just that. The "lean

theme" the Council has been using has had very positive reactions. Fresh pork consumption has remained steady. "Healthfulness" as opposed to "slimness" was a decided trend. There was an increase in using pork for entertaining at home and dining out. The perceptions that pork is fatty and caloric are definitely declining [4].

The National Dairy Council has done an extraordinary job of evaluating its own nutrition education programs and funded a landmark research project to find out how effective programs over the last seventy years have been.

The Council has a learning system called FOOD. . . Your Choice, a comprehensive, developmentally sequential nutrition learning system for students from preschool through high school. It is built around a framework of seven basic concepts formulated at the White House Conference, concepts that nutrition experts felt the average citizen should know in order to make intelligent food choices.

Designed to complement existing texts and curricula, the system includes teaching plans, duplicating masters, posters, and other resources. The programs are not static. Students learn about food as a commodity, as basic to good health, and as a satisfier of social and psychological needs. A conservative estimate is that 14 million children have used the programs, but if they have been used every year, that figure could be 44 million.

At the preschool level particularly, the plan is designed to help parents become involved in the nutrition education of children, both at home and in the classroom. Parents are asked to evaluate the program by filling out a questionnaire. Primarily the Council hopes to find out if the program makes a real difference in the food choices of the students. Results indicate that it does.

The landmark study that the Council has funded will be published as a supplement to the *Journal of Nutrition Education* in the spring of this year. It was conducted by Dr. David W. Johnson of the University of Minnesota. It included 303 studies with a total of 4,108 separate findings. Johnson used a fairly new technique, meta-analysis which makes it possible to average together data from a large number of existing studies after their findings are converted to a common statistic. Statistical methods used are called effect-size and z-score. This provides strong, statistically reliable figures with a chance of error in any of the results of less than 1 in 1,000.

The indications of the study were very favorable. Those who participated in nutrition education programs do know more about nutrition. . .65% of the findings were significantly positive, only 2% were negative. This is true for all age groups, although the largest gains were in college students.

Nutrition education results in an increase in positive attitudes toward eating nutritiously. . .with 44% significantly positive and 5% negative.

But most important is the behavior pattern that results. Nutrition education results in nutritionally desirable changes in participants' patterns of food consumption with 58% making significant changes and only 3% not doing so. The results are especially strong for the consumption of dairy products, meats, and fruits and for foods rich in protein, calcium, thiamin, riboflavin, and niacin [5].

The results should encourage nutrition educators who have wondered if their efforts were resulting in long-term benefits. They also set a focus and direction. . .and provide a benchmark against which future nutrition education efforts can be measured.

In the practical application of all this, it would seem that the private sector, which has the money and the creative talent to produce effective nutrition education materials, can provide the hardware. Organizations like extension, that do not have the funding for production, do have the means to supply the manpower through the training of aides and other para-professionals. Working together, the private sector can provide the materials for these nutrition educators to work with.

In this high tech society, the one message that comes through loud and clear is that nutrition education programs work best if they are done by "high touch" — the small groups, the in-home visits, the very personal applications in the classrooms with students taking information home to work out with their families, and the consideration of ethnic references and habits. These are the methods that work and here is a real role for each sector. . .industry, educators, and government agencies. . .an opportunity for them to work together to provide future generations even higher nutrition IQs.

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