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FACTORS ASSOCIATED WITH PEOPLE TAKING ACTION IN RESPONSE TO EDUCATIONAL INTERVENTIONS

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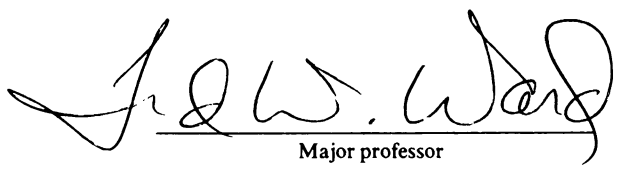

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FACTORS ASSOCIATED WITH PEOPLE TAKING ACTION IN RESPONSE TO EDUCATIONAL INTERVENTIONS

By

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ABSTRACT

FACTORS ASSOCIATED WITH PEOPLE TAKING ACTION
IN RESPONSE TO EDUCATIONAL INTERVENTIONS

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Development education plays an important role in enabling people to learn how to act on their own behalf. A frustration that educators face in helping people take action is that people respond differently to the same educational intervention. A problem exists in that educators do not know why people in traditional communities respond differently to the same educational interventions. People in traditional communities choose to act on what they have learned for reasons that are beyond the control of the mode and quality of educational interventions.

The purpose of the study was to identify factors in people's perception of their experiences that are associated with the way they respond to educational interventions. The specific question asked in the study was the following: What factors differentiate communities where people readily take action on what they have learned from communities where people do not?

The researcher used a grounded theory approach to conduct comparative analysis of people's experiences. The nominal group

technique was used to inquire into the perceptions and experiences of people in six communities that had varying percentages of members who regularly washed their hands before eating.

The researcher found that in communities where people identified with informal exchange, earned sources of authority, mutual exchange, and traditional habits, people were more likely to take action. In communities where people identified with a self-taught setting, personal authority, and customs having to do with a good image, people were less likely to take action.

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The writer wishes to acknowledge the wisdom and moral support given by Dr. Manuel Naula. Soon after the data-collection experience, Dr. Naula was stricken with cancer and passed away. Dr. Naula was one of the few Quichua professionals who returned to work with his people. It was his dream to have a self-supporting health center that served the curative and preventive health needs of his people. This research was to have been a valuable contribution to ministering to people's needs for preventive and promotive health services.

The writer also warmly acknowledges the financial support provided by MAP International. MAP pledged its commitment and never waivered during the writer's three years of study and research. Merrill Ewert and Bill Senn deserve special recognition for all their efforts in support of the study and research program.

A special appreciation goes to the following people who contributed to the research effort: to Jose Maria, Chivo, and Jose, who were great process facilitators; to Manuel and Betty, who helped interpret the data and gave insights into the Quichua mindset; to Bill, who gave moral support and helped out when the time became tight; and finally, to Jennifer, who was supportive through the many months of having a husband whose mind was consumed with dissertation matters.

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CHAPTER I

PURPOSE

Development educators in the Third World commonly hold the conviction that an important outcome of educational interventions is people taking action. Services and infrastructure alone will not make a difference in improving the lives of rural, socioeconomically marginal people. People need to learn how to use the resources that are available to them (Botkin, Elmendjra, & Malitza, 1979). Development education plans an important role in enabling people to learn how to act on their own behalf.

A frustration that educators face in helping people take action is that people respond differently to the same educational intervention. In some areas a high percentage of people take action on what they have learned, while in other areas few people respond. Plans are discussed, agreements are made, educational experiences are planned and implemented, yet people do not uniformly take action on their own behalf.

Certain qualities exist in people's lives that result in a differential response to development education. People from traditional communities have experiences and perceptions that result in

differing responses to development and educational interventions (Goulet, 1976).

The Problem

A reciprocal relationship exists between development education interventions and qualities within people in traditional communities that affect their response to the interventions. Goulet (1976) referred to people's values as the fundamental quality that affects their response to the development process:

> Development is above all else a question of value. It involves human attitudes and preferences, self-defined goals, and criteria for determining what are tolerable costs to be borne in the course of change. These are far more important than better resource allocation, upgraded skills or the rationalization of administrative procedures. (p. 35)

What inhibits or facilitates change is not the rationality of methodology or technology. Rather people's responses are governed by qualities in their perceptions: the "inner limits of the given society's existence rationality" (Goulet, 1976, p. 43). Goulet stated that very little is known about the internal dynamics that affect how people in traditional communities respond to development education interventions.

Freire (1970) referred to people's view of reality as the fundamental quality that affects their response to the development process. A positive response is acted out by a transformation of reality. Reality, in turn, is based on local people's "perceptions of their situation and of themselves in their situation" (p. 73).

O'Gorman (1979) conducted a study on the qualities in individuals who choose to act on their own behalf. The study identified the socio-kinetics of praxis among poor people in a Third World setting. O'Gorman found, however, that even in the best of circumstances some people do not choose to take action. The study raised the question of why some people act while others do not. More needs to be known about the qualities in people's perceptions of their experience that affect the way they respond to development interventions.

A problem exists in that educators do not know why people in traditional communities respond differently to the same educational interventions. People in some communities readily take action on what they have learned, while people in other communities do not.

While development educators may strive to enable people to take action, they are frustrated by the reality of people's differential responses to educational interventions. One way that some educators cope is to search for educational strategies and methods that result in increased responses, especially communities where very few people take action. Yet frustration sets in when a method works in one situation but not another. Educators' reactions to the situation can range from doing more of the same to criticizing people for being disinterested in improving their lives.

Educational strategies and methods do not provide a complete answer to the issue of helping people take action. People in traditional communities choose to take action on what they have learned for

reasons that are beyond the control of the mode and quality of development interventions (Goulet, 1976).

The importance of understanding community perceptions and experiences has a direct bearing on a key ethical issue: whether development education interventions shape community members, or whether community members shape the interventions. According to Goulet, people in traditional communities who experience long-lasting change are those who shape development interventions to fit their concept of the situation in which they live. Thus understanding community members' perceptions of their experiences is an important issue in enabling people to take action on their own behalf, and not on behalf of others.

The Purpose

People in traditional communities have percetpions and experiences that affect the way they respond to development education interventions. The purpose of the study was to identify factors in people's perceptions of their experience that are associated with the way they take action in response to educational interventions. The study focused on the factors that differentiate people who take action from those who do not. The learning issue addressed in the study was the application of knowledge in daily life.

The context of the study was the field of health education in a community development setting. The researcher inquired into the differential response of communities in the application of a preventive health behavior. People in the research setting had been involved in a community health project for five years. After five years a

discrepancy continued to exist in the application of health behaviors that prevent illness. In some communities a high percentage of people took action on what they had learned, while in others a lower percentage did so. The discrepancy existed even in situations where the quality of Health Promoter intervention was uniform.

Research Question

The current research in adult education emphasizes the need to understand learner characteristics (Cross, 1982). The nature of learners has a great effect on people's responses to educational interventions. In development education, educators need to know more about why people in traditional communities respond differentially to educational interventions. The specific question asked in the study was the following:

> What factors differentiate communities where people readily take action on what they have learned from communities where people do not?

The research question focused on factors related to people's experience in the adoption of a preventive health behavior.

Overview of the Research

The researcher inquired into the experiences of people in six communities with varying percentages of adults who practiced a specific preventive health behavior. The people were Quichua Indians in the highlands of Ecuador, South America. The research population lived in the same region and shared the same socioeconomic status.

A comparative analysis was conducted of people's experiences in applying a preventive health behavior. Communities were identified that benefited from a comparable quality of Health Promoter intervention, yet differed in the percentage of people who applied recommended preventive health behaviors. People in communities where a high percentage of adults practiced a preventive health behavior were interviewed. People were asked about perceptions and experiences that influenced them to apply a recommended health behavior. People in communities where a lower percentage of adults practiced the same behavior were also interviewed. The responses from the communities were then analyzed to identify factors that influenced people to apply the health behavior. A chi-square analysis was used to determine the factors that differentiated the communities where people readily took action from communities where people did not.

Implications From the Research Literature

A host of factors potentially affect behavioral change. One focus of the research in the field is on understanding the nature of the learner. Much of the research thus far has focused on the characteristics of the individual learner, especially the learner who has successfully implemented behavioral changes.

Three general implications for continued inquiry emerged from the analysis of the literature in the field. First, more needs to be known about how people change in specific settings (Cross, 1982; Tough, 1978). What is known about the nature of people is too general to be

accurate in specific instances. For example, what are the differences between the learner as a hobbyist and the learner who needs survival skills? How do the differences in the situations affect the choices that people make?

Additionally, more needs to be known about how life experiences affect the choices that individuals make. While much is known about the successful learner, Rogers (1983) found that the majority of people in Third World settings do not have the characteristics of successful learners. Low-status people change much slower than high-status people, yet they do change. More needs to be known about the dynamic factors in low-status communities that are associated with change.

Second, researchers need to inquire into relational factors that are associated with behavioral change (Rogers, 1983; Taylor, 1981). Much of the past research has assumed that individual decision making is the primary source of change. Now more needs to be known about how relational factors affect behavioral change.

Third, Tough (1982) highlighted the importance of a natural process of change. More needs to be known about the natural process of change in Third World settings, particularly in an educational context. What is the natural process of change in traditional societies, particularly in response to learning interventions?

Research limitations drawn from the literature. The researcher limited the research question by drawing on four implications from the research literature:

1. The study was limited to inquiring into qualities of people's perceptions about their experience, not into effective educational interventions. The study inquired into the nature of learners in response to health education interventions. The mode and quality of the intervention were controlled in a socially acceptable manner in order to identify people's perceptions of their experience.

2. The research was conducted in a specific setting among low-status people. The researcher inquired into the nature of people in rural communities. The people in the research setting were small farmers. The people were Quichua Indians who had been discriminated against socially and economically. Educationally, the adult males had an average of a second-grade education. The women had an average of less than one year of schooling. Additionally, the setting was limited to inquiring into the application of preventive health behaviors in the context of a primary health care project.

3. The researcher inquired into community-level factors associated with the application of learning. People grouped in communities, not individuals, were the unit of study. The researcher inquired into the differences among communities that shared the same cultural, social, and economic characteristics. In the research setting a difference existed among the communities in the percentage of people per community who applied what they had learned about preventive health behaviors.

4. The researcher inquired into behavioral change in the context of people's experiences with behavior change. The research was

conducted in a setting where communities had participated in a primary health care project for five years. Over that time, community members had participated in learning experiences in community meetings, literacy classes, religious meetings, and community work bees. For example, people had been learning about boiling water, washing hands, and controlling diarrhea in children for over five years.

Worth of the Study

The study had four major outcomes. The outcomes pertained to understanding the nature of learners in a community context in a traditional society.

1. The study increased development educators' understanding of the qualities in low-status people as learners. The researcher inquired among groups of people who did not have characteristics of "successful" learners such as high income, high level of education, and high social status.

2. The study increased development educators' understanding of community-level factors associated with taking action.

3. The study generated a set of factors that differentiate communities where people readily take action in response to educational interventions from those that do not. The factors can serve as variables to be tested in subsequent research in community-level factors that influence taking action.

4. The researcher made recommendations about adapting development education curriculum to community-level factors. The study helped

educators know how to adapt educational interventions to the difference in the way community members respond to educational interventions.

Assumptions

The researcher made three major assumptions that affected the outcomes of the study. First, he assumed that the differences among communities are a function, in part, of community-level factors that are not directly a part of educational interventions. Many factors potentially influence community members' experiences and perceptions. The researcher controlled the mode and quality of intervention and the socioeconomic factors in order to isolate the differences in experience and perceptions that were due to community-level factors.

Second, the researcher assumed that the community-level factors had an effect on the percentage of people per community who took action on what they had learned. The case may be that factors discovered in the study were not as important in taking action as other extraneous factors.

Third, the researcher assumed that social control of extraneous variables adequately isolated the community-level factors associated with taking action. The study was conducted in the context of an existing development project where extraneous variables could not be controlled a priori.

Definitions

Preventive health behavior. A behavior that people adopt in order to prevent illness and to promote good health. In the context of

the study, examples of preventive health behaviors are using latrines, brushing teeth, boiling water, receiving vaccinations, and washing hands before eating.

Taking action. The phrase is limited in the study to actions taken by people in response to education interventions. For example, taking action refers to the act of washing hands before eating in response to health promoters teaching about preventing illness by washing hands.

Community-level factors. The community-level factors represent the sum of like responses given by people in each community. In one community a majority of people answered an interview question in one way, while in another the majority gave a different answer. These differences in the number of people who answered in one way as opposed to another were compared to determine the factors that differentiated the responses among the six research communities.

Nominal group technique. The nominal group technique is an interview technique that combines an individual and group reflection process. The process begins with individual reflection and then follows with structured group interaction. The nominal group technique is a way to structure group interviews and encourage individual expression at the same time.

Educational interventions. In the study educational interventions refer to the educational strategy and methods used to communicate information about practing good health habits. For example, health promoters intervene by giving health classes in community

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meetings or by visiting people in their homes to consult on locating and building latrines.

Differential response. In the research population, communities differed in the percentage of people who applied the recommended preventive health behavior of washing hands before eating. In some communities a high percentage of people washed while in others a lower percentage did so. Communities differed in their response to educational interventions for reasons beyond the quality and mode of educational interventions.

Summary

Development educators in the Third World commonly hold the conviction that an important outcome of educational interventions is people taking action. People in traditional communities, however, have experiences and perceptions that affect the way they respond to development education interventions. Educators face the frustration of people responding differently to the same educational intervention. Educators do not know why communities respond differently to the same educational intervention. People in some communities readily take action on what they have learned, while people in other communities do not.

A frequent response of educators is to search for educational methods that will result in increased response, especially from communities where very few people take action. Educational methods do not provide a complete answer. People in traditional communities choose to take action for reasons that are beyond the control of the mode and

quality of development interventions. Understanding people's perceptions of their experience is an important issue in enabling people to take action on their own behalf, and not on behalf of others.

The purpose of the study was to identify qualities in people's perceptions of their experiences that are associated with the way they take action in response to development interventions. The study inquired into qualities in people's perceptions by identifying factors that differentiate communities where people readily take action on what they have learned from communities where people do not. The study was designed to increase educators' understanding of factors in community life that influence people's responses to development education interventions.

CHAPTER II

LITERATURE REVIEW

Many different fields have contributed to educators' knowledge of how to help people learn and then take action. The researcher reviews three fields of literature that have contributed to understanding how people change in the context of planned interventions. The fields are social science, adult education, and health education. The review of social science literature provides a broad perspective on the factors in the change process. The review of adult education and health education presents a more specific summary of the issues that pertain to understanding the factors associated with the way people take action.

Social Science

The social science field offers a set of factors associated with the general process of change. The insights from social scientists deal with broad issues of change strategy that educators can use in designing a framework for educational interventions.

Research by social scientists has resulted in the identification of a large number of factors. Some research has focused on the individual change process. Other research has focused on community factors. An extensive analysis of change factors has been conducted by

Rothman (1974), Edwards and Jones (1977), Zaltman and Duncan (1977), and Rogers (1983). From these authors alone, 61 factors have been identified as influencing community and individual change. The study has organized the list of factors into three categories: personal factors, structural factors, and community/group dynamics factors. A summary of the factors from the literature is listed in Figure 1.

Community Factors

Rothman (1974) conducted a comprehensive survey of the factors that affect community change. He categorized the factors into four areas: dynamics of the social change process, community structure, organizational factors, and attributes of practitioners. Some of the factors are inherent in the communities. For example, social change objectives, the stages in the change process, and the task environment are factors inherent in communities.

Some of the factors presented by Rothman are external; the factors relate to the nature of the intervention. Organizational factors and personal attributes of the change agent are external factors that characterize the quality of intervention. The most important attribute of the change agent is the ability to have positive interpersonal relationships. Rothman stated that while much progress has been made, many factors identified in the literature are too general. In particular, he saw a need for a deeper understanding of community factors. The indicators of community factors that he found in the literature were inconsistent from study to study. Rothman found that it was difficult to make comparisons across studies because of the

PERSONAL FACTORS

Decision-making process (Zaltman & Duncan, 1977)
1. perception
2. motivation
3. attitude
4. legitimation
5. trial
6. evaluation
7. adoption
8. resolution

(Rothman, 1974)
9. awareness of issues
10. previous experience

Personality (Rogers, 1983)
1. empathy
2. high aspirations
3. less fatalistic
4. less dogmatic

Attitudes (Bostrom, 1983)
1. highly held values
2. social influence processes

(Deutcher, 1973)
3. context of attitudes and actions

Perceptions of innovations (Rogers, 1983)
1. relative advantage
2. compatability
3. complexity
4. trialability
5. observability

(Zaltman & Duncan, 1977)
6. impact on social relations
7. reversibility
8. communicability
9. time

STRUCTURAL FACTORS

Socioeconomics (Rogers, 1983)
1. education
2. literacy
3. social status
4. economic status

(Rothman, 1974)
5. age
6. socioeconomic status
7. education

Community structure (Rothman, 1974)
1. nonhierarchical governing structure

Organizational structure (Rothman, 1974)
1. structures that maximize citizen participation
2. institutional traditions
3. relative power
4. popular support
5. having technical skills
6. having time for interaction
7. leaders' attitudes

COMMUNITY/GROUP DYNAMICS

Community action process (Edwards & Jones, 1977)
1. recognition of need
2. initiation of action
3. study and diagnosis of action
4. selection of goal and plan
5. goal achievement
6. institutionalization of the achieved action

Dynamics of social change process
1. social change objective
2. stages in the change process
3. task environment

Cultural norms (Rothman, 1974)
1. authority patterns
2. world and life view

Communication behavior (Rogers, 1983)
1. interconnectedness
2. social participation
3. cosmopolite
4. diffusion effect

Climate for change (Zaltman & Duncan, 1977)
1. perceived need for change
2. perceived control over the change process
3. openness to change
4. potential for change
5. commitment to change

Figure 1: Factors associated with community action.

difficulty of matching factors. Rothman proposed that more needs to be known about case-specific factors before broad generalizations can be made.

Individual Factors

Zaltman and Duncan (1977) contributed to further understanding of factors associated with the change process by proposing a model based on individual decision making. The factor affecting individual action is called confirmation. Confirmation requires two steps. One step is the initial adoption/rejection decision. The second step involves behavioral change expressed in repeated and continued usage of an innovation. The decision of continued action is called resolution making.

The ideal state for Zaltman and Duncan is when individuals and communities have the capacity to sustain change. They devoted a large section of their book to presenting a conceptual model of change that leads to sustained change. Zaltman and Duncan, however, recognized that models of the change process assume a linear, staged sequence of adoption. In practice the patterns of people's experience are often nonlinear. They called for research that describes the actual experiences of people in establishing routine change behavior. From the descriptions, they proposed that categories of descriptions be developed that empirically explain change behavior. The descriptions can help to clarify and deepen development workers' understanding of conceptual models of change behavior.

Summary

The literature on community factors associated with change has identified a long list of factors. Rothman (1974) stated that the definition of factors is too general to be useful in practice. Rothman called for a deeper exploration of factors out of community experience.

