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ABSTRACT

A report is given of the problems and successes of an evaluation team engaged in examining a 9-year community research demonstration project. The project, the Stanford Heart Disease Prevention Program, was designed to develop effective health education programs and to institutionalize these programs through community organizations so that they are maintained within existing systems over a long period of time. The evaluation team consisted of four individuals with different disciplinary perspectives, coming from the fields of: health and medicine, developmental psychology, community and youth education, and communications and media. In addition to identifying developmental trends in health behavior, the team was committed to conducting ongoing research with every project they introduced into the schools. A detailed description is given of the team's activities. Because the team was composed of four individuals with multiple roles, simultaneously involved in promoting research and development goals, the collaboration frequently involved conflicting goals and compromises as well as creative development. Nevertheless, their experience spoke to the importance of involving an interdisciplinary evaluation team if schools are to develop, implement, and institutionalize cost-effective health promotion programs. (JD)

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The Rich Gets Richer:
Multiple Sources of Qualitative Data
in an Evaluation of
School-Based Health Promotion Programs

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Stanford Center for Research in Disease Prevention

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Introduction

In the field of educational research it is not uncommon to find a number of disciplinary perspectives converging on the same problem. The very nature of educational activity implies that at least two specialties collaborate. Usually the partnership is comprised of an expert in subject-matter, such as math or reading, and a specialist from the social sciences whose discipline might include psychology or sociology. This collaboration is often more pronounced in educational evaluation research where policies are evaluated and the worth of programs are assessed.

The project we wish to report on in this paper also involved interdisciplinary collaboration. However, the members of our evaluation and program development team have disciplinary perspectives which are not frequently represented in educational programs. Our team brought together perspectives from the field of health and medicine, developmental psychology, community and youth education, and communications and media. Together, we worked to promote and evaluate several school-based, health promotion programs that were part of the ongoing projects under the Stanford Heart Disease Prevention Program.

The Stanford Heart Disease Prevention Program (SHDPP) is a nine-year community research demonstration project designed to investigate the impact of a comprehensive, integrated cardiovascular health promotion program on CVD risk, morbidity, and mortality. The two main educational goals of the Stanford Heart Disease Prevention Program are to develop effective health education programs and to institutionalize these programs through community organizations such that they are

maintained within existing systems over a long period of time.

The school-based health promotion programs were governed by these same goals. Since the project was in its last year of implementation under the direction of SHDPP, we focused our attention on the goal of institutionalization. Spurred on by the Surgeon General's Report (1980), and the specific goals outlined in the U.S. Department of Health and Human Services' report, *Promoting Health/Preventing Disease: Objectives for the Nation* (1979), the youth programs of SHDPP became an affirmation of how healthy behavior can prevent disease.

Additionally, since the field of health research is only now beginning to show promise in identifying developmental trends in health behavior, we were committed to conducting ongoing research with every project we introduced in the schools. We had previously developed and evaluated a nutrition program for elementary and secondary students which proved effective in changing both their knowledge and dietary habits (Flora, Benjamin, & Loesch-Griffin, 1986a; Flora, Loesch-Griffin, Benjamin, Farquhar, & Fortmann, 1986b; Loesch-Griffin, Flora, & Benjamin, 1986). Whether this program would outlast our involvement in the schools was another issue. In our attempts to answer this question, we continued to refine the curriculum in such a way that it was, for lack of a more timely term "teacher friendly". In addition, we designed a series of formative evaluation projects to investigate our research and development efforts.

In so doing, a new set of issues and sources of data have come to bear on the problem of teaching health promotion and disease prevention to students. We found that our interdisciplinary collaboration involved conflicting goals, compromise, and

creative development as we evaluated SHDPP's series of school-based, health promotion programs, primarily because this collaboration involved four individuals with multiple roles in the organization who were simultaneously involved in promoting research and development goals. It is our hope that by sharing our experiences we will stimulate new partnerships in health promotion and other areas of education.

The Interdisciplinary Evaluation Team:

The Promises and Problems of Implementing Health Education Programs
in the Schools

Our evaluation team consisted of four people. The first was the Community Evaluation Coordinator whose expertise was in epidemiology. The second member was the Youth Studies Project Manager, a research fellow with doctoral training in developmental psychology and education. The third and fourth members of the team included a human biologist with a specialization in the area of nutrition, exercise and physiology who consulted with us on curriculum development, and the Director of Broadcast Media who's background included community organization, social work, and documentary film and television production (See Appendix A).

