

multimedia instruction: high learning, low cost

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- *A well-planned and carefully implemented mass media education program can reach thousands of people not previously aware of Extension.*
- *A combination of multimedia instruction systems can prove highly effective, and can cost less than the traditional Extension one-to-one methods.*

These are the findings of a 1-year Vermont-Nevada EFNEP Multimedia Nutrition Education project, funded by SEA-Extension for 1979-80. Designed within the framework of Extension's Expanded Food and Nutrition Education Program (EFNEP), the project reached some 17,000 food stamp families in rural Vermont and 7,000 families in urban Las Vegas, Nevada. It was cooperatively planned and implemented by a team of Extension administrators and specialists in the two states.¹

... a combination of all three systems tested in this project and tailored to participants' motivations, needs, and educational levels would provide a more cost-effective way to reach more low-income families with nutrition education than the present one-to-one or small group method,

Popularly called Good Food—Good Times, this project was structured as an intensive 10-week nutrition series during the winter in Vermont and the summer in Nevada—seasons when participants would be more likely to be in the house and interested in enrolling and following the lessons.

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Instructional Systems

The Good Food—Good Times series went beyond the traditional EFNEP teaching methods (one-to-one or small group instruction) to include media: direct mail, television, and telephone instruction. The total program included 10 weekly lessons, taught to 3 separate groupings of participants simultaneously, using a different instructional system for each group (see Figure 1).

System 1: Direct mail, television, telephone instruction (conducted by aide).

System 2: Direct mail, television.

System 3: One-to-one or small group instruction (conducted by aide).

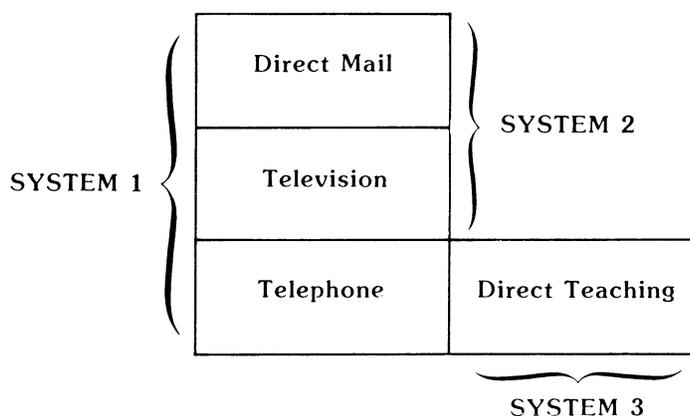


Figure 1. Structure of the three nutrition education systems.

Planning and Production

The planning and production of educational materials, which included 10 direct mail mini-lessons and 10 television programs, were done cooperatively by Vermont and Nevada. Participants in both states received the same materials, with minor revisions made to comply with franking privileges and to meet special ethnic or regional needs.

Invitations to join the Good Food—Good Times program were sent to potential participants who were on state food stamp office mailing lists one month before the program started. Extra time and effort were put into the invitational announcements to make them friendly and easy-to-read and to encourage people to sign and return an enclosed enrollment card.

A total of 2,903 Vermont and 670 Nevada food stamp families enrolled and completed a 2-page pretest, including questions on nutrition, food behavior, and shopping practices.

Immediately following enrollment and completion of pretests, the participants were divided into the three system groups. Also, a control group, all food stamp recipients who

had no exposure to the educational material, was included for each state. See Figure 2 for enrollment and group division.