The literature on individual factors assumed a linear sequence and a rational decision-making process (Zaltman & Duncan, 1977). The problem is that, in life, people process many factors at once and do not necessarily act on the basis of rational processes. Zaltman and Duncan called for descriptions of the change process in specific situations that can add meaning to conceptual models of change. Additionally, Zaltman and Duncan's model was based on a North American perspective on change that views change in terms of individual change processes. In a Third World context, individual decision making is not necessarily the basis for change behavior. The behavior of people in respect to the group is a factor in the change process (Rogers, 1983).

Adult Education

Three clusters of literature in adult education have contributed to an understanding of how to help people learn and change. The clusters have been organized according to the particular focus certain authors have on the learning and action process. One cluster has a focus on the learner. A second cluster has a focus on methodology. A third cluster has a focus on social structures.

Focus on the Learner

A cluster of authors in adult education have gone beyond administrative concerns to positing that the most important dynamic in the learning and acting process is the nature of learners as they interact with the world. Administrative concerns are more appropriately addressed following an understanding of the nature of learners.

The learner as an adult. Knowles (1980) brought to educators' attention that teaching adults in ways that they were taught as children is not effective. Adult learning operates on assumptions that are different from the assumptions that are used in child learning. Adults have experiences and knowledge to contribute to a learning experience. Adults are interested in learning specific things, and they need to be involved in defining their own learning tasks. The things adults are ready to learn relate to their social and career roles and to their particular development interests.

Knowles contributed to understanding how to help people learn by treating them as adults, not as children. His insights set the stage for the work of Cross and Tough on the nature of adults as learners.

The learner as a unique person. Cross (1982) synthesized the research in the field of adult education. According to Cross, the new priority for adult education is understanding the learner as a person, not an object of learning.

Cross pointed out that most of the instruments for gathering information about learners are limited to superficial needs-assessment

techniques. Needs assessments do not begin to provide insights into learners as people. Consequently, she organized the available research on adult learners. Cross's synthesis of the literature revolves around four questions: Who participates in learning activities? Why do adults participate in learning? What do adults want to learn? How do adults learn?

Much of the research in answer to the preceding questions has centered on social and demographic characteristics of adult learners. Cross, however, found that the variables identified from the above characteristics account for only a small part of the variability among adult learners. Consequently, she called for a new framework for describing learners that includes past experiences, what learners think about school and nonschool learning, and what they think about their life situation. To promote research on variables that affect adult participation in learning, Cross proposed a Chain of Response model. In the model she suggested that variables affecting participation form a chain of interlinking variables. The variables are self-evaluation, goals and expectations, and opportunities and barriers.

The learner as a self-directed being. Tough (1982) conducted research on intentional changes among adults. He found that the primary mechanism for learning is self-direction. That self-direction exists implies that adult learners have a previously established life-need. Tough specifically directed his research toward looking at people who choose to change in the context of planned, intentional change. He declared, "I have become convinced that we can all do much

more to encourage and help intentional changes if we understand the person's natural process of change" (p. 13).

The principal qualities that Tough found in people who experience intentional change are self-confidence, awareness of self, and determination. Self-confidence and awareness of self are the most critical to the nature of the change process, according to Tough. At the same time, these are the qualities most lacking in people who do not engage in intentional change.

The most important contribution from Tough's research is that people have within themselves a natural process of intentional change that is effective in creating beneficial change. Seventy percent of the interviewees chose on their own to plan and implement a change in their lives. Tough concluded that lasting, beneficial change occurs when people are responsible for choosing, planning, and implementing change. The choices that people make may be idiosyncratic and unpredictable, but Tough said that should not be surprising since the choice to change is a personal matter.

A major implication of Tough's findings is that it is very difficult to structure planned change. If the source of change is internal, descriptions of planned change in one situation will not necessarily be appropriate in another.

The learner as a value-creating being. Botkin et al. (1979) contrasted maintenance learning and innovative learning in community development settings. The focus of maintenance learning is on

acquiring knowledge and outlooks without corresponding changes that enable people to use the knowledge in their lives.

For example, a common practice in training community health workers is to teach them about the chain of disease. In one project, the health workers were trained to analyze the sources of disease and to recognize the sources in their environment. Yet despite knowing about the chain of disease, in their homes the health workers did not wash their hands before eating or build latrines to cut the chain of disease. Their learning may have benefited them intellectually, but what they learned did not have an effect on their health habits.

For Botkin et al., learning in development settings should do more than analyze problems and create solutions. Learning that makes a difference in people's lives should enable learners to call things into question and explore alternatives. Botkin et al. called this perspective on learning "innovative learning." Innovative learning goes beyond maintenance learning because it encourages people to reflect on their values and the relationship of values to changes needed in the conditions and structures that limit people's opportunities to grow and develop. Innovative learning emphasizes value creation as opposed to value conservation.

An implication of innovative learning is that there exists a quality of community response beyond that which can be manipulated by educational methods and strategies: "Neither participation itself nor the responsibilities and obligations inherent in it can be 'given' away" (Botkin et al., 1979, p. 30). Qualities that affect community

action are people's values. These qualities belong to the learners and affect people's response to educational interventions.

Focus on Methodology

A second cluster in the literature focuses on participatory methodology in adult learning. The concern for participatory methodology is represented by a worldwide network of people from diverse backgrounds who are bound by a commitment to involving learners in all phases, including research, of the educational and development process. Participatory education has brought to the forefront the concept that the best way to help people is to do things with people not for people.

Participation in learning. Kidd (1973) stressed that people learn best when they are involved as partners in designing and implementing learning experiences. Kidd presented an extensive review of learning theories in order to show how theory has evolved to the point of respecting the learner as a unique and autonomous being.

The point of Kidd's review of learning theories was to lay the groundwork for an analysis of the learning transaction. Because the nature of learners affects their growth and development, learners need to participate in designing educational experiences. Learners bring perceptions and experiences into the learning transaction that determine learning objectives and methods. The key for effective learning, according to Kidd, is involving learners in determining their needs, in developing the curriculum, in designing the learning situation, and in evaluating the learning experience.

Kidd laid a theoretical foundation for adult participation in learning. Srinivasan (1977) focused on functional methods for implementing participatory learning methods. Srinivasan offered three approaches to adult learning. One approach is problem centered. In the problem-centered approach, participatory methods are used to help people understand root causes of poverty for themselves. Participatory methods serve to develop people's critical consciousness. One of the principal learning techniques is the analysis of pictures and drawings.

A second participatory method is the use of projective approaches. In projective approaches, participatory methods are used to facilitate personal analysis of conflict and resolution. One of the principal learning techniques is the use of open-ended stories.

A third participatory method is the use of self-actualizing approaches. The use of self-actualizing approaches involves a free-flowing process of giving learners direct control of their learning experiences. The role of a teacher is one of a nondirective facilitator. Learners assume full responsibility for their own learning. In self-actualizing approaches, techniques are not as important as the process of self-direction.

Participation in research. The literature on participatory methodology has placed a strong emphasis on participation in educational research. Research on participation in education has usually referred to community members' contribution to needs assessment, from which learners begin the process of joint involvement in the learning and development process.

Callaway (1980) compiled case studies of participatory research for the purpose of making current the knowledge regarding participatory research in adult education. The case studies described in general terms the process of mobilization, organization, and planning in education and development projects. The findings generated from the case study reports focused on one general proposition, that participation results in people who are committed to following through with the education and development projects. The reports indicated that participation enhances cooperation among people for joint efforts, raises the level of consciousness regarding communal problems, and is an effective mechanism for defining people's needs.

The mechanisms used to facilitate participation vary widely from report to report. In some cases, participation refers to methods that elicit involvement of local people in the project of a home economist or a nutritionist. Participation at this level focuses on opinion gathering concerning issues important to home economists or nutritionists. In other cases participation is referred to as a strategy for mobilizing community members to work together in the creation and support of cooperatives or in working together in family gardens.

The case reports all warmly embraced the concept of participation without considering the level of participation being referred to, or considering the operational limitations of participatory interventions. Additionally, the compilation of reports did not offer any

insights into the conditions and circumstances that enhance or limit community participation.

A tendency existed in the case studies to confuse human-development principles and methods. Frequent mention was made of the "Freire method" as a means for realizing consciousness-raising goals. The fact that researchers used the "Freire method" certified the validity of the research process. Freire did not promote a method as much as a philosophy of human development. Freire's philosophy needs to be applied uniquely to each situation. "We tend to mold the needs to the methods rather than reconstruct our methods upon the needs of the participant learners" (O'Gorman, 1978, p. 54).

The issue of effective methodology is not essentially a matter of translating a philosophy of human development into methodological terms. The fundamental issue relates to the assumptions made about people's values and their view of reality (Goulet, 1976).

Conceptual limitations. The concept of participation is broad and has many different meanings. Cohen and Uphoff (1977) pointed out that in the participation literature there appears to be confusion between the causes and effects of participation. They also stated that there is little empirical basis for knowing about the factors that promote and inhibit participation.

Another consideration regarding operationalizing participatory methodology is that participation alone is not a sufficient condition for development. Participation is a process that facilitates community action; it needs to happen in conjunction with other factors.

Participation does not stand alone. For example, DeVries (1978) conducted a study on the effectiveness of participation in agricultural extension. He attempted to measure the success of a participatory approach against a top-down approach to extension. The participatory approach did elicit a greater degree of commitment on the part of farmers. However, the farmers' success was significantly influenced by factors beyond the control of the study, such as supply and market systems, village leadership, and the incentive structures for agricultural production. DeVries concluded that no single factor can influence people to act on what they know about development. Community members' action is the result of a mix of factors.

In development education there is an insufficient understanding of the characteristics of the way in which people participate. As yet, participation is such a broad concept and is used in so many different ways that it is difficult to make specific claims regarding its effect on development. Additionally, participation is an insufficient condition for development. The field of participatory education needs to know more about the specific factors of participation that facilitate the process of people acting on what they have learned (Cohen & Uphoff, 1977).

Focus on Social Structures

A third cluster in the literature on adult education focuses on the relationship of the learner to social structures. The cluster of literature focuses on the need to understand the nature of oppressive

social and economic structures and to learn how to change structural roots of poverty.

Educational structures. Illich (1970) proclaimed that formal educational institutions are a major source of oppression. Educational institutions are preoccupied with conformity in learning, which stifles the human spirit and leaves people in bondage. For example, the person who learns to memorize and follow the teacher's instructions will carry a dependent attitude throughout life. Illich claimed that the bondage of the human spirit is the principal outcome of formal education and a principal contributor to the suppression of the poor in the Third World.

The solution, for Illich, is not merely curriculum reform or training a new breed of teachers. Illich called for the overthrow and transformation of educational institutions. A completely new educational system needs to be created that enables learners to cope with and overcome problems in life. The new educational system also needs to generate knowledge out of the interactive processes between teacher and learners.

Political structures. Freire (1970) added greatly to the conceptual understanding of empowerment of oppressed people through an educational process. In particular, Freire showed how understanding the political process and the nature of oppression can be used as part of functional-literacy training.

According to Freire, a key concept in the learning process is praxis. Praxis describes an integrated process of action and

reflection that people go through in learning to define and solve their problems. Praxis is regarded as a key process in facilitating learning.

The result of the praxis process is critical consciousness. The power of critical consciousness will not only affect individuals but also will affect national structures. As people increase their capacity to dialogue with each other and with their world, they become "transitive" (Freire, 1973). Transitivity of consciousness refers to the power of people to collectively perceive and respond to problems and to enter into dialogue to attain authentic solutions. Critical transitivity is a characteristic of genuine democracies. Until such a state exists, people are not free to grow and reach the fullness of their nature. Freire (1973) stated that the crucial step for achieving the critical transitivity requires an "active, dialogical, educational program concerned with social and political responsibility, and prepared to avoid the danger of massification" (p. 19).

O'Gorman (1979) helped bring the understanding of praxis to a practical level by inquiring into the socio-kinetics of praxis. O'Gorman's study looked at three aspects of praxis: how people see their social condition, what values lead people to get involved in learning, and how actions and ideas are linked in a way that stimulates educational growth.

O'Gorman found that those people who did participate in praxis learning transactions came to value their own dignity, had a greater consciousness of the structural roots of poverty, and valued solidarity

and commitment. The study made a valuable contribution to understanding some of the qualities in people that lead to a positive response to educational interventions.

While the study shed light on the value of praxis in people's lives, it raised the question of the factors that differentiate those groups that do participate in praxis from those that do not. The study asked the question, Why do some people participate while others do not?

Summary

Three clusters of literature in adult education have contributed to understanding the nature of people as learners. Knowles (1980) pointed out that teaching adults in ways that they were taught as children is not effective. Knowles contributed to understanding how to help people learn by treating them as adults, not as children. His insights set the stage for the work of Cross and Tough on the nature of adults as learners.

Cross (1982) synthesized the research in the field of adult education. According to Cross, the new priority for adult education is understanding the learner as a person. An important direction has been established, yet much more needs to be known about how learner characteristics are operationalized in specific settings.

The most important contribution from Tough's (1982) research is the discovery that people have within themselves a natural process of intentional change. Comprehensive research on the characteristics of

adult learners now needs to be complemented by research on the nature of adult learners in specific areas of endeavors.

The literature on participatory methodology has shown how factors related to people's sense of partnership and ownership have an effect on people acting on their own behalf. More needs to be known about the influence of participatory methodologies on development. Participatory methodologies are used in so many different ways that a specific analysis of their effect is not yet possible (Cohen & Uphoff, 1977).

The literature that focused on social structures has shown how factors in the political process and the nature of oppression affect learning. Some insight has been gained on the qualities in people that lead to taking action, but not enough is known about the qualities that differentiate people who take action and those who do not (O'Gorman, 1979).

Health Education

One additional field has contributed to understanding factors associated with people taking action on what they have learned. The field is health education. The field of health education includes a special area called the adoption of preventive health behaviors. The area of preventive health behaviors refers to the dynamics of personal change that occur when people make behavioral changes in favor of wellness.

The research on the adoption of preventive health behaviors is grouped into four clusters. One cluster relates to psychological

factors that influence adoption of preventive health behaviors. A second cluster relates to sociological factors. A third cluster of research emerges from the application in health education of the diffusion-of-innovations change strategy. The fourth cluster relates to the application of community development and adult education principles in health prevention.

Psychological Factors

One cluster in the health education literature relates to the effect of psychological factors on the adoption of preventive health behaviors. Within the cluster are two major categories of factors. One category is called the Health Belief Model (HBM). The second is the Locus-of-Control Model.

Health Belief Model. The model was published by Hochbaum in 1958. Hochbaum was interested in knowing why some people would regularly obtain tuberculosis (TB) check-ups while others would not. Out of his research, Hochbaum proposed that the health-seeking behavior of TB check-ups was a function of four psychological factors:

1. Perceived susceptibility to a condition of ill health.
2. Perceived degree of severity of the condition.
3. Personal estimates of the benefits of a preventive action.
4. Personal estimates of the extent of physical and economic barriers to adopting a preventive behavior.

The Health Belief Model drew a great amount of attention from health educators in North America who were concerned with control of

heart disease, weight control, and hypertension. Many private clinics promoted the Health Belief Model in their advertising, and the United States Department of Health, Education and Welfare sponsored numerous studies that tested the applicability of the Health Belief Model in a wide area of health prevention issues.

The health education implications of the Health Belief Model are that people can be motivated to adopt preventive health behaviors by relating a health message to people's perceived susceptibility and perceived threat of a disease. The role of health education is to intensify people's perceptions of risk and then to link the risk with a change of behavior.

Early studies confirmed the validity of the Health Belief Model. However, the Health Belief Model appeared to be most applicable in cases where the ill-health condition was severe, such as with hypertension (Leventhal, Safer, & Panagis, 1983). Additional studies with the most confirming results related to behaviors of seeking health services, rather than changes in habits and lifestyle. The early studies on the effect of health beliefs were conducted in the context of people seeking health services in a clinic or hospital setting. For example, a study would be conducted in the context of a weight-loss program or a heart-attack recovery program. Thus, the act of going to a health service had the emotional and psychological support of an extensive support system.

Recognizing the above limitation, Lindsey-Reid (1981) studied the validity of the Health Belief Model in the context of a normal life

situation. She chose to study the relationship of perceived susceptibility and risk to health disease to the adoption of an exercise program among firefighters in a large metropolitan fire station. The researcher concluded that many competing beliefs affect the response of people to adoption of preventive behaviors. In daily-life situations a person is faced with a wide array of psychological, emotional, and social conditions so that it is difficult to identify any one set of psychological factors as being the key to adoption.

Locus of Control Model. A second category in the cluster of psychological factors is the locus-of-control research on adoption of preventive health behaviors. Locus-of-control is a concept of learning out of social learning theory. Lefcourt (1965) is one of the researchers identified with the locus-of-control concept. Essentially, the locus-of-control concept holds that behavior is a function of expectations about the effect of behavior on the behavior itself. If, for example, people believe (expect) that a particular behavior will result in a positive outcome, the locus-of-control is considered to be internal.

If, on the other hand, people believe that they have no control over the consequences of their behavior, the locus-of-control is external. In such a case, people attribute the outcome of personal actions to factors beyond their control, such as fate, chance, or powerful others.

Wallston and Wallston (1978) wrote extensively on the applicability of the locus-of-control concept to health education. The

major implication of the locus-of-control concept is that knowledge of a person's locus-of-control can direct the educator to the key of individual behavior. The educational tasks are to first identify the learner's locus-of-control. Second, the educator strengthens the associations between beliefs about the potential to control health and personal beliefs. Third, educators link beliefs concerning good health with preventive behaviors.

Early studies tended to confirm that internal locus-of-control was associated with adoption of preventive health behavior. However, as research methods improved, the predictive validity of the locus-of-control decreased. Even the Wallstons' research results became more inconclusive. While the locus-of-control seems to be a factor, recent research studies have concluded that the locus-of-control is only one factor in a set of complex, poorly understood factors.

Current status of the research. The relationship of psychological factors to the adoption of preventive health behaviors needs to take into account two major considerations. One is the recognition of the effect of the social environment on psychological factors. Psychological factors interact with the social environment in ways that are not yet fully understood (McAllister, 1981). A prime example is the influence of peer pressure among teenagers. McAllister raised the question, Can, and should, psychological factors be studied? Are there more productive and useful ways to understand the phenomenon of adoption of preventive health behaviors?

The models also assume that human beings are passive. People can be acted upon in ways that change their beliefs and behaviors. Leventhal (1983) pointed out that human beings are much more active and in control of their beliefs than previously thought.

The models also assume a direct relationship between attitudes/beliefs and behavior: By changing attitudes or beliefs, behavior will change. However, the literature on the relationship of attitudes and beliefs has not supported the above assumptions. Beliefs may change, but not behavior. No empirical relationship exists between beliefs and actions (Bostrom, 1983).

Even though no direct relationship exists between beliefs and behavior, there are at least two sources of influence on beliefs and action. One source of influence is the context in which beliefs are discussed and developed (Deutcher, 1973). To the degree that the context in which beliefs are expressed is similar to the context in which the beliefs are to be acted on, small correlations exist between beliefs and behavior.