Program Goals: Research and Development. The school-based, health promotion programs were but one segment of SHDPP's Community Education Program. Nevertheless, the communities' youth programs were an integral part of the research goals of SHDPP. They included a nutrition and exercise program for 3rd, 4th, 5th, & 10th graders, and a smoking prevention program for 6th & 7th graders. One of the two major hypotheses being tested by SHDPP stated that "risk decline will lead to a

decline in cardiovascular disease morbidity plus mortality in persons aged 30-74 that is significantly greater in the education cities than in reference cities (Farquhar, et al., 1985, p.324)". The school-based health programs were added during the 6th year of the 9-year project, partly because they alone could promote the goal of "risk decline".

The principal questions to be addressed in the analysis of the data obtained by SHDPP's Five City Project included two questions that directly related to the research and development goals of the school-based health promotion programs.

- 1) What is the efficacy of the education program, and which elements appear to be most effective in reducing cardiovascular disease risk factors?
- 2) Given study outcomes, and considering the relevant cost of the research components compared with the education component, what data can be provided to assess the costs of replications of the risk reduction strategy elsewhere?

We added to this second question an additional consideration other than the cost of replication:

- 3) What data can be provided to assess the utility of replications of the risk reduction strategy elsewhere?

In answering the first question, the evaluation plan focused on the programs' research goals. This goal involved only two of the evaluation team members, the Project Manager and the Community Evaluation Coordinator, since they alone were responsible for conducting any research in conjunction with piloting and

institutionalizing the programs. In answering the second and third questions the evaluation plan focused on development goals. Overall, the SHDPP health programs, including the youth programs, had six specific development goals: 1) Awareness, 2) Information, 3) Skills Training, 4) Motivation, 5) Maintenance, and 6) Community Organization.

Each member of the evaluation team had specific responsibilities related to one or more of these subgoals, which shaped their perceptions regarding the importance of particular activities in promoting the larger goal of development and institutionalization. As such, nearly all team members were invested in every goal, but the audiences for which these goals were targeted, and the priority level of one goal over another differed from one member to the next (see Appendix B). Some examples of our combined efforts follow.

Students and parents were drawn together as health promotion partners. Students became peer leaders, teaching classmates the fundamentals of saying "no" to smoking pressures.

Teachers and administrators became "pioneers" in the field as they piloted the various programs and communicated their involvement across the community via the news network.

Volunteers from various agencies and within the school district teamed up with the teachers to articulate cross-district health requirements and programs. A position was created within one community which allowed the elementary and secondary schools to communicate with one another and coordinate programs as well as assist

with local research efforts.

Community members who were not school-aged youth became aware of both community and school-wide health education efforts and were channeled to the resources in their area that were appropriate for them.

Since the youth programs were implemented in 4th, 5th, 6th, 7th, and 10th grades and SHDPP maintained individual, community (e.g., restaurant and grocery store programs), and worksite programs for adults, entire families were involved at multiple levels and across a variety of risk factors (i.e., smoking, exercise, diet, body weight, and blood pressure).

The result of this complex network of goals, perceptions, and priorities was a combined effort which stretched the content and role of health intervention programs beyond the classroom.

Influential Factors. Within the framework of program development and implementation the evaluation plan took into consideration such factors as context, input, process, and product variables (King, 1986) and their impact upon the program's goals.

Context factors included geographic location and demographics of the program (from a school on a nearby military base to the schools which served children of migrant workers), political factors, and other student characteristics. This factor was a major concern for every team member, since the health promotion programs were aimed at multiple audiences within and across communities and involved the cooperation and coordination of students, parents, teachers, and administrators.

From the content of the curriculum to the classroom for which the program would best be suited; from the training of teachers to the airing of a news program, this factor called upon each of us to consider the number of possibilities and derivations that could result from our implementation and institutionalization efforts. We had to consider such questions as: 1) did our healthy food choices reflect ethnic diversity and preferences? 2) was it better to teach the 10th grade curriculum in health education, physical education, SRC (state requirements course), or home economics classes? 3) should we train teachers during or after school if these times had differing rates of attendance--physically and mentally)? and 4) were we using a broad cast of characters (in terms of gender, race, and SES) in all of our audio-visual materials to represent the audiences for which the programs were intended?