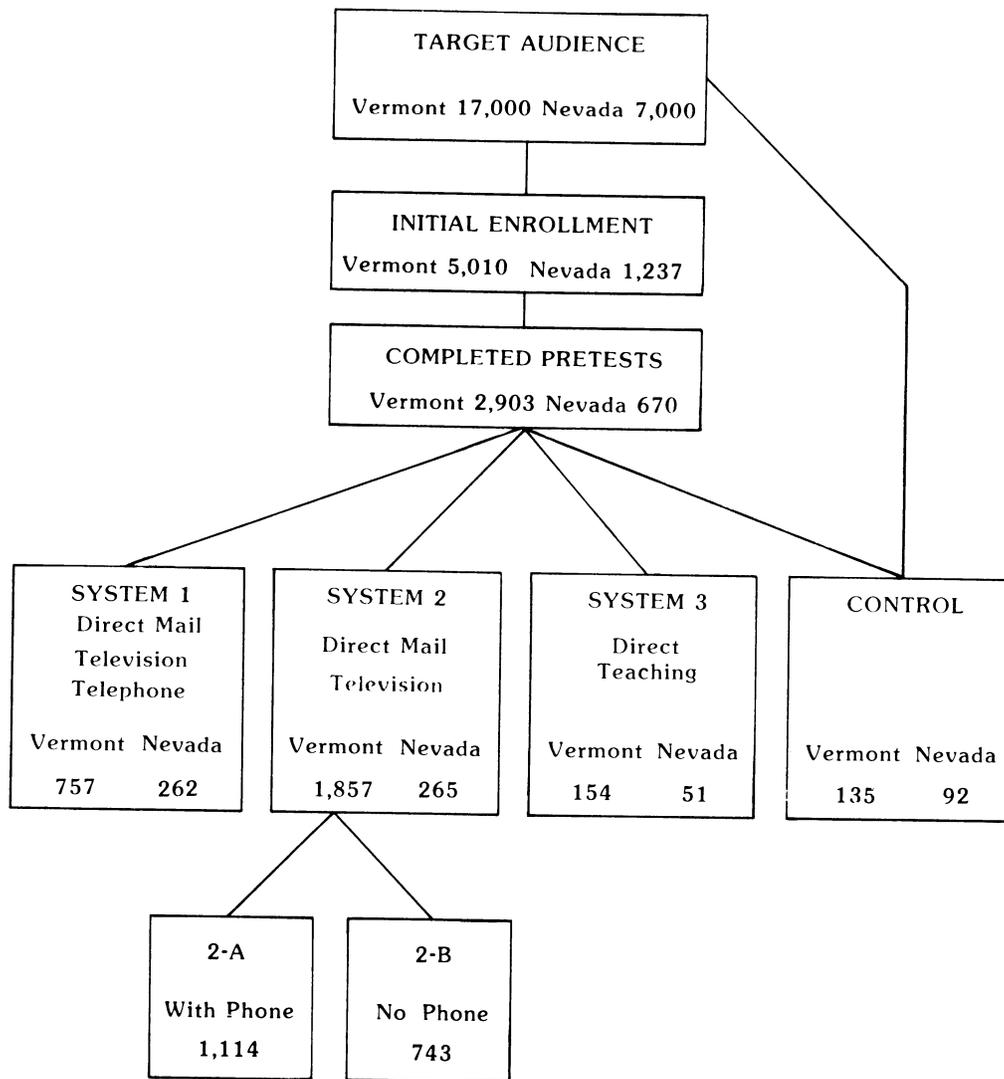


Figure 2. System structure design.

During the intensive 10-week nutrition program, all participants were exposed to the same educational materials.

In System 1, the participants received weekly direct mail mini-lessons, were informed about the weekly television programs, and encouraged to watch. In addition, they were contacted by phone once a week or once every two weeks by a nutrition aide, who discussed the lessons, gave additional information, and answered questions.

In System 2, the participants received weekly direct mail mini-lessons and were encouraged to watch the television programs. There was no direct contact by a nutrition aide.

In System 3, nutrition aides used the Good Food—Good Times materials in a one-to-one or small group teaching situation. At the completion of the program, posttests were given. The same questions were randomized for the posttest to reduce the learning effect of the test itself.

Evaluation

Evaluation of the Good Food—Good Times program showed high learning effectiveness for all three systems in both rural and urban samples. Significant increases in nutrition knowledge and significant changes in food recalls, nutrition, and shopping practices were recorded for all three instructional systems.² Table 1 shows the results of pretests and posttests for 10 questions about food expressed in composite learning effectiveness (LE) values.³

Table 1. Significant changes in nutrition knowledge.

	System 1	System 2	System 3
Vermont	.4101*	.2340*	.6080*
Nevada	.2185*	.2070*	.3423*

*Significance at .001 level.

The costs varied considerably with the three instructional systems. As might be expected, the highest costs were recorded for System 3, where direct teaching was used with a small number of participants. In System 1, the costs were less than half of the System 3 costs in both states. In System 2, the Vermont costs were almost one-sixth and the Nevada costs one-third those of System 3. The cost variations in the two states depended mainly on the number of participants for each system (see Table 2).

Cost Effectiveness

By considering the overall performance and program costs per participant, a cost-effectiveness measure for the three instructional systems was determined:

- System 2: low costs and high performance.
- System 1: medium costs and high performance.
- System 3: high costs and high performance.

Table 2. Cost comparison of the three instructional systems.

	System 1		System 2		System 3	
	No. participants	Cost per participant	No. participants	Cost per participant	No. participants	Cost per participant
Vermont	757	\$42.25	1,857	\$19.15	154	\$113.37
Nevada	262	47.35	265	35.06	51	109.24

Other findings of the project suggest that telephone instruction, which hadn't been tried previously in either state, was met with high acceptance by both program aides and food stamp participants. Aides reported they could teach almost as much in a 5-minute telephone lesson as in a 30-minute face-to-face situation.

Conclusion

In a joint evaluation of the project, we concluded that a combination of all three systems tested in this project and tailored to participants' motivations, needs, and educational levels would provide a more cost-effective way to reach more low-income families with nutrition education than the present one-to-one or small group method, which is used in the Expanded Food and Nutrition Education Program.

Footnotes

1. Karin Kristiansson, Robert Honnold, and Aline Coffey, *Cost Effectiveness of Three Nutrition Education Systems* (Burlington: University of Vermont, Extension Service, 1980), p. 4.
2. *Ibid.*, pp. 18-33.
3. The learning effectiveness value (LE) is the difference between the total percentage of right answers in the posttest and pretest divided by the total percentage of wrong answers in the pretest.