A second source of influence on beliefs and actions is the social situation (Bostrom, 1983). In differing social contexts, people may act on beliefs in contrasting directions. The social situation brings out in people beliefs and attitudes that are often inconsistent with each other.

Social Factors

A second cluster of research on the adoption of preventive health behavior relates to the influence of the social environment on

health behavior. The research on social factors has tended to emerge out of empirical observations and insights from experience, rather than out of theoretical propositions. The social-indicator research findings have been much more specific than the research on psychological factors.

The research on social factors can be grouped into two categories. One category addresses interpersonal factors. A second category addresses social structure factors.

Interpersonal factors. Research on the influence of interpersonal factors conforms to the findings of research on interpersonal factors found in counseling, change-agent theory, and cross-cultural relations. Where an educator establishes emotionally supportive, empathetic relationships, the learner is more likely to adopt preventive health behaviors (Edima, 1981).

Another factor in the area of interpersonal relationships is the influence of "significant others" in the life of a learner. For example, Baranowski (1983) conducted a study to determine the sources of social support among different ethnic groups. Baranowski studied mothers' decisions to breastfeed. Baranowski confirmed that the decision to breastfeed was due, in part, to a "significant other" in the life of the mother. However, the social relationship of the "significant other" to the mother varied by ethnic groups. Consequently, educative efforts directed toward people who exercise social influence need to be tailored to the specific subculture.

Social structure factors. The second category in the social factor cluster is the influence of social structure on the adoption of preventive health behaviors. The predominant social structure factors identified in the literature are education, income, and access to health services. A fourth factor with less extensive attention in the literature is cohesive ethnic structures.

Numerous studies have confirmed that the higher the level of personal income, the more likelihood there is that people will adopt preventive health behaviors. However, the more pertinent factors are level of education and access to health services (Slesinger, 1980). In the study done among low-income urban dwellers, the mother's level of education was positively associated with child-health preventive actions. The higher the level of the mother's education, the more likely it was that the mother would adopt child-health preventive behaviors. In the same study, Slesinger found that access to health services was also a factor in adoption. Where mothers had ready access to health services, there were higher rates of adoption. Ladewig and McCann (1980) claimed that the factor of accessibility to health services and facilities is the most salient of all factors.

Current status of the research. What the studies on social structure have not identified are the conditions under which the social factors have an influence. Single social factors may have a determining influence when related to a noncomplex behavior such as breast-feeding. However, in reference to more complex factors such as educational levels, the research has not identified the conditions

surrounding educational levels that increase the likelihood of adoption (Slesinger, 1980). Additionally, access as defined by physical distance is not a descriptor of access. Conditions that are associated with access, such as the historical relationship between the population and the service providers, affect whether people readily use available services.

One productive direction for research on social structure is to inquire into the relationships of sets of social factors to change behavior. The natures of social conditions vary to such a degree that more needs to be understood about interrelationships of social factors with each other and the relationship of social structures to life circumstances of the potential adopters.

Diffusion Factors

A more limited cluster of factors relates to the effect of diffusion of innovations on adoption of health behaviors. The research on diffusion in health-behavior adoption centers on the work of Rogers. Rogers (1972) was challenged to study the applicability of the theory of diffusion of innovation to the health field. He accepted the challenge, but it should be noted that his studies were limited to the area of family planning.

The diffusion approach emphasized the study of the flow of a message that has been shaped to elicit a particular response from an individual. The fundamental assumption is that, to the degree that a message can be shaped to associate an innovation with people's life goals, the message will elicit a positive response. By demonstrating

how an innovation can make life better, people are then expected to respond in a rational manner. However, in Rogers's work on health behaviors, adoption was heavily influenced by financial incentives. Furthermore, financial incentives were only effective in the area of permanent prevention of conception (e.g., vasectomy), not in the area of use of nonpermanent contraceptives (Rogers, 1973).

Other studies using the diffusion approach have also found a limited scope of applicability. Ross (1981) studied the use of health services through a diffusion approach. She found that knowledge of services along with interpersonal contact and social networks were factors associated with use of health services. However, the behavioral change was limited to attendance at health services.

Current status of the research. Recent research on the effect of the diffusion approach has found that while people could be induced to adopt recommended behaviors, the adoption was short-lived (Hobbs, 1980). Follow-up studies of adoption found that social structure factors were more important in changed behavior than the nature of the innovation or the information about the innovation (Goss, 1979). Where social structure factors did not encourage the recommended behaviors, the behaviors did not continue.

Another limitation of the diffusion approach has been that it increases the gap between the social classes. People with more personal resources have benefited at the expense of people with fewer resources. The diffusion approach has tended to centralize decision

making and control in the hands of the people on the higher end of the economic scale (Hobbs, 1980).

Rogers (1983) made some major reassessments of the diffusion approach. He called for research that widens the scope of variables in order to study the interaction among personal and social variables in the adoption process. He admitted that diffusion research has concentrated too much on the characteristics of adopters. Research in adoption needs to concentrate more on social factors, such as social networks and system-level factors. Finally, Rogers recognized what many others have claimed: that the diffusion approach needs to be concerned with the consequences of the diffusion approach where the income gap widens between early adopters and later adopters.

Another aspect in the diffusion approach that needs to be considered is the moral implication of using descriptive data, whether personal or social, for the purpose of eliciting a particular response. The moral issue relates to contrasting philosophical positions. One position holds that development interventions should determine the nature of behavior and social change. A second position holds that cultural and social conditions should shape the nature of the development intervention.

The contrasting philosophical positions have direct implications on the nature of research. In the first position, the implication is that research should focus on making the interventions more effective in eliciting social change. In the second philosophical position, the implication is that research should focus on

understanding the cultural and social conditions of people in order to shape the intervention.

Development Factors

A fourth cluster of research relates to research conducted in the context of Third World community development. Most of the research is in the form of case studies demonstrating the effectiveness of adult education principles in adoption of preventive health behaviors. "Adult education" is generally referred to as an educational approach based on:

1. Reliance on the individual learner as a resource for learning.
2. Learning as a cooperative, evolutionary process.
3. Learners choosing to adopt behaviors from among a number of possible behaviors (Ross & Mico, 1980).

A fundamental tenet of the development approach is that people will be more responsive to action, such as preventive health care, when they have an opportunity to participate in decision making. The contrasting case is where people act because a health professional has recommended a preventive health behavior.

The approach to research in the development cluster has been to identify key principles of adult education and community development and to verify their validity and applicability. For example, in an extensive survey of primary health care projects, Fuererstein (1982) found that factors related to the training of health workers contributed to the success of the projects. The suitability of health worker

training to local health problems, the frequency of supervision, and the use of local resources are factors that affect success.

Tandon (1982) found that adult education principles were applicable to primary health care. In primary health care projects where the local people perceived themselves as having control over the health system, people were more likely to adopt preventive health behaviors.

Atucha and Crone (1982) tested the viability of a participatory methodology on adoption of preventive health behaviors. They found that using generative themes, reflection, discussion, and learner-proposed action contributed to changed health behaviors. However, a note of caution must be raised in that a key health behavior adopted by the local population was the use of contraceptives in a project sponsored by a pro-family-planning organization. The study did not refer to the possible extraneous factors that might have been generated by the purposes of the sponsoring agency.

Gwatkin, Wilcox, and Wray (1981) conducted an extensive study of the effect of health and nutrition interventions in ten projects around the world. The writers drew conclusions similar to those of other studies regarding the effect of health worker training variables, such as the appropriateness of training to local conditions, brevity of training, and supervision, which contribute to adoption of preventive health behaviors.

Gwatkin et al. also found that population differences affected the success of the interventions. The effectiveness of interventions

seemed to be affected by previous patterns of mortality and the existing level of concern for health. The researcher concluded that quantifiable factors of intervention did not tell the whole story of health improvement. They called for research more directly focused on the population factors that affect people's receptivity to health interventions.

Summary of Research on
Preventive Health Behaviors

Research on adoption of preventive health behaviors has identified a wide array of potential factors associated with preventive health behaviors. No one factor alone, or clusters of factors, generally explains the adoption of preventive behaviors. Research has shown that psychological, social, diffusion, and development factors influence health behavior in one way or another. However, the literature has recognized that ultimately interventions made on behalf of people are processed according to perceptions out of people's experience.

Thus far, research has focused on quantifiable variables that are under the control of outsiders. While these variables account for some of the differences, most research has been limited to deductive hypothesis testing (Mullens & Reynolds, 1978) and has focused only on the nature of effective interventions (Taylor, 1981).

Specifically, Rogers (1983) declared that research on individual characteristics has exhausted the possibilities for further research. What is known about people as adopters does not account for

all of the differences among people. He declared that future research should seek to understand group variables and variables associated with people's environment. The need is critical because large segments of the population in need are not being adequately helped.

A new direction being taken in health education research is to inquire into the nature of life circumstances and into people's perceptions of reality (Gwatkin et al., 1981; Taylor, 1981). Research needs to evolve toward explaining health behaviors in locally relevant terms (Leventhal, 1983; Mullen & Reynolds, 1978).

CHAPTER III

METHODOLOGY

The purpose of the study was to identify and describe factors that differentiate the communities that act on their own behalf from those that do not. To fulfill the purpose, the researcher inquired into the experiences and perceptions of six communities with varying percentages of members who practiced a specific preventive health behavior. The researcher identified and described factors that influenced community members to apply what they knew about preventive health behaviors. Subsequently, a comparative analysis of six communities was made to discover the factors that differentiated the communities where a higher percentage of people practiced a preventive behavior from those where a lower percentage of people practiced a preventive behavior. The context of the study was a traditional society in the Third World.

Much of the research on health education, and development education in general, has stressed the importance of participatory planning and interactive techniques (Callaway, 1980; Clark, 1981). A common problem in development education is that while people learn by using the best educational technique about what they can do, many do not necessarily take action on what they know.

A survey was conducted to up-date the health promoters' data on the percentage of adults who wash their hands before eating. The survey was conducted in the six research communities. Table 1 shows the results of the survey. A variation existed in the percentage of adults who washed their hands despite the fact that communities have benefited from the same mode of educational intervention and share the same cultural and socioeconomic characteristics.

Table 1.--Percentages of people who wash hands before eating.

Community	Percent Hand Washers
San Martin	58%
Castuj	50%
San Vicente	43%
Calancha	42%
Bishud	26%
Pilahuaicu	23%

The study took the approach of understanding the phenomenon of application of learning from the perspective of the local people as they described it. The study has described the practitioners' point of view in response to development education interventions.

Setting

The study was conducted in the context of an existing primary health care project begun under the auspices of a private voluntary organization in 1978. The project involved Quichua Indians in Chimborazo Province, Ecuador, South America.

Chimborazo is a highland province in the center of the Ecuadorian Andean mountain range. The population is 73% Quichua. The most densely populated Quichua areas are in a range of 9,000 to 13,000 feet above sea level.

The Quichua communities vary in size from 125 to 5,000 people. The average size of a Quichua community is 746 people (Primary Health Care Workers in Ecuador, 1983). The communities are situated in a central location surrounded by farmland. Most Quichua heads of households own farmland. The farms range in size from 0.5 hectares to 3 hectares. A few have farms up to 50 hectares, but the large farms are the exception.

All heads of households need to augment their income by performing seasonal labor in major urban areas and on coastal plantations. Cash flow is augmented by the women and children, who raise and sell cows, sheep, and guinea pigs.

Each community has a council that governs community political, judicial, and economic affairs. The council members are elected by the community at large. The Quichua communities have a long democratic tradition even though until 1979 Ecuador was governed by a succession of dictators.

Very little integration exists between the Quichua Indians and the Latin society. The Quichuas in Chimborazo Province live in separate communities and have only commercial dealings with the Latins. A mentality of "us against them" pervades their attitude toward the Latins. While the Quichuas exhibit some characteristics of modernity,

their isolation from the society at large has perpetuated the cultural and social differences between the two groups.

Project Setting

The primary health care project began in 1978. Before the project there were no health services in the Quichua communities. Less than 5% of the population in the project practiced preventive health behaviors, such as drinking potable water, washing hands before eating, daily personal hygiene, or using latrines (Primary Health Workers in Ecuador, 1983). The Ministry of Health occasionally attempted vaccination campaigns, but usually the vaccinators were run out of the villages. The reason that Quichua communities gave for inviting the private voluntary organization to initiate a health project was that people wanted medical care available in their communities.

From 1978 to 1981, the project began training 63 Health Promoters in 50 communities. In 1981 the Ministry of Health began its own primary health program. After that time the project staff worked with the Ministry of Health to integrate the previously trained promoters into the government program. Eventually 39 promoters became part of the government program.

The Health Promoters spend most of their time in health promotion and prevention activities. They organize the communities for vaccination and for prenatal care. Health classes are conducted on a weekly basis in schools, community, neighborhood, and religious meetings. The Health Promoters also make weekly home visits to personally

talk about issues of sanitation and hygiene. They also monitor maternal and child health on a monthly basis and distribute nutritional supplements through a government program.

Research Design

The study used a grounded-theory approach in conducting comparative analysis of six communities. The grounded-theory approach provides a way for conceptualization from descriptive data (Glasser & Strauss, 1967). The purpose of the grounded-theory approach is to generate theory out of experience. In the grounded-theory approach, researchers gather data without reference to any theoretical concepts. The data to be gathered are only determined by the purpose of the research. From the grounding in experience, the data are analyzed to create new theoretical constructs that provide new insights into a phenomenon.

The researcher asked five general questions about the application of a preventive health behavior. From the data, factors and categories were created that inductively described the community members' perspective regarding taking action on what they know.

Data Collection

The study used community forums for data gathering. The forums provided a setting for data gathering that the people were comfortable with and a setting that facilitated interaction among people. The familiar and interactive setting generated more

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substantive data than if people would have been interviewed in smaller groups at home or work.

Community members were invited to attend a community-wide meeting where people could express their points of view and hear the views of others. The forums were arranged by the Health Promoter. As an incentive to attract as many people as possible, a health film was shown before the data-gathering session. The film also helped to set the stage for reflection on preventive health behaviors.

Instrumentation. A modified nominal group technique was the instrument used for gathering the data. The technique allowed for exploration with the interview participants of the qualitative dimensions of the application of preventive health behaviors (Green, 1980; Van de Ven & Delbecq, 1972).

The nominal group technique is especially well suited for the grounded-theory approach. The nominal group process has proven to be a useful instrument for exploratory investigation before using more traditional measures (Van de Ven & Delbecq, 1972).

An additional benefit of using a group interview process is that the group interaction has an educational effect (Amirsaputra, 1979). In this study, the process of talking in a group about washing hands stimulated people to think more deeply about the importance of the act. Individuals gained a new perspective on the issues as they listened to other people's reasoning.

Interview procedure. The basic process used is as follows. First, people were asked a question in small groups. Second, people

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Interview procedure. The basic process used is as follows. First, people were asked a question in small groups. Second, people

were given an opportunity to ask for clarifications of the question, if needed. Third, people were asked to answer the question silently for themselves. Fourth, each person gave his or her answer. The group recorder carefully recorded each person's answer. Fifth, each person's answer was read aloud. People were given an opportunity again for discussion and clarification. The recorder did not change any responses based on this discussion. Last, the group selected the answer that was considered to be the most important.

The nominal group technique was modified in that a group recorder wrote each person's answer instead of each person writing his or her own answer. Additionally, discussion was encouraged before and during the process of generating answers.

The tendency for "group-think" in the modified process was balanced by each person having time to formulate his or her own answer (Van de Ven & Delbecq, 1972). Additionally, the group recorders made a point of repeating the question to each person before asking for an answer. The right of each person to make his or her own declaration was stressed throughout the process.

The advantage of the combination of an interactive and individual process was that the interaction stimulated people to think in greater depth than could have been achieved individually. The people in the project area are not accustomed to reflective thinking on their own. The more natural process for reflective thinking is done in groups.

Research Setting

It was decided to limit the focus by selecting one community development project for the inquiry rather than attempting a comprehensive analysis of a global setting. Within the project setting the researcher selected multiple sites. Selecting multiple sites increased the generalizability of the study (Herriott & Firestone, 1983).

Control of extraneous variables. The limited setting served to control extraneous variables that could create differences in the response of communities in the application of preventive health behaviors. Limiting the setting to a completely Quichua population controlled for the effect of cultural differences in response to development education.

Climatic variables did not influence the distribution of communities that take action since all the research communities are in the same geographical region. All the research communities are in the central mountain range of the Andes Mountains. Socioeconomic differences are also controlled since the population shares the same agrarian livelihood, and the range in farm size is narrow (0.5 to 3 hectares per farmer). Additionally, all the research communities have a road passable by truck or jeep and are no more than a 15-minute drive from a paved highway. Thus, access to market is similar for all the research communities.

The researcher was also able to control for the effects of differences in development-education strategy by limiting the inquiry

to one project. The issue of possible differences due to Health Promoter effectiveness is addressed in the next section.

Community selection. The research sample was selected on the basis of pre-established criteria rather than on a random basis. The criteria for selection of communities were as follows:

1. That there be a good working relationship between the promoter and the community.

2. That the promoter had been regularly conducting health education activities for at least the last three years, and that he had been making home visits during that time according to Ministry of Health requirements.

3. That there be evidence in the community of people adopting preventive health behaviors according to priorities established by the communities.

4. That the Health Promoter provide primary health care services to at least 75% of the community.

First the research staff consulted with the Ministry of Health supervisory staff to determine which of the 31 communities with Health Promoters had the potential for meeting the selection criteria. The supervisory staff indicated that ten of the communities met the criteria at that time.

Second, the research staff made a reconnaissance visit to the ten communities to make an on-site assessment of the communities' qualifications under the criteria. In the visit, the staff met with the Health Promoter and the elected leaders. During the visit a few

curious people gathered around, so a group of 7 to 15 people was involved in the informal conversations. The research staff positioned themselves so that one staff member would eventually converse with one part of the group while the other conversed with the other part. This way at least one group of informants could express their views without the constraint of the Health Promoter being present.

During the reconnaissance visit, the research staff gathered information concerning the community's qualifications under the selection criteria and on the adoption of preventive health behaviors. Health Promoter records were checked to obtain data on the number of people who were practicing the five priority preventive behaviors in the community. The promoters kept records that were checked monthly by the Ministry of Health supervisors. The data from promoter records were one of the sources used for establishing the percentage of people who practiced the preventive health behavior to be analyzed in the interview process. The staff also asked about health behaviors most talked about in health-education efforts and about health behaviors most commonly practiced by community members.

Third, the research staff assessed the information gathered during the reconnaissance visits. Staff compared notes on the qualification of the communities under the selection criteria. Out of the ten communities visited, seven met the selection criteria. Six of the communities that best matched the control variable of socioeconomic status were selected as the research population. The seventh community was selected as the site for testing the data-gathering procedure. The

research staff also compared observations on the status of the practice of preventive health behaviors. Through the shared observations, the staff began to acquire a feel for the phenomenon of people acting on their knowledge of preventive health behaviors.