Input involved the amounts of resources that schools could or would commit to the programs. This factor was critical as we began to plan the institutionalization of the programs. Financial resources were an element of this factor, as were personnel resources, administrative support, stipulations placed upon students which required them to complete units in nutrition, exercise, and smoking prevention as part of their curricular or graduation requirements, and compensation for training and curriculum development. The Project Manager and Community Evaluation Coordinator were primarily concerned with this factor. Since most of the programs were implemented with a research agreement, and two of the programs involved audio-visual materials, the commitment of resources was two-way. Therefore, the Director of Broadcast Media also became involved in committing resources to the institutionalization of the

programs.

Process factors involved implementation and pedagogical techniques.

Three members of the evaluation team concerned themselves with this factor, since the development, refinement and addition of new topics to the existing curriculums depended largely on the data collected from classroom observations, expert teaching experiences, teacher interviews, and surveys. No matter how important the content, if it was not being covered, the curriculum needed to reflect this.

Finally, student outcomes were considered the product. For the most part, this was a research concern, since we were trying to demonstrate the efficacy of the curriculums at the individual level of behavior change. The importance of this factor was the improvement and creation of a methodology for recording physiological; psychological, and sociological behavior change. Therefore, the Project Manager and the Community Evaluation Coordinator considered the various measures that were important to documenting this change. The human biologist also served as a consultant with respect to the product factor since she was an expert regarding which exercise measures were most appropriate for assessing behavior changes. Additionally, she used the outcome data from the nutrition curriculum to shape the exercise content and activities. When the Director of Broadcast Media solicited our help in putting together a health education youth series for the T.V. news station, we were able to develop a methodology and database regarding our product that we would never have conceived was possible, and which allowed us to assess personal perceptions and anecdotal data to support or refute the outcome data we collected via

surveys and behavioral measures.

Channels. The research and development goals of the school-based health promotion programs were achieved in a variety of ways--or more specifically, through a variety of channels. Each channel conveyed a particular message to a particular audience. Moreover, each channel reflected multiple perspectives on the challenge of educating a community and its youth regarding health promotion and disease prevention. Each was constructed from a knowledge base that only an interdisciplinary team can support. Through our combined efforts, we were able to increase the channels we utilized as well as expand the quality of each channel. The schools were our primary channel. Through the schools we were able to train teachers, implement classroom programs, and recruit additional personnel resources.

Since the schools were committed to a number of curricular requirements, we adopted the policy of creating short-term, intensive classroom health interventions. Since we didn't have the luxury of time, our classroom programs not only had to convey information and sustain the interest of students, they had to teach them something which could assist them in changing their health behavior. Toward this end, we each contributed our expertise and were able to create programs which were effective in changing the health behavior of school-aged youth. The programs were visually appealing (print, graphics, and media), addressed a variety of learning styles (e.g., didactic presentations, small group discussions and audiovisual presentations) and provided students with the practice they needed in changing their behavior (individual rehearsal, contracting, roleplaying, and take-home assignments).

In addition to the schools, other channels consisted of the home (parents or adults), media (e.g., youth series for TV, radio and newspaper spots), a community health consortium, and community organizations (e.g., hospitals, foundations). These channels were used as a means to either inform our audiences about the school programs, recruit the participation of community members and parents to assist with the program implementation and research efforts, or solicit financial support for the maintenance and expansion of our health promotion programs.

Evaluative Criteria: Methods and Strategies for Data Collection. The various roles each team member assumed also allowed us to integrate and develop a variety of approaches for collecting data on the impact, diffusion, and institutionalization of the youth programs. These methods provided behavioral measures for those topics identified within the programs' goals inasmuch as we gathered data on attitudes, knowledge, diet, exercise, smoking, stress, confidence and intentions, communication flow, and organizational behavior. Ultimately, these methods and sources of data gave us a much richer picture of the programs' effectiveness than we were able to assess from the results provided through the collection and analyses of student survey and behavioral measures data.

