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AUTHOR Stronck, David R.
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ABSTRACT

This study analyzed the effectiveness of a method for changing the opinions of students toward various issues related to nutrition. The method consisted of twenty-minute lectures with slides. The 219 college biology students completed four questionnaires containing 44 items. Questionnaire data indicated changes were usually in the direction favored by nutrition experts. Although the students tended to maintain their original opinions, the study indicated short presentations can be effective in changing attitudes on a wide variety of nutritional topics. (Author/BT)

CHANGING ATTITUDES TOWARD NUTRITION

David R. Stronck

Associate Professor of

Biological Sciences and Education

Program in General Biology

Washington State University

Pullman, WA 99163

ABSTRACT

The objective of this study is to analyze the effectiveness of a method for changing the opinions of students toward various issues in nutrition. The method consisted of twenty-minute lectures with slides. The 219 college biology students of this study completed four questionnaires containing 44 items. This null hypothesis is rejected for most statements on the questionnaires: there is no significant difference between responses to the statement on the questionnaire completed before the presentation of accurate data related to the statement and responses to the same statement completed after the presentation. Changes were usually in the direction favored by nutrition experts. Although the students tended to maintain their original opinions, short presentations can be effective in changing attitudes on a wide variety of nutritional topics.

CHANGING ATTITUDES TOWARD NUTRITION

ARTICLE NOTE

College biology students demonstrated significant attitudinal changes toward many nutritional topics after short color-slide presentations on these topics.

OBJECTIVES

The Health and Nutrition Examination Survey (HANES) report of the Health, Education and Welfare Department recently described the 1971 to 1974 dietary intake of calories, protein, iron, calcium, vitamins A and C, and the biochemical findings of six tests.(1) This report reveals widespread deficiencies throughout all groups of Americans. For example, with iron intakes below HANES standards are 95 percent of preschool children and women of childbearing age. Vitamin A deficiency is found in 57 percent of adults aged 18 to 44; vitamin C is deficient in the diets of 49 percent of adult males. Nearly 56 percent of white women have calcium-deficient diets. In general Americans have many serious dietary deficiencies, not because nutritious food is unavailable, but rather because eating habits are inappropriate.

The primary objective of this study is to analyze the effectiveness of a method for changing the opinion of students toward various issues in nutrition. The 219 students involved in the study

were enrolled in five different sections of Bio S 102, General Biology, at Washington State University. This is a one-semester laboratory course designed for all students seeking a general introduction to biology. The course is not recommended for pre-professional students, e.g., pre-medical students. The students in this study were randomly selected from the many types of students in a large comprehensive university.

PERSPECTIVES ON VALUES

Louis E. Raths, Merrill Harmin and Sidney B. Simon in their book Values and Teaching recommend various methods for clarifying values.(2) Values are defined as "those elements that show how a person has decided to use his life." The authors recommend the following procedures: ask a question; supply additional data; ask the question again in terms of the newly presented alternatives.

Usually topics of nutrition are presented as facts which students should memorize. In this study the "facts" were identified and presented not for memorization but for the clarification of values. Because most Americans have deficiencies in some aspects of their diets, science educators should recognize the social implications of data on nutritional topics. The urgency of clarifying values in this area is noted by a recent report in the newsletter of North Carolina's Institute of Nutrition: "It would seem that asking

the consumer to be reasonable or rational about his food choices is really an effective argument for less than 25 perconet of the population."(3)

PROCEDURES

One section of students completed a questionnaire before each of four presentations and the same four questionnaires after each of the presentations. The four questionnaires contained a total of 44 items. In another semester 89 different students completed four similar questionnaires before receiving presentations of data related to the questions. In a third semester another 89 comparable students completed the same four questionnaires only after the presentations. Each presentation was an attractive lecture with color slides requiring approximately 20 minutes.

More than half of the students involved in this study also completed essay examinations to determine their understanding of the contents of the presentations. These written examinations demonstrated that the students universally understood the content of the presentations and therefore were almost always awarded the grade of A on these short examinations. Each examination consisted of two or three questions closely related to the statements made in the presentation. These examinations were administered after the final completion of all questionnaires.