Sampling frame. The research staff decided between two options in selecting the sampling frame. One option was randomly to select interview participants and invite them to group interview sessions. The other option was to leave the invitation open to all who were able to participate. The research staff decided that selective invitations to group interviews would create too much suspicion about the purpose of the research and in some communities might create resentment toward the Health Promoter and the program.

To control for potential population distortions from open invitations, the research staff offered an incentive that would encourage attendance from a large percentage of the adult population. A high attendance would approximate a normal distribution of the community's population. The incentive was to show a movie before the data-gathering process. Table 2 shows a comparison of the percentage of interview participants to the adult population of each community.

Table 2.--Sample frame compared to total population.

Community	Adult Attendance	Adult Population	Percent Attendance
San Martin	43	105	41%
Castuj	93	300	31%
San Vicente	39	100	39%
Calancha	50	190	26%
Bishud	103	220	47%
Pilahuaicu	56	130	43%

Data-Gathering Procedure

1. The research staff met with the Health Promoters from the seven communities selected for the interviews. Together the research design was reviewed and input on the design was made by the promoters. The research staff made it clear to the promoters that they were not being evaluated. Rather, the researcher was inquiring into the difference among community members.

2. The research staff and Health Promoters selected the preventive health behavior to be analyzed in the interviews. The promoters shared their data on the number of people who practiced preventive health behaviors. (For a complete list of the preventive health behaviors listed by the promoters, see Appendix A.) The behaviors commonly practiced in all the communities were pooled as potential behaviors to be studied. (See Table 3.) It was proposed that two or three behaviors be selected. The promoters recommended that only one behavior be studied. More than one behavior would complicate the reflective process and would make the research process unwieldy.

Studying only one behavior would also help to focus the interactive process.

Table 3.--Pool of preventive health behaviors used for selection of dependent variable.

Behaviors
Vaccinations
Latrines
Washing hands before eating
Boiling drinking water
Personal hygiene
Separate animals from living quarters

Finally, the Health Promoters and the research staff established a set of criteria for selecting the most viable preventive behavior. The criteria that were used are the following:

1. A preventive behavior that does not require a large economic investment.
2. A preventive behavior that is simple to operationalize.
3. A preventive behavior that people in all the communities are interested in applying; that does not have cultural or social impediments.
4. A preventive behavior that has been a subject of health education efforts for at least the least two years.

Washing hands before eating was selected as the preventive health behavior that best fit the selection criteria.

3. The researchers and the Health Promoters planned a survey for verifying the percentage of adults who washed their hands before eating. Twenty homes were randomly selected in each community for the survey. Together the group decided that the following indicators would best verify the behavior of washing hands: (a) statement from the adults whether they wash before eating, (b) the presence of a wash basin and soap in the home, (c) a wash basin with water in it or at least damp, and (d) both husband's and wife's hands clean.

The adults in the household were counted as washing before eating only if all of the above criteria were met. The promoters were also interested in making current their information on the percentage of people who used latrines. Thus the survey instrument included questions on latrine usage. (See Appendix D for a sample of the survey instrument.)

4. The research staff and Health Promoters together developed the questions to be asked in the interview process. Initially, the questions proposed by the principal researcher were too abstract and did not have meaningful sequence. The promoters came up with a series of questions that were best suited for the mindset of the Quichuas and that would yield information that they were interested in obtaining. The interview questions, translated from Quichua, were as follows:

- Why did you decide to wash your hands before eating?
- But why?
- What things have leaders <u>done</u> that have influenced you to wash your hands before eating?

- What customs or traditions do you have that have influenced you to wash your hands before eating?
- What obstacles are there to washing your hands before eating?

5. The Health Promoters and the research staff set up a schedule for holding community forums. The promoters recommended that the best time for holding the forums would be after 5:00 p.m. The forums were scheduled one per day.

6. The research staff created a preliminary interview protocol for a field test in Cebollar Alto, the seventh community selected. The protocol outlined an orderly, detailed procedure for creating small groups and for interaction among groups. The protocol also divided the interview participants into groups of those who regularly washed their hands before eating and those who did not. (See Appendix C for a copy of the preliminary interview protocol.)

7. The research staff field tested the data-gathering procedure. During the process of field testing the procedure, the research staff made modifications in progress as the situation warranted. The guiding criterion for modification was that the procedure facilitate full expression in response to the questions in a context where the interview participants were in control of the situation.

The fundamental change that occurred in the data-gathering procedure was reorienting the data-gathering procedure from one that was tightly controlled by the research staff for the purpose of gathering information, to a procedure that facilitated an educational experience. Early on in the field trial it became apparent that a highly

structured procedure would stifle the environment for the reflective thinking needed in the interviews. People came with their own agenda and were accustomed to following it despite the purpose of any meeting. Mothers also came with their children and infants, which militated against a procedure controlled by research staff.

8. The research staff revised the data-gathering procedure. The staff met to incorporate the insights from the field test into a new interview protocol. One major issue that the staff had to resolve was who would be used as small-group interviewer/recorders. The options were to use a team of skilled Quichuas who would accompany the research staff to every community, or to train volunteers in each community. The research staff decided to train volunteers in each community. Interview participants would feel freer to express themselves if friends from their own community would facilitate the interview process. In the Quichua communities people distrust outsiders who are not known to the community leaders. As a result of revising the interview protocol, the process was sufficiently straightforward that volunteer interviewers could be realistically trained in each community. A final advantage was that the research experience would leave a trained resource in each community.

The research staff did decide to include on the research team four trained Quichuas who would supervise the volunteer interviewers and help facilitate the group interview process. In some communities there were up to 15 small groups to supervise.

9. The research team arrived at each community at 4:00 p.m. Community leaders and the Health Promoters received the team. The site for the forums was selected, usually the school building. The room was arranged for small groups, and the movie equipment was set up. The Health Promoter and community president recruited volunteer interviewers who could read and write.

10. The research staff trained the volunteer interviewers. In most cases the interviewers were people under age 30. Enough were recruited so that small groups of five to ten people could be formed. The research staff walked through the interview process with the volunteers. The volunteers were asked the interview questions just as the interview participants would be asked. During the process the volunteers also practiced interviewing each other and were coached in basic interview techniques. The training process took about one and one-half hours.

11. People were interviewed in community forums. The forums began soon after dark. The sessions began with the projection of a film on health. The film set people's minds to thinking about preventive health behaviors. After the film, the forum facilitator (the Quichua doctor on the research staff) briefly discussed the film's contents with those present. The discussion then was directed toward the interview participants' experiences in practicing preventive behaviors in general and washing hands before eating in particular. After a few minutes of discussion, the forum facilitator introduced the

interview process. (For a sample of the interview protocol, see Appendix F.)

The interview participants divided themselves into small groups. Usually the men and women divided themselves into separate groups. Whole families, of course, came for the film showing, so the children were grouped separately and asked the interview questions also. However, the interaction with the children was done in a more conversational style. Too many children were present to record the statements of each one.

The research team members helped the volunteer interviewers get ready for the interviews. Small-group participants sat in a circle on benches or on the floor. The interviewer again explained the process to the group and answered questions. When the groups were ready, the interviewer was given an 8" x 10" card with the first question written across the top. (See Appendix G.) The interviewer read the question to the group and made sure everyone understood the question. At this point there was usually a lively discussion as people made sure they understood the question. The interviewer then followed this process:

1. Personal reflection so that each person could think of her or his answer.
2. Each person gave his or her answer out loud.
3. The interviewer read all the answers and asked the group for clarifications.

4. The group then chose the answer that they decided was the most important.

People benefited from the stimulation of hearing each other's answers. The interviewers, however, were careful to repeat the question to each person. The dynamic of repeating the question helped to insure that the answer was the person's own answer. In no instance did the whole group give the same answer. The same answer was never repeated consecutively more than four times. The same pattern of people repeating a person's answer was never repeated in subsequent questions.

The interviewer recorded each person's answer to a question on the same 8" x 10" Recording Form. When the group was done with one question, the interviewer would turn in the 8" x 10" Recording Form and received another with the next question. In this way the small groups worked through the five interview questions. The small-group interviews took from one and one-half to two hours. At the end of the interview process, the research team served the interview participants coffee and rolls.

Data-Analysis Procedure

The data-analysis procedure had two major components. The first component was to sort, count, and categorize the data. The second component was to do statistical analyses. Comparisons were made among the factors based on percentages. Subsequently, a chi-square analysis was made to determine the significant differences among the factors.

Data Sorting

1. The interview responses were translated from Quichua to Spanish. The data were initially recorded by the community recorders on lined 8" x 10" cards. The translations were then checked to insure the accuracy of the translations and to insure that no statements in Chichua were inadvertently not translated.

2. The data were summarized using an "Actor/Action" format. The actor portion refers to the person identified in the respondents' statements, such as the promoter, mayor, doctor, or themselves. The action portion refers to the action taken by the actor. Thus an "Actor/Action" summary contained statements like the following:

Actor	Action
The promoter	gave health classes
I	decided on my own
The doctor	told us we should
The community	work bee
When we	go to market
I	am too busy

The summaries were recorded on 3" x 5" cards, one statement per card. Included with the summaries was a number representing the number of people in each community who made the same response. The summary statements on the 3" x 5" cards were grouped by community. The statements in each group were also subdivided according to the five interview questions.

3. The responses to each question were sorted for each community. The 3" x 5" cards were sorted according to responses that seemed to be related. The data were sorted into a wide variety of piles. At

this stage of the process no attempt was made to create clear distinctions in the way the 3" x 5" cards were sorted. The data were only sorted according to the similarity of the statements on the cards to each other. For example, statements like "the promoter gave health classes" and "the promoter taught in meetings" were grouped together. In contrast, a statement like "the promoter visited my home" was placed in another pile.

The purpose of the third step was to obtain a feel for the data and to make preliminary observations about ways in which the data could be grouped into factors. The preliminary sorts from each community were recorded on 4" x 6" cards. At this stage of the process, no attempt was made to group the statements into specific factors.

4. All the summary statements on the 3" x 5" cards were mixed together--all the responses to Question 1 together in one pile, the responses to Question 2 all together, and so forth. Then for each question the statements on the 3" x 5" cards were sorted into groups according to those that seemed to be related.

5. The reasons for grouping the statements were written down and then reduced into concise and mutually exclusive statements that could serve as factors. As the statements of factors emerged, some re-sorting was necessary in order to maintain the exclusivity of the factors. Step five was independently repeated by a Quichua research assistant to increase the reliability of the process of creating the factors. Differences in the way the statements on the 3" x 5" cards were sorted under the factors were resolved. A final sorting of the

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respondents' statements was done. The respondents' statements were finally sorted into factors by mutual agreement.

6. The factors were organized under each question into categories. On the basis of the categories created, some of the factors were again refined to provide a consistent conceptual framework.

The actor/action framework for organizing the interview participants' statements resulted in the creation of two categories in each of the first two questions. The questions on leaders, customs, and obstacles yielded only one category of factors for each. (See Appendix H for a listing of categories, factors, and frequencies.)

Thus the process of creating factors and categories went as follows:

- Organize statements into an actor/action framework.
- Sort statements once for familiarity's sake.
- Re-sort statements in order to create preliminary factors.
- Create categories out of the factors and re-define the factors according to the categories.

7. The communities were paired into three groups on the basis of having similar percentages of people who washed their hands before eating. The pairing of the communities created three groups of communities with differing percentages of people who washed. The groups with differential application of learning then provided the population base for inquiring into the factors that differentiated the groups of communities. The pairing of communities was as follows:

Group 1: San Martin--58% of adult population washed
Castuj--50% of adult population washed

Group 2: San Vicente--43% of adult population washed
Calancha--42% of adult population washed

Group 3: Bishud--26% of adult population washed
Pilahuaicu--23% of adult population washed

Statistical Analysis

Two statistical-analysis procedures were used in the data analysis. Frequency counts were used to obtain an initial reading of the factors. Subsequently, significant differences among factors were found by using a chi-square analysis.

Frequency counts. First, the frequency counts of each community's response to each factor were organized in table form. Then percentages were calculated for each frequency count. (See Appendix I.) The percentages permitted the researcher to conduct a preliminary comparison of the differential response of the communities to the various factors. The comparison of percentages between the three groups gave indications of which factors had the potential of describing the important differences. The process of making the preliminary comparisons based on percentages gave the researcher another opportunity to gain insights into the data.

The analysis based on percentages permitted the researcher to re-sort the data and redefine some of the factors. The process of redefinition took two directions. First, in some cases data were extracted from one factor in order to create two factors. The second direction taken was to combine related factors in order to create a

single factor. In no instance were data used more than once in each category. Where new factors were created, the frequencies were subtracted from existing factors.

The purpose of the re-sorting and redefinition process was to create the categories that had the greatest potential for describing the differences that existed among the three groups of communities.

Chi-square. The second statistical tool used in the study was the chi-square. The chi-square was used to determine whether differences in proportion between two or more groups were due to random error or to differences between the groups. The chi-square can be used to test "the significance of a difference between two sample proportions" (Klugh, 1970, p. 154).

Additionally, the chi-square was used because the data were nonparametric (Terrance & Parker, 1971). The number of responses to each question varied because of natural distractions during the group interviews. For example, a mother would have to turn away to feed her baby, or a man might leave the room to break up a dog fight.

The chi-square was used in two ways. First, the chi-square was used to determine the significance of the difference between groups of factors in each category. Second, the chi-square was used to determine the significance of the difference between the proportion of responses to a single factor and a hypothesized proportion of equal responses to the factor. The hypothesized proportion was determined by the formula: total number of frequencies divided by the number of groups being tested. This test determined whether a difference existed

between community groups one, two, and three in response to a particular factor.

An alpha level of .10 was used to determine the level of significant difference. The .10 level was used because of the exploratory nature of the study.

Delimitations and Limitations

The research design contained some delimitations. Additionally, some limitations were inherent in the design.

Delimitations

The researcher chose an interview setting where people were free to move about and interact with each other instead of a controlled setting. The free setting made the process difficult to manage. Additionally, the reliability of the responses was diminished because of interaction effects. The validity of the responses in such a setting was affected by distractions inherent in a free-flowing environment.

The researcher chose voluntary participation of the interview participants instead of a controlled sample selection. The voluntary participation opened the study to contamination by self-selection. Additionally, the reliability of the participants' responses was affected by self-selection. In some communities the interview participants could have been mostly hand washers, whereas in others only a small percentage of participants could have been hand washers.

The researcher chose to use minimally trained volunteer interviewers instead of paid and more highly skilled interviewers. The

volunteer interviewers were not as skilled at probing and obtaining precise answers. In this situation, however, the volunteers took their responsibility seriously. Serving as an interviewer was considered an honor.

The researcher chose to encourage interaction among individuals during the interview process. Thus the validity of individual responses was affected by the possibility of influence from a significant other person.

Limitations

The effectiveness of the nominal group technique is limited when used among illiterate or barely literate people. Participants' concentration is diminished when time is taken for a recorder to write each person's answer. The benefits of the intensity inherent in the nominal group technique are lost. The process is also much more tine consuming when group members' responses are written one by one.

In the nominal group technique, the depth of response inherent in the prioritizing process is lost with illiterate people. The process was too abstract to be meaningful. Thus individuals' interaction with the questions was not as in-depth as might be desirable in an exploratory study.

The criteria for selection of communities for the research did not necessarily control for all the differences in the mode of intervention. A small difference still exists in Health Promoter effectiveness. The researcher could not completely control for differences among promoters and primary health care staff in the use of educational

techniques. A Spearman rank order correlation was done between a ranking of Health Promoters based on the quality of their work and a ranking of the communities based on the percentage of people in each who washed their hands before eating. A correlation coefficient of .49 existed between the two rankings. (See Table 4.)

Table 4.--Spearman rank order comparison of community and promoter rankings.

Community	Community Rank	Promoter Rank
San Martin	1	4
Castuj	2	2
San Vicente	3	1
Calancha	4	5
Bishud	5	3
Pilahuaicu	6	6

rs = .49

Group interviews are affected by group-think. Group-think refers to the tendency in groups to suppress individual differences and to work toward a consensus. People in the Quichua society have a tendency to go along with the leader when actions do not affect personal well-being. The possibility exists that individual answers were more influenced by what other people said than by the individual's judgment. Even though responses were not copied, what another person said may have unduly affected the direction of an individual's response.

Methodological Assumptions

The methodology used in the study was based on the following assumptions:

1. The researcher assumed that the inquiry process was able to get at some of the fundamental factors that differentiate communities' response to the application of preventive health behaviors. The researcher assumed that people were sufficiently challenged that they were enabled to make substantive statements.

2. The researcher assumed that the insights gained in the inquiry process were those that made a difference in development educators' understanding of the factors that differentiate communities.

3. The researcher assumed that the benefits that accrued from adapting the inquiry process to the situation overrode the contamination incurred in the adaptations made. In particular, the researcher assumed that the large number of interview participants per community provided a representation of the normal distribution of views throughout the whole community.

CHAPTER IV

FINDINGS

The findings are organized according to the six categories of responses developed in the data-sorting process. In each category a number of factors are analyzed in order to determine the factors that differentiate those communities where people take action from those that do not. An alpha level of .10 was used to determine the level of significant difference.

Learning Settings

The Learning Settings category refers to the context in which the respondents decided to wash their hands. The factors defined in this category emerged from community members' responses to the first interview question: "Why did you decide to wash your hands before eating?" The group of factors in the Learning Settings category refers to the action portion of the "Actor/Action" analytical framework used in constructing the summary statements.

The following factors were grouped together to form the category of Learning Settings:

- Structured learning
- Informal exchange
- Example of others
- Response to media
- Self-taught setting

By structured learning the investigator refers to formal, planned learning settings where people learn from a teacher. The setting is structured similarly to that of a formal education setting.

By informal exchange the researcher refers to settings in which a person visits a home or gives a personal demonstration of how to set up a "hand-washing place" in the home. The setting is one where there is an informal exchange between the teacher and the learner.

By example of others the researcher refers to a setting where people learn by watching others. Interview respondents stated that they had decided to wash their hands because they saw the Health Promoter or the community president do so.

By response to media the researcher refers to a setting where people learn by listening to the radio or watching a film. Having heard on the radio was a common response in the media setting.

By self-taught settings the researcher refers to settings where people decided on their own to wash their hands with no identifiable contact with another person or setting. (Refer to Appendix H for a list of the statements under each factor.)

Analysis of Question 1

The table of percentages shows that the factors most frequently referred to were structured learning and self-taught settings. (See Table 5.) In the communities in group 1 the highest percentage of responses related to the factor of structured learning, 42%. The second highest percentage of responses referred to the factor of self-taught settings, 32%. Thus in the communities where a higher

percentage of people washed their hands, the interview participants identified the most with structured learning settings and self-taught settings.

Table 5.--Percentages of responses to Learning Settings: Response to Question 1.

Factor	Group 1	Group 2	Group 3
Structured learning	42%	38%	20%
Self-taught settings	32%	13%	46%
Media	10%	19%	15%
Example of others	12%	12%	12%
Informal exchange	5%	18%	17%

In the communities in group 2, the highest percentage of responses also related to the factor of structured learning settings, 38%. The percentages of responses to the other factors were lower, ranging from 12% to 19%. (See Table 5.)