The primary responsibility of the first two team members was to research, develop, and institutionalize the school-based health promotion programs. As a content specialist and instructor for the pilot versions of the curriculum, the Community Evaluation Coordinator was able to provide input on the depth and logic of the material covered. In her role as participant observer (she acted both as the outside knowledge

expert in the role of teacher, and as a resource expert to the regular classroom teacher) she provided us with essential information on the curriculum's feasibility, readability, and areas where the content was sacrificed because of instructional constraints. The project manager had previously been a high school counselor and had taught in the high school setting. In her research role she researched, designed, and piloted the surveys that were used with the various programs. She also held meetings with the school and district administrators, and collected curriculum guides and state documents which enabled her to identify and analyze areas where SHDPP's health programs could complement the local school districts' and the state's curriculum requirements (the number of hours to be covered in elementary health education or units in health required to graduate).

In addition, both team members conducted formative research with focus groups of adolescents which clarified what misconceptions and need areas should be targeted in the curriculum. This research was followed by classroom observations of the curriculum being taught by the classroom teacher and the Community Evaluation Coordinator. The interviews the team members conducted with teachers who participated in the pilot versions of each of the youth programs identified what instructional methods they believed were most successful with the students and which they planned to adopt or discard when they implemented the program in their classrooms in the future.

The second two members had auxiliary duties within SHDPP, and were interested in the development of the youth projects. The human biologist had a

narrower focus. She was concerned with producing an exercise curriculum which would complement the existing nutrition curriculum in format, but provide greater depth and content knowledge of aerobic exercise and physiology. She evaluated each session of the earliest versions of the curriculum by recording students' reactions to the content and activities during classroom observations and analyzing the session surveys that the Project Manager had developed and disseminated through the teachers to assess the accuracy with which students recalled the content of each session.

The Director of Broadcast Media became a member of the evaluation team when she undertook a media project designed to raise the communities' awareness about SHDPP's existing health promotion programs in the schools. In producing a fifteen-minute, five-part youth series for the nightly news broadcast, she produced twenty, twenty-minute tapes of unedited interviews with students, parents, teachers, and district administrators. The taping process and subsequent data base became one of our primary sources for evaluating the program's effectiveness and receptivity across a broad array of audiences, which we felt added a unique dimension to our evaluation design since schools rarely have the capability to produce and use visual media for specific teaching purposes, much less for evaluation purposes.

In summary, we were able to use interdisciplinary methods drawn from psychology, anthropology, education, and communications to compile the database we used throughout our evaluation. These included: 1) surveys 2) behavioral measures, 3) participant observation, 4) interviews, 5) classroom observations, 6)

content analysis, 7) document analysis, and finally 8) visual records of the programs' audiences and ongoing activities.

Discussion

Problems and conflicts in discipline-related goals and strategies. The greatest degree of compromise and conflict in evaluating the various health promotion programs centered around the need to achieve and sustain research and development activities. Within these activities, there were four themes that illustrated the types of conflicts we experienced in our various roles within SHDPP: 1) determining the effects of the isolated treatment intervention on the health behavior of school-aged youth vs. improving the community awareness and behavior, 2) delivering a short-term intervention for time and cost effectiveness in the schools vs. delivering a complete and comprehensive program of information and behavior change principles, 3) Working within the existing framework of classes and teaching styles to deliver the interventions vs. having complete control over participation, dissemination, training, and implementation and, 4) developing a youth series media product which acknowledged the contribution community members and school staff and students had made to the programs' success vs. one which served as a means for getting a high quality product out to the community.

The youth programs were initially designed with a research goal in mind. From the beginning we were faced with balancing the needs of the community with the need to conduct reliable and valid research. Research is regarded as an intrusion into the daily life of the classroom. It interrupts the routine, requires careful monitoring and

entails additional time and tasks. Yet relevant research of functioning, school-based programs requires the cooperation of schools and teachers. We solicited the cooperation of schools by agreeing to give them the curriculum, the training, and reporting the results of the piloted programs.