DATA SOURCE

The four questionnaires used in this study considered the following four general topics of nutrition: (1) the balanced diet, (2) nutritional deficiencies, (3) identification of appropriate foods, and (4) supply and cost of foods. Students were asked to respond to each statement of a questionnaire by indicating their choice among the following alternatives: strongly agree; agree; neutral; disagree; strongly disagree. Some of the statements from these instruments are the following:

1. Breads and cereals are the least important of the four basic food groups.
2. I could eat cheese instead of meat as a source of protein.
3. Breads and cereals have little nutritional significance.
4. One can eat and drink whatever he pleases if a vitamin and mineral capsule is taken each day to assure a supply of essential nutrients.
5. Vitamin pills are a necessary part of everyone's diet.
6. Nutrition education is a real concern our society must undertake.
7. Good nutrition is a valid enough concern that vitamins should be provided free of charge by the state to the undernourished.
8. Television commercials are generally persuasive to me.
9. Food production will not be able to keep up with population.
10. Cities should stay the same size to leave more land for farms.

Although some of these statements may elicit a concensus of opinion

among experts in the field, all of the statements used in this study received a broad spectrum of responses from the students. The statements were prepared and revised by 30 students enrolled in Bio S 430 Methods of Teaching Science.

RESULTS

The following null hypothesis is rejected for most statements on the questionnaires: there is no statistically significant difference between responses to the statement on the questionnaire completed before the presentation of accurate data related to the statement and responses to the same statement completed after the presentation. In general the change in the responses was in the direction favored by recognized experts in the field of nutrition. Nevertheless the responses continued to present a wide variance of opinion after the presentations. Although the presentations significantly influenced changes in the opinions of the students, thei responses to the statements did not become uniform. When these students were encouraged to express their opinions without the circumstance of their responses being graded, they often maintained their original opinion despite their recognition of opposing data.

Each student was asked to respond to each statement with the following instructions: "Give your opinion of the following statement according to this key: (1) strongly agree, (2) agree, (3) neutral, (4) disagree, and (5) strongly disagree." The table below

gives the frequency of responses to each of these options for the ten statements listed above. Group A is the section of students who completed the same questionnaire both before the presentation and after the presentation. Group B consists of a group of students who completed the questionnaire before the presentation and a similar group of students who completed the questionnaire only after the presentation.

Insert Table 1 Here

EDUCATIONAL IMPORTANCE OF THE STUDY

Biology teachers usually present topics of nutrition without reference to the dietary habits of their students and the social implications of irrational patterns of food consumption. A review of biology textbooks demonstrated a nearly total absence of relating nutrition to dietary values. This study demonstrated that knowledge about nutrition can effect significant improvements in the expressed opinions of students on many issues related to foods. Nevertheless these opinions will tend to remain widely diverse among large groups of heterogeneous student. Science teachers should consider the advantages of improving students' attitudes over teaching merely for the goal of providing information unrelated to dietary behavior.

TABLE 1

Frequency of Responses to Statements on the Questionnaires

Statement Group		Pretest (1)	(2)	(3)	(4)	(5)	Posttest (1)	(2)	(3)	(4)	(5)	
1	A	3	5	3	23	7	1	3	5	22	11	
	B	2	19	22	36	9	2	10	24	38	17	*
2	A	8	23	2	6	2	9	27	1	5	1	
	B	6	36	8	29	8	31	43	4	11	2	**
3	A	1	2	5	21	12	0	1	1	20	19	**
	B	2	5	12	50	21	2	8	4	51	24	
4	A	0	4	13	15	7	0	1	7	18	16	**
	B	1	2	7	48	29	0	2	10	45	38	
5	A	1	4	5	20	11	4	9	10	10	8	**
	B	3	13	20	32	21	4	15	24	33	8	*
6	A	8	29	4	0	0	13	27	1	0	0	
	B	33	45	9	1	0	58	31	2	0	1	*
7	A	4	10	19	4	3	9	14	16	1	1	**
	B	20	20	32	9	7	32	33	12	12	0	**
8	A	2	4	2	15	10	0	3	4	25	15	
	B	0	14	4	43	24	4	31	12	25	12	**
9	A	6	15	9	6	0	15	21	5	3	0	**
	B	32	39	8	7	1	34	43	12	2	2	
10	A	2	13	11	7	3	7	16	10	7	1	**
	B	8	21	47	13	0	7	16	42	19	3	

* Significant at the 2.5% level of confidence
** Significant at the 1 % level of confidence

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