In the communities in group 3, the highest percentage of responses related to the factor of self-taught settings, 46%. (See Table 5.) The second highest percentage of responses referred to the factor of structured learning. The two principal factors in the category of Learning Settings were the factors of structured learning and self-taught settings.

Chi-square analysis. In response to the question "Why did you decide to wash your hands before eating?" the most frequent response in communities where a higher percentage of people washed their hands was

in reference to having heard someone (most frequently the promoter) in a structured learning setting. As shown in Table 6, a significant difference existed between the three groups of communities in reference to identifying structured learning settings: chi-square = 4.69, df = 2, $p < .10$. In group 1 communities, few people identified informal exchange settings, the example of others, or having responded to mass-media learning settings. A somewhat higher percentage of people identified self-taught settings.

Table 6.--Response to structured learning settings.

Factor		Group 1	Group 2	Group 3	
Structured learning	Observed	55	29	33	117
	Expected	39	39	39	117
		94	68	72	234

Chi-square = 4.69, $p < .10$

In contrast, in those communities where a lower percentage of people washed their hands, the most frequent response was in reference to self-taught settings. On the basis of a chi-square analysis (see Table 7) within the self-taught factor, a significant difference existed between the three groups of communities: chi-square = 28.46, df = 2, $p < .10$. Where the factor of self-taught settings was identified most frequently, people did not readily take action.

Table 7.--Response to the self-taught factor.

Factor		Group 1	Group 2	Group 3	
Self-taught	Observed	41	10	74	125
	Expected	41.7	41.7	41.7	125
		82.7	51.7	115.7	250

Chi-square = 28.46, $p < .10$

Among the communities where a lower percentage of people washed their hands, few people identified settings of informal exchange, the example of others, and media sources. The factor that was identified most frequently after the self-taught factor was structured learning settings. When comparing the factors of structured learning and self-taught (see Table 8), a significant difference existed between the two factors: chi-square = 26.77, df = 2, $p < .10$.

Table 8.--Structured learning compared to self-taught.

Factor		Group 1	Group 2	Group 3	
Structured learning	Observed	55	29	33	117
	Expected	43.6	19.3	54.1	
Self-taught	Observed	41	10	74	125
	Expected	44.4	19.7	49.9	
		96	39	107	242

Chi-square = 26.77, $p < .10$

Summary of findings.

1. In group 1 and 2 communities, the interview participants were more likely to identify structured learning settings. In group 3 communities, the interview participants were more likely to identify self-taught settings.

2. The data did indicate that there was a progressive shift from self-taught settings to an identification of structured learning settings where people related as a group. The percentage of people who identified structured learning settings progressively increased from group 3 communities, where the lowest percentage of people washed their hands, to group 1 communities, where the highest percentage of people washed their hands.

Analysis of Question 2

The second interview question probed people's response to the question of why they decided to wash their hands. Table 9 shows that in group 1 there was a shift toward identifying the informal exchange factor: from 5% in the first question to 44% in the second question. The increase in identification of this factor resulted in a significant difference between group 1 communities and the other communities in reference to the informal exchange factor.

In the group 1 communities, the percentage of interview participants who identified the structured learning factor was similar to the percentage of responses in the first question. The percentage of people who identified self-taught and media factors decreased. (See Table 9.) Thus, when probed, in communities where a higher percentage

Table 9.--Comparison of percentages of responses to Learning Settings: Response to Questions 1 and 2.

Factor	Group 1		Group 2		Group 3	
	Response to Question 1	Response to Question 2	Response to Question 1	Response to Question 2	Response to Question 1	Response to Question 2
Structured learning	42%	41%	38%	61%	20%	32%
Self-taught settings	32%	7%	13%	12%	46%	6%
Informal exchange	5%	44%	18%	15%	7%	22%
Media	10%	2%	19%	8%	15%	32%
Example of others	12%	1%	12%	0	12%	8%

of people washed their hands, the interview participants concentrated their responses in relation to the factors of structured learning settings and informal exchange settings.

In group 2 and 3 communities, there was a shift from identifying the self-taught factor to identifying structured learning settings. The increase toward this factor in groups 2 and 3, while the percentage of responses in group 1 remained essentially the same, resulted in there being no significant difference between the groups of communities in reference to the structured learning factor: chi-square = 0.67, df = 2, $p > .10$. (See Table 10.)

Table 10.--Response to structured learning settings.

Factor		Group 1	Group 2	Group 3	
Structured learning	Observed	54	51	43	148
	Expected	49.3	49.3	49.3	148
		103.3	100.3	92.3	296

Chi-square = 0.67, $p > .10$

While the percentages increased in reference to the structured learning factor, the number of people who identified the self-taught factor decreased. The decrease was such that there was no significant difference in the identification of this factor between the communities: chi-square = 0.11, df = 2, $p > .10$. (See Table 11.)

Table 11.--Response to self-taught settings.

Factor		Group 1	Group 2	Group 3	
Self-taught	Observed	9	10	8	27
	Expected	9	9	9	27
		18	19	17	54

Chi-square = 0.11, $p > .10$

In reference to the identification of the informal exchange factor, there was a small increase in the number of people who identified this factor. However, the increase was not proportional to the increase in group 1. Thus a significant difference existed between the three groups of communities in their response to the informal exchange factor: chi-square = 15.81, df = 2, $p < .10$. (See Table 12.)

Table 12.--Response to informal exchange settings.

Factor		Group 1	Group 2	Group 3	
Informal exchange	Observed	58	13	30	101
	Expected	33.6	33.6	33.6	101
		91.6	49.6	63.6	202

Chi-square = 15.81, $p < .10$

In the second "Why . . . ?" question the significant difference between the three groups of communities was between the response to the

structured learning settings and the informal exchange settings. A significant difference existed when the two factors were compared: chi-square = 16.75, df = 2, $p < .10$. (See Table 13.) On the other hand, whereas a difference existed in response to the first question between structured teaching and self-taught, none existed in response to the second question: chi-square = 0.11, df = 2, $p > .10$. (See Table 14.)

Table 13.--Structured learning compared to informal exchange settings.

Factor		Group 1	Group 2	Group 3	
Structured learning	Observed	54	51	43	148
	Expected	66.6	38.0	43.4	
Informal exchange	Observed	58	13	30	101
	Expected	45.4	26.0	29.6	
		112	64	73	249

Chi-square = 16.75, $p < .10$

Table 14.--Structured learning compared to self-taught settings.

Factor		Group 1	Group 2	Group 3	
Structured learning	Observed	54	51	43	148
	Expected	53.0	52.1	42.9	
Self-taught	Observed	9	10	8	27
	Expected	10.0	9.9	8.1	
		63	61	51	175

Chi-square = 0.11, $p > .10$

Thus Table 13 shows that the informal exchange factor differentiated communities where people readily applied from those communities where people did not readily apply.

Summary of findings. The data from the first two "Why . . . ?" questions indicated that in reference to the category of Learning Settings three factors differentiated the three groups of communities: (a) the identification of informal exchange learning settings, (b) the identification of structured learning settings, and (c) the identification of settings where people were self-taught.

Additionally, the differential response to the above factors suggested that a pattern existed in the community responses. As the percentage of people who washed their hands before eating shifted from community to community, the response of the interview participants shifted from self-taught settings, to structured learning settings, to informal exchange settings.

Source of Authority

A second category developed in reference to the question "Why did you decide to wash your hands before eating?" was the category of Source of Authority. Source of Authority as a category emerged from the actor portion of the "Actor/Action" analytical framework used in constructing the participants' response summaries.

Source of Authority as a category refers to the identification of a person, a significant other or self, who influenced the action. While the preceding category analyzed the "Action," such as informal exchanges, this category analyzes the "Actor" in that action. For

example, in home visits the category of Source of Authority analyzed the person who made the home visit--whether the promoter, a supervising nurse, or a local leader. Three factor emerged from the data-sorting process:

. Earned authority
. Ascribed authority
. Personal authority

By earned authority, the researcher refers to people from within the community who have earned a position of leadership. They have earned their position by being elected or named by the community as a health promoter, political leader, church leader, or literacy teacher.

By ascribed authority, the researcher refers to people from outside the community who are recognized as authorities by the fact of having a title (such as M.D.) and being assigned to working with the community. They have not related within the community to the extent of the community having chosen them to occupy a position of authority.

By personal authority, the researcher refers to responses in which people claimed that they washed their hands because of their own decision to do so. They identified themselves as the source of authority, as opposed to deciding because someone else told them that it was a good idea. (Refer to Appendix H for a list of the statements under each factor.)

Analysis of Question 1

A chi-square analysis (see Table 15) showed that there was a significant difference between the three groups of communities in reference to the three factors: chi-square = 38.20, df = 4, $p < .10$.

Table 15.--Comparison of Source of Authority factors.

Factor		Group 1	Group 2	Group 3	
Earned authority	Observed	55	33	37	124
	Expected	43.8	25.9	54.3	
Ascribed authority	Observed	21	34	44	98
	Expected	34.6	20.5	42.9	
Personal authority	Observed	54	12	80	146
	Expected	51.6	30.5	63.9	
		130	77	161	368

Chi-square = 38.20, $p < .10$

An analysis of percentages in Table 16 pointed out where the differences existed. In the group 1 and 2 communities, the highest percentage of responses related to earned sources of authority, 42%. In the group 3 communities, only 23% of the respondents identified the factor of earned authority. In contrast, the highest percentage of responses in group 3 referred to the factor of personal authority, 50%. (See Table 16.) In the communities in groups 1 and 2, a lower percentage of respondents identified the personality authority factor.

Table 16.--Percentage of responses to Sources of Authority: Response to Question 1.

Factor	Group 1	Group 2	Group 3
Earned authority	42%	42%	23%
Ascribed authority	16%	43%	27%
Personal authority	41%	16%	50%

As shown in Table 17, a chi-square analysis within the factor of earned authority showed a significant difference between the proportion of responses to this factor: chi-square = 7.09, df = 2, $p < .10$.

Table 17.--Response to earned authority.

Factor		Group 1	Group 2	Group 3	
Earned authority	Observed	55	32	37	124
	Expected	41.3	41.3	41.3	124
		96.3	73.3	78.3	248

Chi-square = 7.09, $p < .10$

Observation of the raw scores showed that the score from group 1 was above the expected score, whereas the raw scores from groups 2 and 3 were below the expected score. Thus the significant difference was most likely due to group 1. The respondents in group 1 communities were more likely to identify an elected promoter, community council

member, or literacy teacher as their source of authority than someone with ascribed authority or because of personal authority. The fact that the person with a position of earned authority said that people should wash their hands before eating was reason enough to do so.

In the group 2 and 3 communities the respondents were more likely to identify factors of personal authority and ascribed authority. In group 2 communities the highest percentage of respondents identified ascribed sources of authority, 43%. In group 3 communities the highest percentage of respondents identified personal sources of authority, 50%. (See Table 16.)

A chi-square analysis (see Tables 18 and 19) showed that a significant difference existed between the three groups of communities in reference to the factors of ascribed authority and personal authority. First, as shown in Table 18, a chi-square analysis showed that a significant difference existed between the community groups in reference to ascribed authority: chi-square = 6.14, df = 2, $p < .10$. Table 18 shows that there was a progression in the number of responses from group 1 to group 3. Observation of the table indicated that in group 3, where a lower percentage of people washed their hands, the respondents were more likely to identify ascribed sources of authority.

Table 19 shows that a significant difference also existed in response to the factor of personal authority: chi-square = 30.07, df = 2, $p < .10$. As shown in the table, group 3 communities differed the most from the expected scores. Thus the respondents in group 3 were

more likely to identify sources of personal authority than were the respondents in groups 1 and 2.

Table 18.--Response to ascribed authority.

Factor		Group 1	Group 2	Group 3	
Ascribed authority	Observed	21	33	44	98
	Expected	32.7	32.7	32.7	98
		53.7	65.7	76.7	196

Chi-square = 6.14, $p < .10$

Table 19.--Response to personal authority.

Factor		Group 1	Group 2	Group 3	
Personal authority	Observed	54	12	80	146
	Expected	48.7	48.7	48.7	146
		102.7	60.7	128.7	292

Chi-square = 30.07, $p < .10$

When the factor of earned authority was compared with the factors of ascribed and personal authority, a chi-square analysis showed that an inverse relationship existed between earned authority and the other two factors. First, in Table 20, a comparison of earned authority with ascribed authority showed a significant difference: chi-square = 12.96, df = 2, $p < .10$.

Table 20.--Earned authority compared to ascribed authority.

Factor		Group 1	Group 2	Group 3	
Earned authority	Observed	55	32	37	124
	Expected	42.5	36.3	45.2	
Ascribed authority	Observed	21	33	44	98
	Expected	33.5	28.7	35.8	
		76	65	81	222

Chi-square = 12.96, $p < .10$

Following, in Table 21, a comparison of earned authority and personal authority also showed a significant difference: chi-square = 23.27, df = 2, $p < .10$. Thus, the factor earned authority was associated with group 1, the factor ascribed authority was associated with group 2, and the factor ascribed authority was associated with group 3.

Table 21.--Earned authority compared to personal authority.

Factor		Group 1	Group 2	Group 3	
Earned authority	Observed	55	32	37	124
	Expected	50.1	20.2	53.7	
Personal authority	Observed	54	12	80	146
	Expected	58.9	23.8	63.3	
		109	44	117	270

Chi-square = 23.27, $p < .10$

Summary of findings. In response to the question "Why did you decide to wash your hands before eating?" a significant difference existed in relation to the following factors under the category of Source of Authority:

1. An inverse relationship existed between the factor of earned authority and the factors of ascribed and personal authority. In communities where a higher percentage of people washed their hands, the interview participants were more likely to identify the factor of earned authority than ascribed or personal authority.

2. In contrast, in group 2 communities where a lower percentage of people washed their hands, the interview participants were more likely to identify the factor of ascribed authority.

3. In group 3 communities where the lowest percentage of people washed their hands, the interview participants were more likely to identify the factor of personal authority.

Analysis of Question 2

The second interview question probed people's response to the question of why they decided to wash their hands. Table 22 compares the changes in percentages from question 1 to question 2, in reference to the factors in the Sources of Authority category. In the communities in group 1 there was a movement away from identifying sources with personal and ascribed authority. The concentration of responses was in reference to sources with earned authority. The percentage of respondents who responded to sources of personal authority decreased from 41%

Table 22.--Comparison of percentages of responses to Source of Authority: Response to Questions 1 and 2.[a]

Factor	Group 1		Group 2		Group 3	
	Response to Question 1	Response to Question 2	Response to Question 1	Response to Question 2	Response to Question 1	Response to Question 2
Earned authority	42%	83%	42%	67%	23%	51%
Ascribed authority	16%	4%	43%	18%	27%	39%
Personal authority	41%	7%	16%	12%	50%	10%

[a]Percentages may not add up to 100% because of respondents who declared that no one helpd them. See Appendix I for a complete listing of frequencies and percentages.

to 7%. The percentage of people who responded to sources of ascribed authority decreased in group 1 from 16% to 4%. The concentration of responses in group 1 was in reference to the factor of earned authority. The percentage of people who responded to sources of earned authority increased from 42% to 83%.

In the communities in group 2 the percentage of people who identified sources of ascribed authority also decreased, from 43% to 18%. The percentage of people who identified personal sources of authority decreased from 16% to 12%. Meanwhile, the percentage of respondents who identified earned authority increased from 42% to 67%. (See Table 22.)

In the communities in group 3, the percentage of people who identified personal authority decreased from 50% to 10%. The percentage of respondents who identified earned and ascribed authority increased from 23% to 51% and from 27% to 39%, respectively.

Chi-square analysis. The large number of people who identified the factor of earned authority in group 1 communities resulted in a significant difference between the three groups of communities: chi-square = 9.85, df = 2, $p < .10$. (See Table 23.) Thus in the communities where a higher percentage of people washed their hands there was a movement in people's responses away from sources of personal and ascribed authority. The responses in group 1 were concentrated in the factor of earned authority.

Table 23.--Response to earned authority.

Factor		Group 1	Group 2	Group 3	
Earned authority	Observed	111	56	70	237
	Expected	79	79	79	237
		190	135	149	474

Chi-square = 9.85, $p < .10$

Table 24 shows that among the three groups of communities the number of people who identified sources of personal authority decreased such that no significant difference existed between the three groups in response to this factor: chi-square = 0.39, df = 2, $p > .10$.

Table 24.--Response to personal authority.

Factor		Group 1	Group 2	Group 3	
Personal authority	Observed	9	10	13	32
	Expected	10.7	10.7	10.7	32
		19.7	20.7	23.7	64

Chi-square = 0.39, $p > .10$

In reference to the factor of ascribed authority, Table 25 shows a significant difference continued to exist between the groups: chi-square = 25.57, df = 2, $p < .10$. The scores in Table 25 indicate that the difference was between groups 1 and 2, and group 3. Thus in

the communities where the lowest percentage of people washed their hands, the respondents continued to identify sources of ascribed authority.

Table 25.--Response to ascribed authority.

Factor		Group 1	Group 2	Group 3	
Ascribed authority	Observed	5	15	53	73
	Expected	24.3	24.3	24.3	73
		29.3	39.3	77.3	146

Chi-square = 25.57, $p < .10$

When the factors of earned authority and ascribed authority were compared, a significant difference existed between the two factors: chi-square = 50.17, df = 2, $p < .10$. (See Table 26.) The scores in Table 26 indicate that an inverse relationship existed between the factors. Whereas the observed to expected scores decreased from group 1 to group 3 in reference to earned authority, the proportion increased in reference to ascribed authority.

Summary of findings. When the interview participants were probed about their reasons for washing their hands, a significant difference was found between the three groups of communities:

1. In communities where a higher percentage of people washed their hands, the respondents were more likely to identify earned sources of authority than in communities where a lower percentage of people washed their hands.

Table 26.--Earned authority compared to ascribed authority.

Factor		Group 1	Group 2	Group 3	
Earned authority	Observed	111	56	70	237
	Expected	88.7	54.3	94.0	
Ascribed authority	Observed	5	15	53	73
	Expected	27.3	16.7	28.9	
		116	71	123	310

Chi-square = 50.17, $p < .10$

2. In communities where a lower percentage of people washed their hands, the respondents were more likely to identify ascribed sources of authority.

3. No significant difference existed between the three groups of communities in reference to the factor of personal authority, where one existed previously.

4. A pattern existed in the identification of factors from the first question to the second.

a. The respondents in group 1 decreased their references to personal and ascribed authority and concentrated their responses on the factor of earned authority.

b. The respondents in group 2 shifted their responses from ascribed authority to earned authority. The decrease in ascribed authority resulted in group 2 being significantly different from group 3.

c. The respondents in group 3 shifted their responses from personal authority toward ascribed and earned authority.

Thus as the percentage of people who washed their hands changed from group 3 to group 1, the source of authority shifted from personal to ascribed to earned authority.