One of the difficulties we encountered in the shift from researching, piloting, and later institutionalizing the curriculums illustrates the first theme quite well. We were reluctant to distribute the curriculum and program videotapes, or let go of the curriculum in its pure form so it could be adapted by teachers according to their own styles and objectives simply because we were uncertain of the worth of the curriculum as a complete but singular treatment. In keeping with the research tradition, we nearly sacrificed our other goal of development and institutionalization. Teachers who had used the curriculums in the pilot versions wanted to continue doing so as part of their regular curriculum and had allotted time for it in their daily schedules. However, the teachers began to lose interest or supplement what they had of the curriculum with other nutrition and health materials when the material was either unavailable or useable only when a member of the research team was present to assist them.

An example of the second theme involved the purpose of the design and activities included in the health promotion programs. The programs at the high school level incorporated didactic, small group work, audio-visual presentations, and independent take-home assignments. From a research perspective, all of these components made good sense. We were emphasizing knowledge and behavioral change. From a development and practicing perspective, the components required

more of the teachers than they were either trained to give, felt capable of giving, or believed was necessary to give. We overviewed the session formats and previewed the AV materials as part of the training, but assumed that teachers were competent at running small and large group discussions. Integrating the A-V materials with the didactic presentations required two people teaming together to present the program as it was designed. Finally, the small group participation was often eliminated because teachers did not ordinarily use this instructional method across other curriculum areas.

Another conflict between the dual goals of research and development that illustrates the fourth theme arose because SHDPP had agreed to provide program materials to the teachers involved in piloting the programs. As we moved toward institutionalization and greater numbers of teachers were adopting the curriculums for use in their classrooms during the second and third year of the program, the role of SHDPP became less clear. Requests for program materials, educational videotapes, and training time, often resulted in conflicts regarding whose resource allocations should take priority, which ultimately translated into which goals--institutionalization or advertisement and recruitment-- should take priority.

The research literature had pointed to the importance of training teachers if health promotion programs were to achieve maximum benefits for students. Administrators supported the idea, and usually took the initiative to set up a meeting time and place for their staff to attend. However, school schedules and substitute costs usually meant that the training sessions occurred at the end of the working day, when teachers would ordinarily be off or preparing for their next teaching day. Therefore,

only the most motivated teachers attended, and those who's attendance was mandated often absented themselves mentally once the meeting was underway. The intensive, uninterrupted training time recommended by program critics and researchers represented the ideal, not the reality.

Advantages and enhancing features of the interdisciplinary health evaluation team. While it is true that the various perspectives, roles, and goals we held as evaluation team members involved conflict and compromise, it is equally true that we benefitted greatly from our collaboration. The final consequence of our collaboration was a strongly enhanced evaluation of the problems and possibilities of researching and developing school-based health promotion programs. These benefits took two forms: 1) We were able to construct a rich database that improved and extended the accuracy of our evaluation and, 2) we were able to secure a support base and membership that extended beyond the traditional school or classroom setting.

Included in our data base were the impressions left by our programs on students, parents, educators, and administrators. We collected perceptions from these audiences which reminded us that children learn more when they view themselves as experts or partners in a process. We also were reminded that educators are also community members and parents, which extends their sphere of influence beyond the boundaries of the classroom. Additionally, our most enthusiastic membership may sell the programs, but they may not represent them accurately, a fact that increased our own awareness of the gaps that existed in teachers' health knowledge, and which ultimately led us to research the effects of teacher knowledge on student outcomes.

The multiple contacts and the various forms of representation developed for the programs (curriculum materials, videotapes, reports) enabled us to secure funding from local as well as national sources. The involvement of parents in the elementary health promotion program and the airing of the news series assisted with the recruitment of volunteers from community agencies. Additionally, the programs provided a forum in which a variety of community organizations or agencies could participate--through the provision of financial, human, political, and social networking resources. The information we provided the schools and communities on the effectiveness of the health promotion programs lent support to their positions for setting policy and allocating resources toward the maintenance of these programs.

The final version of the health promotion programs as well as the framework within which the programs continued to be supported and implemented represented the labors of all of the evaluation team members. Our multiple disciplinary perspectives enabled us to narrow the gap between theory and practice. SHDPP's school-based health promotion programs are the inevitable result of continual refinement and expansion built from the premise that every piece of information gathered in our roles served a purpose. Each conversation shared at board meetings or in faculty lunchrooms, every student's reactions and comments to the video or the written activity sheets, each new volunteer recruitment and pledge for financial support could be interpreted as a response to one or more of the questions posed at the onset of this paper, and more generally stated as, "what were the programs' effects"?