Leaders' Actions

The third interview question asked: "What things have leaders done that have influenced you to wash your hands before eating?" People responded to the question by identifying a variety of leaders and the things they had done to encourage hand washing. The analysis of question 3 focused on the specific actions that the leaders performed and then related the actions with different classes of leaders. The purpose of the analysis was to discover what actions, if any, differentiated the communities, and then to determine if certain actions were related to particular classes of leaders.

From the data-analysis procedure emerged the following categories. Under each category is a listing of the kinds of leaders that pertain to the category:

- Response to Promoter
  - -Health Promoter
- Local Leaders: No Formal Training
  - -Community-level political leaders
  - -Parents/family elders
  - -Parent-teacher association leaders
  - -Community-level committee members
  - -Club (sports, young people, etc.) leaders
  - -Church leaders
  - -Personal leadership (regards self as a leader)

. Local Leaders: Formal Training
  -Health Promoter
  -Health aides
  -Literacy educator
  -Development organization agent

. External Leaders
  -School teachers (do not live in the community)
  -Government Primary Health Care nurses and doctors
  -"Whites" (non-Quichuas with community contacts)
  -Religious teachers (Catholic and Protestant)

The actions identified by the interview participants as being influential in washing their hands all fell into the following groups:

. Telling
. Visiting
. Modeling
. Organizing

The responses to the question about leadership were similar to the responses to the questions asking "Why . . . ?" The identification of a person, and what that person does, is so important in this traditional society, that the issue of "person" transcends the first three questions. However, the responses to the leadership question do serve to strengthen earlier findings and to describe community members' responses to a wider range of leaders. (Refer to Appendix H for a list of statements under each factor.)

Response to Promoters

The responses of the interview participants were concentrated on the factors of talk and visit. Table 27 shows that only 15 people in all six of the communities made reference to the factors of modeling and organizing.

Table 27.--Response to promoter.

Factor	Group 1	Group 2	Group 3
Talks	7	8	30
Visits	25	4	16
Modeling	6	4	4
Organizing	1	0	0

Data on the response to the promoter confirmed earlier findings. The comparison of the factors health talks and visits demonstrated a significant difference in the proportion of responses between the communities in group 1 and groups 2 and 3: chi-square = 16.21, df = 2, $p < .10$. (See Table 28.) The proportions in Table 28 indicate that the expected frequencies in groups 2 and 3 differed from the observed frequencies in the same direction in each factor, whereas both differed from the direction of group 1.

Table 28.--Health talks compared to visits.

Factor		Group 1	Group 2	Group 3	
Health talks	Observed	7	8	30	45
	Expected	16	6	23	
Visits	Observed	25	4	16	45
	Expected	16	6	23	
		32	12	46	90

Chi-square = 15.72, $p < .10$

The number of responses to other promoter actions of being a role model and organizing were so low that a statistical comparison was not valid. (See Table 27.)

Summary of findings. The focus of the community members' responses was on the factors of health talks and visits. In the study, a response to modeling and organizing efforts by the promoters was not significant. The researcher did find that communities that were proportionally more responsive to visits and less to talks were those communities where a higher percentage of people washed their hands. In contrast, it was found that communities that were proportionally more responsive to talks and less to visits were communities where a lower percentage of people washed their hands.

Local Leaders: Formal Training

Local leaders with formal training are leaders who have been trained by the government or by development agencies. The relationship of the factors health talks and visits was the same as with the Health Promoter. As shown in Table 29, when the proportion of responses to health talks was compared to the proportion of responses to visits, there was a significant difference between the community groups: chi-square = 15.01, df = 2, $p < .10$.

Table 29.--Local leaders: Health talks compared to visits.

Factor		Group 1	Group 2	Group 3	
Health talks	Observed	22	21	47	90
	Expected	32.1	16.1	41.8	
Visits	Observed	28	4	18	50
	Expected	17.9	8.9	23.2	
		50	25	65	140

Chi-square = 15.01, $p < .10$

Of the leaders in this category, the Health Promoter is the only one trained to make home visits. Thus the data on the factor visits were weighted by the actions of the promoter. However, local leaders with outside training are trained to give talks. When the proportion of actual responses to the factor talks was compared to a hypothetical proportion (see Table 30), a significant difference was found: chi-square = 6.57, df = 2, $p < .10$. The consistency and quality of the intervention of local leaders other than the promoter was not controlled in the study; thus the finding cannot be interpreted on its own. However, it does conform to the general pattern of the differential response of communities to the factor of talks.

Table 30.--Local leaders: Response to health talks.

Factor		Group 1	Group 2	Group 3	
Health talks	Observed	22	21	47	90
	Expected	30	30	30	90
		52	51	77	180

Chi-square = 6.57, $p < .10$

Summary of findings. The findings from the category of local leaders: formal training were consistent with the findings from the category of response to promoter.

1. An inverse relationship existed between the interview participants' identification of the factors of talks and visits. In communities where people proportionally responded more to visits from leaders than to talks, the community members were more likely to take action and wash their hands.

2. In contrast, in communities where people were proportionally more responsive to talks and less responsive to visits, community members were less likely to take action and wash their hands.

3. The differential response to the factor of talks held true in reference to all community leaders with formal training. In communities where a lower percentage of people washed their hands, people were more likely to identify health talks as that which influenced them to wash their hands.

Local Leaders: No Formal Training

Local leaders with no formal training are people who exercise leadership with no official linkage to external organizations that provide training and logistical support. Local religious leaders are included in this category because they are not directly governed by priests or missionaries, and their level of training is much lower than that of leaders in the category of local leaders with formal training.

The interview participants' identification of leaders in this category was limited to the factors of talks and modeling. The factor of visits was referred to only twice, and the factor of organizing was referred to only seven times in all the communities. The action of visiting as a teaching/learning action is apparently not an indigenous leadership action. (See Appendix I.)

The findings from the interview participants' responses cannot stand on their own since the researcher did not control for the consistency or quality of input from this category of leader. The contribution of the findings is in terms of the fit to the overall pattern.

As shown in Table 31, no significant difference was found in the proportion of responses to health talks between the three groups: chi-square = 3.72, df = 2, $p > .10$. The interview participants identified the intervention of local leaders with no formal training proportionately equally in the three groups of communities.

Table 31.--Local leaders--no training: Response to health talks.

Factor		Group 1	Group 2	Group 3	
Health talks	Observed	20	14	32	66
	Expected	22	22	22	66
		42	36	54	132

Chi-square = 3.72, $p > .10$

The difference in interview participants' response to the factor talks was in response to the promoters and to local leaders with formal training. Apparently community members responded equally in the three groups of communities to local leaders who were not directly part of community development programs. However, more needs to be known about the nature of their involvement with the community. It could be that there is something about the leadership patterns of this category of leader that was not uncovered in the study.

A significant difference was found in Table 32 between the three groups in the proportion of responses to the factor of modeling: chi-square = 12.10, df = 2, $p < .10$. However, the frequencies of responses were too low to draw any conclusions.

As with the factor of talks, the researcher was not able to probe in sufficient depth to make a definitive statement about community members' response to local leaders in this category. A more direct study of local leadership patterns is needed in order to know

more precisely how indigenous leadership patterns affect the differential response of communities.

Table 32.--Local leaders--no training: Response to modeling.

Factor		Group 1	Group 2	Group 3	
Modeling	Observed	10	0	18	28
	Expected	9.3	9.3	9.3	28
		19.3	9.3	27.3	56

Chi-square = 12.01, $p < .10$

Summary of findings. No apparent difference existed in the proportion of the interview participants' identification of local leaders with no formal training. As far as the researcher could determine, the differential response of communities to development interventions was not related to indigenous leadership patterns.

External Leaders

A fourth category of leaders identified in the interviews were people who were not community members, but who were recognized as people of influence. The only action of consequence identified by the interview participants was in regard to the factor of talks. Table 33 shows that no significant difference was found between the three groups in the proportion of responses to the factor talks: chi-square = 0.61, df = 2, $p > .10$. The researcher did not control for the quality and

consistency of input from the external leaders; thus the significance of the finding is limited.

Table 33.--External leaders: Response to health talks.

Factor		Group 1	Group 2	Group 3	
Health talks	Observed	14	9	10	33
	Expected	11	11	11	33
		25	20	21	66

Chi-square = 0.61, $p > .10$

On the basis of the spontaneous response of the interview participants, it appears that community members did not respond differentially to external leaders. The differential response of the community members was in reference to local leaders. An important reason may be that the external leaders who do have entry into the communities have a degree of influence because of the fact of having been identified as trustworthy. Because each community has a few trustworthy outsiders who relate to the community members, their influence is proportionately equal.

Comparisons Among Categories of Leaders

The categories of leaders were compared to determine if the differential response of communities was due to a greater influence of one category of leader over another. The case might exist where the

Health Promoter, or some other leader, had been discredited. Consequently, in a particular community people would not take action because of a disregard for that leader. Apparently such a case did not apply in this study, since in Table 34 there was no significant difference in the proportion of responses on the basis of the classification of leaders: chi-square = 1.65, df = 6, $p > .10$.

Table 34.--Comparison of responses to leaders.

Factor		Group 1	Group 2	Group 3	
No training	Observed	32	21	52	105
	Expected	36.5	20.5	47.9	
Formal training (including promoter)	Observed	57	29	69	155
	Expected	53.9	30.3	70.8	
External	Observed	16	9	17	42
	Expected	14.6	8.2	19.2	
		105	59	138	302

Chi-square = 1.65, $p > .10$

Thus the differential response of communities was not due to some communities discrediting a category of leader or valuing a class of leader proportionately more in one group of communities than another. This finding is especially important in reference to the Health Promoters, who are the principal interveners in promoting the behavior of hand washing. In reference to the question about leaders,

the health promoters were not valued more or less in one group of communities than another.

Summary of findings. The differential response of communities was in response to the kind of action, not to the class of leader. No category of leader was proportionately identified as being more influential in one group of communities over another.

Customs

The fourth interview question asked was: "What customs or traditions do you have that have influenced you to wash your hands before eating?" The interview participants responded to the question by identifying a variety of customs related to the act of washing themselves or activities related to the use of water. The analysis focused on the actions identified by the interview participants; no "actors" were referred to beyond themselves as individuals.

The process of generating factors resulted in three factors that represented all of the responses to the interview question. The three factors fell under the single category of Customs. The purpose of the analysis was to discover which customs associated with hand washing differentiated the three groups of communities. Out of the data-sorting procedure emerged the following factors:

- Traditional habits
- Consciousness of health
- Image

By traditional habits the researcher refers to actions related to hand washing that people performed before knowing about the preventive health behavior of washing before eating--actions that

people "have always done." Some of the most frequent responses under this factor were washing after working in the fields, washing before rolling wool into thread, and washing before picking up books or before using paper and pencil.

By consciousness of health the researcher refers to customs of hand washing that are not part of Quichua traditions. The respondents declared that the actions under this factor had become customs because of a newly acquired awareness that it was good to wash in relation to these actions. Some of the most frequent responses under this factor were: before eating, before cooking, and to feel clean.

By image the researcher refers to actions related to washing that people perform in order to be presentable when they go outside the community or when they attend social functions. Because of the climatic conditions, people bathe only when an important occasion warrants. When they have to go outside their communities on market days, for community business or during social occasions, it is important for their self-respect to be clean. Thus the actions identified by the interview participants under this factor were all related to washing in order to go somewhere: to go to market, to go to town, to go to church, and to go to festivals. (See Appendix H for a list of the statements under each factor.)

Trends Based on Percentages

In the communities in group 1, the highest percentage of responses related to the factor of traditional habits, 54%. (See

Table 35.) The responses related to the factor of consciousness of health and image were lower, with the percentage of responses related to image being the lowest, 19%. Thus in the communities where a higher percentage of people washed their hands, the interview participants identified customs related to traditional habits are being the most influential in people acting on their knowledge of hand washing. Much less influential were customs related to consciousness of health and even less customs related to image.

Table 35.--Percentage of responses to Customs factors.

Factor	Group 1	Group 2	Group 3
Traditions	54%	41%	27%
Consciousness of health	27%	14%	30%
Image	19%	46%	43%

In the communities in groups 2 and 3, the percentage of responses related to the factor of traditional habits decreased progressively to 41% and 27%. (See Table 35.) The interview participants in the second and third groups identified customs related to image as being more influential, 46% and 43%, respectively. A low percentage of interview participants in group 2 communities identified customs related to consciousness of health, 14%. For the interview participants in group 3 communities, customs related to the consciousness-of-health factor were more important, 30%.

Thus in communities in group 3 where a lower percentage of people washed their hands, the interview participants identified customs related to image as being influential in acting on their knowledge of washing hands. Much less influential were customs related to consciousness of health and traditional habits.

Communities in group 2 appeared to be in transition. The percentage of responses related to traditional habits (41%) was lower than group 1 but higher than group 2. On the other hand, the percentage of responses related to consciousness of health (14%) was lower than groups 1 and 3. However, the percentage of responses to image customs was similar to group 3. (See Table 35.)

Chi-Square Analysis

A chi-square analysis in Table 36 of the differential responses of the three groups of communities shows a significant difference between the community groups: chi-square = 33.05, df = 4, $p < .10$.

Table 36.--Responses to Customs factors.

Factor		Group 1	Group 2	Group 3	
Traditional habits	Observed	67	32	43	142
	Expected	48.4	30.8	62.8	
Consciousness of health	Observed	33	11	48	92
	Expected	31.3	20.0	40.7	
Image	Observed	24	36	70	130
	Expected	44.3	28.2	57.5	
		124	79	161	364

Observations of the percentages of responses in each factor indicated that the greatest contrast in percentages between the community groups was between the factors of tradition and image. When the factors of tradition and image were compared in Table 37, a significant difference was found between the three groups: chi-square = 26.53, df = 2, $p < .10$.

Table 37.--Comparison of tradition and image factors.

Factor		Group 1	Group 2	Group 3	
Traditional habits	Observed	67	32	43	142
	Expected	47.5	35.5	59.0	
Image	Observed	24	36	70	130
	Expected	43.5	32.5	54.0	
		91	68	113	272

Chi-square = 26.53, $p < .10$

The proportion of responses related to the factor of traditional habits decreased from group 1 to group 3. Meanwhile, the proportion of responses to the factor of image increased between group 1 and groups 2 and 3.

Summary of Findings

1. An inverse relationship existed between the identification of the factors of tradition and image. In those communities where a higher percentage of people washed their hands before eating, there was

a proportionately greater identification of traditional habits as being influential in hand washing.

2. In the communities where a lower percentage of people washed their hands before eating, there was a proportionately greater identification of image as an influence in hand washing.

3. The communities in group 2 appeared to be in transition. The percentage of responses related to the factor of traditional habits was midway between group 1 and group 3. On the other hand, the percentage of responses related to the factor of image was similar to that of group 3.

Obstacles

The fifth interview question asked: "What obstacles are there to washing your hands before eating?" People responded to the question by giving their reasons for sometimes not washing their hands before eating. The purpose of the analysis was to discover whether a difference existed between the three groups of communities in the reasons given for not washing hands before eating.

The analytical process of generating factors focused on the reasons people gave for not washing their hands. No "actors" beyond themselves were mentioned as obstacles. In all communities the interview participants recognized their responsibility for washing hands. No one identified a second party as an obstacle.

Out of the data-sorting process emerged the following factors:

- Lack of commitment
- Physical factors
- External factors
- Beliefs

The most frequent response in all communities referred to the factor of lack of commitment. By lack of commitment the researcher refers to reasons given in which people recognized there was no rational obstacle; only a lack of discipline prevented them from consistently washing their hands. Under this factor the most common responses were: forgetfulness, laziness, and lack of consistent habit.

By physical factors the researcher refers to settings where physical circumstances presented an obstacle for the moment. Under this factor the most common responses were: too busy, being tired, and the water being too cold.

By external factors the researcher refers to settings where people did not wash because of obstacles in the environment over which individuals had no direct control. Under this factor the most common response was lack of water. (Refer to Appendix H for a listing of statements under each factor.)

In all the sample communities the number of responses identifying an external factor was low in all communities except one, Bishud. (See Table 38.) In Bishud, 34% of the respondents identified a lack of water as an obstacle. The reason for the relatively high percentage in Bishud is that the community is in a dry area, and in the dry season people have to go to the stream at the bottom of the ridge

to get water instead of the wells and springs closer to their homes. The interviews were conducted at the end of the dry season.

While the percentage of respondents who identified the external factor was high relative to the other communities, 66% of the interview participants in Bishud did not feel that the lack of water was the principal obstacle. The following analysis shows that factors other than a lack of water differentiated the three groups of communities.

The fourth factor presenting an obstacle was beliefs. By beliefs the researcher refers to statements made that certain beliefs prevent people from washing their hands. Under this factor some of the beliefs are: cold water makes sick people worse off, and some older people believe that washing hands is harmful.

Data Analysis

Table 38 shows that in group 1 communities the most frequently mentioned factor was a lack of commitment: 51% of the respondents in group 1 made statements related to this factor. In contrast, only 25% of the respondents in group 1 made statements related to the factor of physical conditions. The percentages of responses related to the factors of external conditions and beliefs were also low: 14% and 10%, respectively.

Table 38.--Percentages of responses to Obstacle factors.

Factor	Group 1	Group 2	Group 3
Lack of commitment	51%	38%	27%
Physical conditions	25%	34%	34%
External factors	14%	20%	29%
Beliefs	10%	8%	11%

A chi-square analysis in Table 39 of the difference among the community groups in reference to the four factors showed a significant difference: chi-square = 19.95, df = 6, $p < .10$.

Table 39.--Response to Obstacle factors.

Factor		Group 1	Group 2	Group 3	
Lack of commitment	Observed	64	29	41	134
	Expected	47.5	28.9	57.7	
Physical conditions	Observed	31	26	51	108
	Expected	38.2	23.3	46.5	
External factors	Observed	18	15	44	77
	Expected	27.3	16.6	33.2	
Beliefs	Observed	12	6	16	34
	Expected	12.0	7.3	14.6	
		125	76	152	353

Chi-square = 19.95, $p < .10$

In the communities in groups 2 and 3 the responses were evenly distributed among the four factors. The factor of physical conditions had the highest percentage of statements in group 3 (34%) and lack of commitment in group 2 (38%). (See Table 38.) The range of percentages related to all the factors except beliefs was similar. A chi-square analysis in Table 40 showed that no significant difference existed between groups 2 and 3 in relation to lack of commitment, physical conditions, and external factors: chi-square = 3.66, df = 2, $p > .10$. Thus, while in group 1 the interview participants' responses were centered on the factor of lack of commitment, the responses of groups 2 and 3 were proportionately similar among three of the four factors.

Table 40.--Comparison of responses to lack of commitment, physical conditions, and external factors.

Factor		Group 2	Group 3	
Lack of commitment	Observed	29	41	70
	Expected	23.8	46.2	
Physical conditions	Observed	26	51	77
	Expected	26.2	50.8	
External factors	Observed	15	44	59
	Expected	20.0	39.0	
		70	136	206

Chi-square = 3.66, $p > .10$

Further analysis in Table 41 showed that the difference was due in part to a differential response to the factors of lack of commitment and physical conditions: chi-square = 10.04, df = 2, $p < .10$.