Summary

The field of health promotion has gained national importance, and in so doing has enabled people from diverse disciplines to merge their interests, their expertise, and their material resources. Our collaboration under this project produced a wealth of data, providing new sources to be employed in the development and evaluation of educational programs. However, since health promotion programs are often funded with the stipulation that they be developed, expanded, and institutionalized at the same time that the efficacy of program elements and single interventions are researched, this unique partnership has given us insights into the difficulties that arise when we attempt to reach competing goals. Nevertheless, we believe our experience speaks to the importance of involving an interdisciplinary evaluation team if schools intend to develop, implement, and institutionalize worthwhile, cost-effective health promotion programs.

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**MULTIPLE
DISCIPLINES**

HEALTH/MEDICAL
PSYCHOLOGICAL
**COMMUNITY/YOUTH
EDUCATION**
**MEDIA/
COMMUNICATIONS**

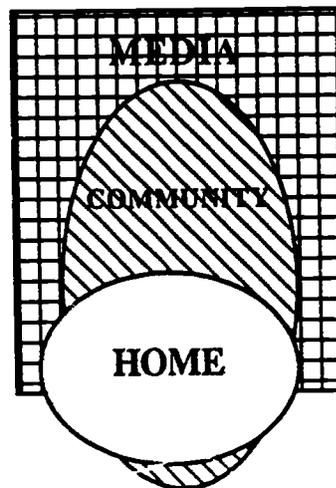
CHANNELS

**S
C
H
O
O
L
S**

**MULTIPLE
AUDIENCES**

GOALS

**INFLUENTIAL
FACTORS**



**EVALUATIVE
CRITERIA:**
METHODS/ STRATEGIES

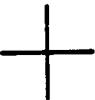
APPENDIX A

**PUBLIC HEALTH MODEL OF SCHOOL-BASED
HEALTH INTERVENTIONS**

PROGRAM GOALS

RESEARCH GOALS

DEVELOPMENT GOALS



To Research which psychological/cultural/sociological/ factors are most predictive and related to health behavior changes in school-aged youth.

AWARENESS **INFORMATION**
SKILLS TRAINING **MOTIVATION**
MAINTENANCE
COMMUNITY ORGANIZATION

To decrease or prevent disease-- specifically cardiovascular disease

To involve all workers, teachers, and community members in health promotion efforts.

TO IMPROVE THE INDIVIDUAL'S HEALTH STATUS.

To alter the lifestyle and activities of surrounding community to reflect healthier attitudes, behaviors, and healthy options.

To increase students' health-related knowledge & choices
 To develop and provide a comprehensive health program.
 To require students to pass a health course.
 To decrease the number of hazardous and disruptive health behaviors of school-aged youth.
 To disseminate complete and accurate health information.
 To certify that students have a complete understanding of the basis and effects of health practices.

To involve families as educational partners.

To institutionalize the program through teacher training and curriculum revision and development

To develop political and financial supporty systems to insure the continuation of programs.

APPENDIX B

INFLUENTIAL FACTORS

* CONTEXT

GEOGRAPHIC LOCATION
DEMOGRAPHICS
POLITICAL FACTORS
STUDENT DEMOGRAPHICS

*INPUT

AMOUNTS OF RESOURCES

*PROCESS

IMPLEMENTATION AND PEDAGOGICAL TECHNIQUES

*PRODUCT

STUDENT OUTCOMES

APPENDIX C

These categories were borrowed from D. King's report on the School Health Education Evaluation (June, 1986). ASCD Curriculum Update.

EVALUATIVE CRITERIA:
Methods and Strategies

*Pre-Post SURVEYS

*BEHAVIORAL MEASURES

*PARTICIPANT OBSERVATION

*INTERVIEWS

*CLASSROOM OBSERVATIONS

*CONTENT ANALYSIS

*DOCUMENT ANALYSIS

*VIDEOTAPING OF PROGRAM IMPLEMENTATION,
& AUDIENCE PERCEPTIONS

APPENDIX D