Table 41.--Comparison of lack of commitment and physical conditions factors.

Factor		Group 1	Group 2	Group 3	
Lack of commitment	Observed	64	29	41	134
	Expected	52.6	30.5	50.9	
Physical conditions	Observed	31	26	51	108
	Expected	42.4	24.5	41.1	
		95	55	92	242

Chi-square = 10.04, $p < .10$

While the percentage of responses related to the lack-of-commitment factor decreased from group 1 to group 3, the percentage of responses to the physical-conditions factor increased from group 1 to groups 2 and 3. (See Table 38.)

Table 42 shows that no significant difference existed in relation to the proportion of responses to the factor of beliefs: chi-square = 2.45, df = 2, $p > .10$.

Table 42.--Response to the factor of beliefs.

Factor		Group 1	Group 2	Group 3	
Beliefs	Observed	12	6	16	34
	Expected	11.3	11.3	11.3	34
		23.3	17.3	27.3	68

Chi-square = 2.45, $p > .10$

As shown in Table 43, a significant difference was found in relation to the proportion of responses to external factors. As previously mentioned, the difference was primarily due to the high number of statements referring to the lack of water in Bishud, a group 3 community. What made the number of statements a larger number was the fact that in the other five communities the number of statements was low.

Table 43.--Response to external factors.

Factor		Group 1	Group 2	Group 3	
External factors	Observed	18	15	44	77
	Expected	25.7	25.7	25.7	77
		43.7	40.7	79.7	154

Chi-square = 8.97, $p < .10$

Summary of Findings

1. An inverse relationship between the factors of lack of commitment and physical conditions differentiated the communities where a higher percentage of people washed their hands from communities where a lower percentage of people washed their hands.

2. The proportion of response in communities where a lower percentage of people washed their hands to the factors of lack of commitment, physical conditions, and external conditions was the same.

3. In contrast, in the communities where a higher percentage of people washed their hands, the focus of the obstacles was on the factor of a lack of commitment.

4. No significant difference existed among the community groups in relation to the proportion of responses to obstacles of beliefs.

Summary of Findings

In the identification of Learning Settings, the following factors differentiated the communities that readily responded from those that did not:

1. In communities where a higher percentage of people washed their hands, people were more likely to identify settings of informal exchange than settings of structured learning or self-taught.

2. In communities where a higher percentage of people washed their hands, people were more likely to identify structured learning settings than self-taught settings.

3. In communities where a lower percentage of people washed their hands, people were likely to identify settings where people were self-taught.

4. As the communities increased in rank of people who washed hands, the responses changed according to the following pattern: from self-taught settings (lowest) to structured learning settings to informal exchange settings (highest).

In the identification of Sources of Authority, the following factors differentiated the communities:

5. In communities where a higher percentage of people washed their hands, people were more likely to identify the factor of earned authority than factors of ascribed or personal authority.

6. In communities where a lower percentage of people washed their hands, people were likely to identify factors of ascribed authority.

7. In communities where a lower percentage of people washed their hands, people were likely to identify the factor of personal authority.

8. As the percentage of people who washed their hands changed from group 3 to group 1, the pattern of response shifted from personal authority to earned authority.

In the identification of Leadership Patterns, the following factors differentiated the communities:

9. In communities where a higher percentage of people washed their hands, people were more likely to identify the factor of visits from the Health Promoter rather than the factor of talks.

10. In communities where a higher percentage of people washed their hands, people were more likely to identify the factor of visits from all local leaders with formal training rather than the factor of talks.

11. In communities where a lower percentage of people washed their hands, people were likely to identify the factor of talks, whether from the Health Promoter or other leaders with formal training.

12. No leadership pattern of local leaders with no formal training was more influential than another in any of the communities.

13. No leadership pattern of external leaders was more influential than another in any of the communities.

14. That which differentiated the communities was the leader's action, regardless of the class of leader. No category of leader was identified as being more influential in one group of communities over another.

In the identification of Customs that influenced the action of washing hands, the following factors differentiated the communities:

15. In communities where a higher percentage of people washed their hands, people were more likely to identify the factor of traditional habits, rather than the factor of image.

16. In communities where a lower percentage of people washed their hands, people were likely to identify the factor of image rather than the factor of traditional habits.

In the identification of Obstacles that inhibited the action of washing hands, the following factors differentiated the communities:

17. In communities where a higher percentage of people washed their hands, people were more likely to identify the factor of lack of commitment, rather than the factor of physical conditions.

18. In communities where a lower percentage of people washed their hands, people were likely to identify the factor of physical conditions.

19. The factor of beliefs did inhibit one group of communities proportionately more than another group. The inhibition created by beliefs about the problems associated with washing hands equally affected all communities.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

A conviction shared by many development educators is that an important outcome of educational interventions is people taking action. Educators know a great deal about how to intervene effectively in order to help people take action. Nevertheless, situations exist where people in various communities do not uniformly respond even when the technically most appropriate educational strategy is employed. In some communities a large percentage of people take action on what they have learned. In other communities, months or years pass before people take action on what they have learned. Even when people share common cultural and socioeconomic characteristics, community members do not necessarily respond in the same way.

Context

The differential response of communities to development interventions creates a frustration among educators. The tendency among educators is to look for educational methods or motivation strategies that will have a special effect on the communities where people are not responsive. A common expectation among educators is that people will respond if the right motivational or educational method can be found.

The fact of having the conviction of seeing people take action does not necessarily result in people taking action. The differential response of communities to educational interventions is not only a consequence of educators' efforts. Some factors exist beyond the control of an educational strategy that influence the response of community members. Some differences exist that are a part of people's experience and perceptions.

Purpose

The purpose of the study was to discover some of the factors in people's perceptions of their experience that differentiate communities that readily take action from those that do not. The researcher selected six traditional Quichua communities in the Ecuadorian Highlands for the research on factors that have influenced their application of preventive health behaviors.

The communities were part of the same development project and shared the same cultural and economic characteristics. The six communities were selected out of a group of 34 communities in the same project area. The six communities were selected on the basis of all meeting the criteria for a consistent mode of intervention by Health Promoters. A great difference existed among the communities in the percentage of people who were practicing preventive health behaviors. In some communities a high percentage of people had adopted preventive health behaviors. In other communities a lower percentage of people had adopted preventive health behaviors.

The researcher narrowed the focus of the study by inquiring into the phenomenon of people acting on what they knew about preventive health behaviors. People had known about the importance of washing hands for over five years, yet a wide discrepancy existed among communities in respect to the percentage of people who practiced what they knew.

The research question asked in the study was as follows:

> What factors differentiate communities where people readily take action on what they have learned from communities where people do not?

In particular, the researcher inquired into people's perceptions of why they chose to take action on what they knew about a preventive health behavior, and into the effect of traditional leadership patterns and traditional outcomes on taking action.

Conclusions

The researcher used group interviews to obtain statements from the interview participants on their reasons for practicing the preventive behavior of washing hands before eating. The process of sorting and analyzing the data resulted in the formulation of factors and the grouping of the factors into categories.

Categories and Factors

The researcher found that some factors existed in the research population that differentiated people in the research communities. The differentiating factors were not something that could be directly changed by educational strategies. The findings divulged some factors

that can increase educators' understanding of the differences among people in communities that otherwise share the same cultural and socioeconomic characteristics.

Learning settings. People in communities differed in their responsiveness to learning settings. In some communities, people were more responsive to settings where there was an informal exchange among people, whether in a one-on-one situation or an informal gathering of a few people. People in these communities were more likely to take action on what they had learned about the importance of washing their hands.

In some communities, people identified more with structured learning settings where people attended formal meetings to learn about preventing illness and promoting good health. Even though the people in these communities had the same opportunity for informal exchanges, they identified more with learning in community meetings, health classes, or literacy classes. People who identified with structured learning settings were not as likely to take action on what they had learned.

In some communities, people identified more with self-taught settings where people considered to have learned about acting on a preventive health behavior on their own. In communities where the highest percentage of people identified this factor, they were the least likely to take action.

A pattern existed in the shift in identification of factors. As the interview participants were probed, their responses shifted from

identifying self-taught settings to structured settings to informal settings.

As the communities increased in rank of people who washed hands, the responses changed according to the following pattern: from self-taught settings (lowest) to structured learning settings to informal exchange settings (highest).

Source of authority. People in communities differed in their responsiveness to sources of authority. People in some communities were more responsive to local people who had earned authority in promoting behavioral change. People in these communities were more likely to take action on what they had learned about the importance of washing their hands.

In some communities, people identified more with leaders who had ascribed authority. In this case, leaders had authority because of their title or ascribed status. Community members chose to respond more to leaders with ascribed status even though leaders with earned authority were active and well accepted. However, in these communities people were less likely to take action on what they had learned about preventive health behaviors.

In some communities, people identified with personal authority, where they regarded themselves as their own source of authority. People stated that they washed their hands because of a personal decision to do so. In these communities, however, people were even less likely to wash their hands.

A pattern also existed in the shift in identification of sources of authority. When probed, the interview participants shifted their responses from personal authority to ascribed authority to earned authority.

As the communities increased in rank of people who washed hands, the responses changed according to the following pattern: from personal authority (lowest) to ascribed authority to earned authority (highest).

Leadership patterns. People in communities differed in their responsiveness to leadership patterns. In the interviews people identified four classes of leaders: local leaders with no formal training, local leaders who have had formal training, Health Promoters, and leaders from outside the community. In response to a specific question about leaders' actions, community members differed in the actions they identified. What differentiated the communities was the leaders' actions, not the class of leader.

In some communities, people identified visits from a leader as the action that influenced them to act on the recommendation to wash their hands before eating. During home visits there was more of a mutual exchange between leaders and host. In some communities, people responded more readily to the opportunities for mutual exchange. In these communities people were more likely to take action on what they had learned.

In some communities, people identified more with health talks given by a leader. The talks were given in a variety of situations,

but the basic action identified was the same: Someone was telling people about the importance of washing hands. Even though the Health Promoters in these communities were just as faithful as the promoters in other communities in making home visits and in staying in the community to be with the people, the community members identified more with the talks. Yet the community members were less likely to take action on what they heard in the talks than the community members who responded more to visits.

Customs. People in communities differed in response to the customs that influenced people to wash their hands. In some communities, people identified more with traditional habits that they associated with washing hands before eating. Men had the tradition of washing their hands when they passed a stream on the way home from work. Women had the tradition of washing their hands before spinning wool into thread. In communities where people identified more with traditional habits, they were more likely to take action on their knowledge about washing hands before eating.

In some communities, people identified more with customs related to having a good image. People identified washing before eating with customs that presented a good image. People in these communities were less likely to actually follow through by taking action.

Obstacles. People in communities differed in the identification of obstacles to hand washing. In some communities, people were more likely to identify a lack of commitment as the reason

for sometimes not washing. For example, people forgot to wash or simply admitted that they got lazy. However, in these communities people were more likely to overcome their lack of commitment and wash their hands.

In some communities, people were more likely to identify limiting physical conditions as the reason for not washing. For example, people were too busy with chores, they were tired, or the weather was cold and rainy and washing with cold water was too much. In communities where people did not wash because of the physical conditions, they were less likely to overcome the obstacles and wash their hands.

Health beliefs. No difference existed in people's response to health beliefs that inhibited the practice of hand washing. The same proportion of people in all the communities believed that illness increased when sick people washed with cold water. Also, the same proportion of older people complained that the cold water aggravated old-age conditions. Thus, despite differences among communities with respect to some obstacles, the community members were on the same level with respect to the health-belief factor.

Implications of Community Factors

A critical point in people taking action is the transition from knowing about something to doing something about it. The researcher found that certain factors differentiated communities that readily took action from those that did not. Thus the issue of the transition from knowing to acting was not only affected by the mode of educational

intervention or how much learners knew. Application of knowledge was also a function of factors in people's perceptions of their experiences.

Learning Environment

The researcher identified a difference among communities in reference to preferred learning environments. Learning environments refers to two categories of factors found in the study. One aspect of a learning environment is the learning setting. Another aspect refers to customs that provide a context for relating to new preventive health behaviors.

Learning setting. One learning setting was associated with taking action on knowledge, and the other learning setting was associated with acquisition of knowledge. In general, the more informal the learning setting, the greater the likelihood of taking action. In contrast, the more formal the learning setting, a lesser likelihood exists that people will take action on what they have learned.

The association with learning settings is complicated by the fact that in some communities people by choice associate themselves with one learning setting over another. The preference for a formal learning setting is possibly affected by the association of the formal setting with formal education. Yet some communities have worked through that association and have come to associate more with informal learning settings. Thus the decision of which learning setting to include in health education curricula is not just a decision made by

curriculum developers. Some communities by nature associate more with one learning setting than another.

Customs. The researcher found that the factor of tradition had a greater association with taking action than the factor of image. It was found that tradition and change were related when a change behavior was perceived to be similar to a traditional behavior. In communities where there was a greater consciousness of the relationship of traditional habits to a recommended behavior change, a readiness to respond existed. The consciousness of the relationship of traditional habits to change behavior created an environment conducive to change. On the other hand, where community members more readily associated their change experiences with occasional customs, they were less likely to seriously take action on the recommended change.

The association with one factor or another is not something that can be mandated. The fact of telling people to be conscious of traditional habits does not necessarily result in heightened consciousness. The association with one factor over another is a characteristic of a community.

Learning Sources

The researcher identified a difference among the communities in reference to preferred learning sources. Two aspects of learning sources were considered. One aspect refers to learning sources that encourage taking action. The second aspect refers to learning sources that inhibit taking action.

Learning sources that encourage taking action. It was found that some learning sources were associated with taking action on that knowledge. The issue of taking action was not only a matter of having information but one of obtaining information from a learning source that was conducive to taking action.

In the study, the greater the identification with another person, the greater the likelihood was that people would take action on what they knew. Furthermore, if the other person had earned the right to be heard, people were even more likely to take action on what they had learned. In contrast, where people simply acknowledged themselves as the learning source, because of the scientific fact that washing hands kills bacteria, people were less likely to take action on that knowledge. The identification of another person as a source of authoritative information was more conducive to taking action than personally being convinced of the facts.

This implication challenges the social science models of change that focus on getting individuals to make a personal commitment to change. The findings in the study indicated that factors of relationships were more important than rational decision making.

As in the previous conclusion, the relationship of learning sources to application of learning is complicated by the fact that people in communities respond to different learning sources. In some communities, people identify more with another person as their learning source, while other people identify more with facts. Who or what

people identify with is not something that can be dictated by an educational strategy.

Learning sources that discourage taking action. The researcher also found that a difference existed in the recognition of the source of responsibility for not taking action. Where community members diffused the responsibility to conditions beyond themselves, they were less likely to respond to change opportunities. In contrast, where community members were conscious of their own responsibility for not acting on what they knew, that consciousness served as a source for overcoming obstacles to washing hands. In communities where people recognized their own lack of conviction as the reason for not washing, they were more likely to respond to change opportunities. A consciousness of personal responsibility is a factor in community members' responsiveness to educational interventions.

Learning Interaction

The researcher identified a difference among the communities in reference to the preferred mode of interaction with leaders. Two modes of interaction predominated: a mutual-exchange mode based on visits and interaction in a telling/teaching mode. In general, the greater the association with the mode of mutual exchange, a greater likelihood existed for taking action.

In contrast, a preference for a teaching mode is not necessarily indicative of taking action. The fact that people may enjoy and learn a lot from a telling/teaching mode does not necessarily mean that people will act on what they have learned. The fact of people

preferring a teaching mode of interaction is not as conducive to taking action as when people prefer a more personal mode. However, the equation is complicated by the fact that in the study some communities more readily identified with a teaching mode rather than a mutual-exchange mode.

Curriculum Implications and Recommendations

Two general implications were drawn from the conclusions of the study. Following the general statements, the more specific implications are drawn.

1. The technically most appropriate educational strategy may not be the most appropriate for every situation. To adapt to the nature of the community, educators may need to use educational strategies that community members relate to most readily, rather than what the educator thinks is technically most appropriate.

2. Educators can encourage growth toward factors that are associated with taking action. Knowing where the community is and where it can go, educators can encourage growth toward an identification with factors that are conducive to taking action.

The preceding general implications are discussed in more detail below. Specific curriculum implications are drawn regarding the learning environment, the source of learning, and learning interactions.

1. Educators cannot assume that an informal setting is the best learning environment. The researcher found that some communities

identified most with a more formal environment. The findings have important implications for curriculum in development education. In some communities people believe that important learning takes place in a formal setting.

The dilemma for educators is that the identification with formal learning settings is not as conducive to people taking action. Where people identify with formal learning settings, educators need to provide experiences that help to bridge the identification between formal and informal settings. For example, educators can simulate informal settings in classroom settings. The simulation should then be followed up with reflections on the positive and negative aspects of each setting.

As community members progress in their experience, they will move toward identifying with learning environments that are more conducive to taking action.

2. The researcher found that people grouped in communities have a natural change process. As Tough (1982) found in his research on intentional change, the natural change process is an internal dynamic. Educators need to accept the fact that people in some communities naturally identify with learning environments that are not conducive to taking action. In some cases, educators need to adopt a posture of waiting until people are ready to take action. Educators need to recognize that they cannot force people to identify with

certain learning environments. Whatever learning environment people identify with is a natural choice that is not controlled by educational interventions.

The task for educators is to stand alongside community members as they move through phases of identification with internal change factors. An active waiting posture that educators can take is to facilitate brief and concrete learning experiences on any topic of interest. The brief learning experiences can provide a basis for reflection on the learning process. As people learn about themselves, they have an opportunity to identify with factors conducive to taking action.

3. Needs assessment involves more than numbering and prioritizing problems. Cross (1982) pointed out that traditional needs assessments do not adequately discover the characteristics of people as learners. The researcher recommends that needs assessments among people in traditional societies need to identify the relationship between taking action, and people's perception of learning environments, sources of authority, and modes of interaction.

If educators find that people do not apply what they have learned, they can inquire into the learning environments and sources of authority associated with learning. Educators can compare responses among communities in order to understand the differences in people's perceptions. Educators can then adapt their interventions to fit people's perceptions.

4. Planning to build relationships is an alternative to simply planning more content. Facts are not necessarily the most important part of learning. The researcher recommends that in traditional societies educators need to include in their planning ways to build relationships, as well as planning ways to interact with information. In the study, that which was most conducive to taking action was people's identification with a person with earned authority rather than personal acceptance of the facts.

This recommendation has profound implications for the way educators traditionally plan curricula. For many educators the focus on educational interventions is on helping people understand facts. For example, health educators will teach people about the chain of disease as a way to convince them about the importance of washing hands before eating. Instead, educators should place their priority on building relationships between facilitators and learners. A focus on learning facts should be subservient to building relationships.

The task for educators is to understand what sources of information community members relate to, and then encourage them as they grow in their relationships with earned sources. Encouraging the development of relationships is an alternative to promoting greater application through giving more content. If communities are "stuck" at the level of knowing content but not doing anything about what they know, educators can look for ways to nurture relationships. For example, recognition of people through certificates and awards is highly valued in some traditional societies. Educators can strengthen

people's identification with community educators who have earned authority by giving them special recognition.

5. The difference in community members' responses to educational interventions is not necessarily a function of quality teaching. The study found a difference in people's response to the mode of teacher-learner interaction. Kidd (1973) wrote that a participatory teacher-learner interaction is the most effective. For Kidd, quality teaching is a matter of promoting learner participation. A discovery made in the study is that people's perception of a valued teacher-learner interaction affected their response to participatory methods. Given the opportunity, people did not necessarily identify with a participatory mode of interaction. For example, in some of the communities people did not identify with the factor of visits, even though they had equal opportunity to do so. Participatory methods are not necessarily the most appropriate in every situation.

A curriculum issue for educators is to adapt their strategy for interaction to the preferred mode of the community, while encouraging community members to identify with a mode that is conducive to taking action.

Participatory teacher-learner interaction is important, but it needs to be considered in the context of factors that affect community response. Simply improving the quality of interaction in communities that do not readily respond will not necessarily result in people taking action. Educators need to be sensitive to the fact that in some

communities people are more responsive to a telling/teaching mode, whereas in others people are more responsive to a mutual-exchange mode.

The researcher recommends that educators be ready for both modes of interaction in communities that do not readily respond. A telling/teaching mode can be useful in circulating information. Meanwhile, educators can encourage and be prepared for the time when community members are more responsive to a mutual-exchange mode.

Limitations of the Conclusions

An exploratory type of research was used in the study. The findings from exploratory research need to be subjected to comparative studies and to experimentation in order to further refine the understanding of the phenomenon of taking action on what has been learned in a development education setting.

The conclusions from the study must be interpreted in light of the fact that the research was conducted among people from a traditional society. Their world view is different from that of people who are more influenced by scientific cause-and-effect relationships. The conclusions from the study will, however, provide a beginning point for testing the existence of the factors and the categories of factors that are associated with the way community members take action.

Further Research

A number of questions were raised in this study that need to be addressed in subsequent research.

1. What is the difference between group and individual factors? The factors in the study were assumed to be group factors on the basis of an aggregate of responses. Is there a group dynamic that causes community members to associate themselves with a factor, or is the group response an aggregate of individual responses? If the factors are an aggregate of individual responses, why do more people in one community identify with a particular factor than another? Assuming a normal distribution of people in the research communities, a researcher would expect to find proportional identification of factors that influence people's response. The researcher found a significant difference in the identification of factors related to the categories of Learning Settings, Sources of Authority, Leaders' Actions, and Obstacles. Thus an indication exists that a group dynamic influences the process of people acting on their own behalf.

2. Related to number 1 above, what are the differences between all those who wash their hands and all those who do not wash their hands before eating? Are the differences the same as those found in this study? If so, the differences found in this study would be due to an aggregate of individual differences and not differences in community-level factors. If, on the other hand, the factors that differentiate all hand washers from nonwashers are distinct from those found in this study, evidence could point to the factors in this study being associated to characteristics of people in groups.

3. Do the factors and categories of factors hold across traditional groups? For example, the researcher found that the factors

of informal, structured, and self-taught settings differentiated the research communities. Do the same factors differentiate communities in other traditional groups? Does the category of Learning Settings hold true in other community groups, while specific factors in the category vary? The possibility exists that communities differ in the identification of Learning Settings, but identify specific settings that are different from the ones identified in this study. The possibility also exists that in other traditional societies people do not differ at all in their identification of Learning Settings.

4. What other factors and categories of factors differentiate communities that readily act on what they have learned from those that do not? Are there factors related to history or leadership-selection patterns that differentiate communities? The possibility exists that a traditional society's relationship to variables of modernity and distance to trade centers affect a society's perception of their experience. Data are needed from a broader population base in order to obtain an understanding of the range of factors that differentiate traditional communities.

5. Do communities pass through phases in identifying with factors that have increasing influence on people taking action? In the study, evidence existed of a movement of responses through factors of Learning Settings and factors of Sources of Authority. In the communities where the lowest percentage of people washed their hands, people identified most with factors of self-taught settings and personal source of authority. In the communities with the middle range

of percentages of hand washers, people identified most with factors of structured settings and ascribed sources of authority. In the communities where the highest percentage of people washed their hands, people identified most with informal settings and earned sources of authority.

Subsequently, when people were probed about their answers, their responses in the three groups of communities shifted from identifying self-taught settings to identifying most with structured settings and most frequently with informal settings. Similarly, the pattern of responses shifted in reference to Sources of Authority. People's responses shifted from identifying with personal authority to identifying with ascribed authority and most frequently with earned authority.

The evidence of a patterned shift of response suggests the possibility of stages in the transition from knowing about something to acting on that knowledge. The possibility of stages, however, presents the same problem that Zaltman and Duncan (1977) found with their model of adoption. People do not necessarily make decisions in a structured, linear manner. Linear models do not easily allow for extraneous variables and for the creative force of human nature. Nevertheless, evidence of a pattern of response existed in the study. More research is needed in order to know if community groups pass through stages in the transition from knowing about something to taking action on what they have learned.

APPENDICES

APPENDIX A

PREVENTIVE HEALTH BEHAVIORS PRACTICED IN RESEARCH COMMUNITIES

Following is a list of the preventive health behaviors being practiced in the research communities. From this list, the Health Promoters selected the behavior of washing hands before eating.

Boiling water
Using latrines
Corralling guinea pigs
Keeping chickens out of the house
Sweeping the house daily
Washing fruits and vegetables before eating
Growing family gardens
Eating fruits and vegetables daily
Brushing teeth daily
Washing clothes once a week
Bathing once a week
Monitoring women's pregnancy
Wiping breasts before breast feeding
Breast feeding infants
Burying garbage
Clorinating drinking water
Vaccinating children under five years old
Giving oral rehydration to children
Covering food on the shelf
Covering dishes on the shelf

APPENDIX B

RECONNAISSANCE INSTRUMENT

(Translated from Spanish)

Reconnaissance Guide

Date_____

A. IDENTIFICATION

1. Community name _____

   Sector _____

   County _____

   Province _____

2. Local organizations: grade 1 _____

   grade 2 _____

3. Number of informants present _____

B. PROMOTION OF PREVENTIVE HEALTH BEHAVIORS

1.1 Does the promoter give health talks weekly? Yes___ No___

1.2 Does the promoter visit homes monthly? Yes___ No___

1.3 What are the preventive health behaviors most frequently promoted in the community?

1._____	6._____
2._____	7._____
3._____	8._____
4._____	9._____
5._____	10._____

C. PREVENTIVE HEALTH BEHAVIORS PRACTICED IN THE COMMUNITY

1. What are the most frequently practiced health behaviors in the community?

1._____ 6._____

2._____ 7._____

3._____ 8._____

4._____ 9._____

5._____ 10._____

APPENDIX C

PROTOCOL USED IN THE FIELD TEST

(Translated from Spanish)

Data-Gathering Protocol
6 August 1984

1. Upon arrival, set up the meeting room for small group interaction.

2. With the health promoter, select 10 small group recorders. Train the recorders.

3. Show a film comparing a family with a clean living environment and a family with a dirty living environment.

4. Discuss the film. At the end of the discussion, ask people why some people keep their living environments clean while others do not.

5. Introduce the nominal group process and explain the purpose of the process.

6. Divide the participants into groups of 5-8 people. Group the parents together in small groups. Group the young people together in separate small groups. Then subdivide the groups into groups where people wash their hands before eating and groups where people do not wash their hands before eating.

7. Assign one of the previously trained recorders to each small group.

8. Have the recorders reorient their groups to the process.

9. The recorders ask <u>each person</u> to think about the answer to the following question:

   What things helped to convince you to wash your hands before eating?

   For those who do not wash their hands, ask:

   Why are you not convinced about the value of washing your hands before eating?

10. Each person shares his or her answer. The recorder writes the answers on the Data Recording Form.

11. The recorder asks group members to elaborate further by asking the following question:

What past experiences or traditions helped to convince you to wash your hands before eating?

For those who do not wash their hands, ask:

What past experiences or traditions have influenced you to not wash your hands before eating?

12. Each person shares his or her answer. The recorder writes the answers on the Data Recording Form.

13. Break for refreshment.

14. The recorder asks group members to elaborate further by asking the following question:

What things have leaders done that helped convince you to wash your hands before eating?

For those who do not wash their hands, ask:

What things have leaders done that discouraged you from washing your hands before eating?

15. Each person shares his or her answer. The recorder writes the answers on the Data Recording Form.

16. The recorder asks group members to elaborate further by asking the following question:

What about your first experiences in washing hands, how did you feel about using soap and water to wash before eating?

For those who do not wash their hands, ask:

What experiences have you had with washing your hands before eating? Tell me about them.

17. When the small groups are finished answering the questions, thank the participants for their cooperation. Let them know that their thoughts will help us do a better job of training the Health Promoters. Also let them know that they will receive a written report on the research findings.

APPENDIX D

HAND WASHING VERIFICATION INSTRUMENT

(Translated from Spanish)

VERIFICATION OF HAND WASHING AND
LATRINE USAGE

1. Community _____

2. House number_____

3. Does the house have a latrine? yes___ no___

   A. If there is a latrine, please inspect for:

      a. Is there a path to the latrine? yes___ no___

      b. Is there a smell? yes___ no___

      c. Does the floor have foot prints? yes___ no___

4. Do the adults wash their hands before eating? yes___ no___

   A. If so, please confirm by:

      a. Is there a wash basin and soap? yes___ no___

      b. Is the wash basin wet? yes___ no___

      c. Are the adults' hands clean? yes___ no___

5. Name of the Health Promoter _____

APPENDIX E

EQUIPMENT FOR DATA GATHERING

LIST OF EQUIPMENT

Data Recording Forms

Film projector

Films

Extension cords and light fixtures

Portable generating plant

Pens for group recorders

Electrical tape and pliers for making repairs

Newsprint sheets and marking pens

Bread, coffee, and sugar for refreshments

APPENDIX F

DATA-GATHERING PROTOCOL

(Translated from Spanish)

GUIDE FOR DATA COLLECTION

1. Arrive at the community and arrange the meeting room for small group exchange.

2. Select a minimum of ten group recorders from the community. Enlist the aid of the health promoters and the community president. The recorders should know how to read and write. Train the group recorders.

3. Show a film to introduce the theme of the data collection. The film compares a family in a clean living environment with a family in a dirty living environment.

4. Discuss the film, especially taking into consideration the things that encourage people to adopt preventive behaviors and the things that discourage people from adopting preventive behaviors.

5. Introduce the process for data collection in the following way:

   We want to analyze the following question: Why do some people act on their own behalf to protect their health while other people do not? For this analysis we want to study more in depth the action of washing hands before eating. Together we want to analyze two things. We want to know what things have encouraged you to wash your hands before eating and what things have discouraged you from washing your hands before eating. We want to have everyone's opinion. Everyone's opinion is valid. We are going to divide you in small groups so that everyone has the opportunity to contribute their observations and experiences.

6. Divide the participants into small groups. Ask them to join in groups of five to eight people. In the groups we want the adults to be grouped together and the young people to be in separate groups.

7. Assign a group recorder to each of the small groups.

8. The group recorders should orient their groups in the data-collection process. The data-collection process is as follows:

   A. Each person thinks for a minute about the question asked by the group recorder.

   B. Each person shares their answer and the group recorder writes the key words and phrases of the people's answer.

C. After everyone has shared their answers, the group has an opportunity to further discuss the question and clarify their answers.

D. The group prioritizes their answers, coming to an agreement on which is the most important answer.

9. The group recorder asks the first question:

   What made you decide to wash your hands before eating?

10. Each person shares their answer to the question. The group recorder writes each one's answer on the data-recording form.

11. The small group members are free to talk about the question with each other after they have given their answers.

12. From the list of answers, the small group selects the answer that is most important. After selecting the most important answer, the small group are asked to think further on how this answer has encouraged them to wash their hands before eating. The small group recorder asks the following question:

   Why has your answer encouraged you to wash your hands before eating?

The process for answering the question is the same as in number 8.

13. The small group recorder asks the third question:

   What things have leaders done to encourage you to wash your hands before eating?

The process for answering the question is the same as in the previous question.

14. The group recorder asks the fourth question:

   What customs or traditions are there in the community that encourage you to wash your hands before eating?

The process for answering this question is the same as in the previous question.

15. The small group recorder asks the fifth question:

    What obstacles are there to washing your hands before eating?

The process for answering the question is the same as in the previous question.

16. As the small groups finish answering all the questions, invite them to have some coffee and rolls.

17. Thank the participants for their excellent collaboration. Let them know that the information they gave will be used to help the health promoters do a better job. Also, let them know that as soon as the data are analyzed and written, they will receive a written summary of the report.

APPENDIX G

DATA RECORDING FORM

IMA NISHPATAJ MAQUI MAILLANA YUYAITA JAPIR CANGUI?

COMUNIDAD:
GRUPO:

Ficha Mnemotécnica No.

APPENDIX H

CATEGORIES, FACTORS, AND STATEMENTS

Response to Question 1: Learning Settings

	Group 1	Group 2	Group 3
STRUCTURED LEARNING			
--Community meetings	42	12	20
--Health courses	3	9	9
--Teaching sessions	9	7	4
--School	0	1	0
TOTALS:	55	29	33
INFORMAL EXCHANGE			
--At home	4	6	5
--Demonstrations	1	5	0
--Visits	1	1	4
--While helping out	0	1	1
--Encouragement	0	1	1
TOTALS:	6	14	11
MEDIA			
--Radio	11	10	23
--Films	2	5	1
TOTALS:	13	15	24
SEEING OTHERS			
--Outside the community	3	5	11
--With clean hands	11	2	4
--Visiting	1	0	5
--Fear criticism	0	1	0
--Example of promoter	0	1	0
TOTALS:	15	9	19

	Group 1	Group 2	Group 3
SELF-TAUGHT			
--From religious conviction	3	0	2
--From own conscience	8	1	0
--From wanting to be clean	1	1	0
--From washing before writing	0	0	2
--So that avoid illness	6	3	14
--In order to live better	3	0	0
--From washing before eating	5	0	3
--Learned on my own	11	5	27
--In order to avoid germs	1	0	0
--In order to live healthy	1	0	26
--From habit	1	0	0
--From washing after work	1	0	0
TOTALS:	41	10	74

Response to Question 1: Source of Authority

	Group 1	Group 2	Group 3
EARNED AUTHORITY			
--Promoter	43	20	30
--Those who first learned	3	2	0
--Leaders	4	2	0
--Dr. Naula	1	0	1
--Courses	1	0	0
--Literacy teacher	0	1	0
--Parents	3	6	5
--Husband	0	1	1
TOTALS:	55	32	37
ASCRIBED AUTHORITY			
--School teachers	3	8	1
--Health center staff	1	0	1
--Whites	3	5	4
--Film	2	5	1
--Radio	11	10	24
--You	1	0	0
--Health professionals	0	4	4
--Critics	0	1	0
--Others	0	0	9
TOTALS:	21	33	44
PERSONAL AUTHORITY			
I decided...	54	12	80

Response to Question 2: Learning Settings

	Group 1	Group 2	Group 3
STRUCTURED LEARNING			
--Community meetings	47	40	35
--Health courses	4	2	7
--Teaching sessions	3	8	1
--School	0	1	0
TOTALS:	54	51	43
INFORMAL EXCHANGE			
--White parents	1	1	3
--During demonstrations	12	2	2
--During visits	37	8	17
--Conversations	3	0	0
--During medical treatments	2	0	0
--Conversations in the fields	2	0	7
--Conversations on the trail	1	0	0
--During dialogues	0	1	0
--While helping out	0	1	0
--Because of dramas	0	0	1
TOTALS:	58	13	30
MEDIA			
--Radio	2	6	44
--Films	1	1	0
TOTALS:	3	7	44
SEEING OTHERS			
--Outside the community	0	0	8
--Others	1	0	0
--Example of promoter	0	0	3
TOTALS:	1	0	11

	Group 1	Group 2	Group 3
SELF-TAUGHT			
--From our consciousness	0	1	0
--From wanting to be clean	0	2	0
--In order to avoid illness	0	1	0
--In order to live better	2	4	0
--Learned on my own	6	0	0
--In order to avoid germs	0	1	0
--In order to live healthy	0	0	8
--Seeing that it was good	1	0	0
--To be an example to children	0	1	0
TOTALS:	9	10	8
NO ONE TAUGHT	0	3	0
PROMOTER DOES NOT HELP	8	0	0

Response to Question 2: Source of Authority

	Group 1	Group 2	Group 3
EARNED AUTHORITY			
--Promoter	104	52	63
--Parents	1	1	3
--Those who first learned	2	0	0
--Dr. Naula	4	2	6
--Literacy teacher	0	1	0
TOTALS:	111	56	72
ASCRIBED AUTHORITY			
--Media	3	7	44
--Others	1	0	0
--School teachers	1	8	1
--Whites	0	0	8
TOTALS:	5	15	53
PERSONAL AUTHORITY			
--On my own	6	1	5
--Avoid illness	0	2	0
--To live better	3	4	8
--So that there is no dirt	0	2	0
--To be example to children	0	1	0
TOTALS:	9	10	13

Response to Question 3: On Leaders

	Group 1	Group 2	Group 3
LOCAL LEADERS: NO TRAINING			
--President of PTA teaches	0	1	0
--President of PTA organizes	0	3	0
--Church leaders teach	12	3	6
--Church leaders visit	2	0	0
--Council members teach	8	6	26
--Council members organize	0	3	2
--Sports president teaches	0	1	0
--Water committee teaches	0	3	0
--Light committee organizes	0	1	0
--Parents set an example	1	0	0
--On my own	1	0	7
--Council members set an example	0	0	11
--Church leaders set an example	8	0	0
TOTALS:	32	21	52
LOCAL LEADERS: FORMAL TRAINING			
--Promoter teaches	7	8	32
--Promoter visits	25	4	17
--Promoter organizes	1	0	0
--Promoter sets an example	6	4	4
--Project administrators teach	5	1	4
--Project administrators visit	2	0	0
--Extension agent teaches	0	1	0
--Water technician teaches	0	1	0
--Literacy teacher teaches	6	5	11
--Literacy teacher visits	0	0	1
--Catequist teaches	0	4	0
--Sewing project leader teaches	0	1	0
--PHC auxiliary teaches	2	0	0
--PHC auxiliary visits	1	0	0
--Radio announcer teaches	2	0	0
TOTALS:	57	29	69

	Group 1	Group 2	Group 3
EXTERNAL LEADERS			
--School teachers teach	13	4	8
--School teachers organize	1	0	0
--Whites set example	1	0	2
--Priest teaches	0	1	0
--MCH nurse teaches	1	4	1
--Nuns teach	0	0	1
--School teachers visit	0	0	4
--School teachers set an example	0	0	1
TOTALS:	16	9	17
NO ONE HELPS	18	11	4

Response to Question 4: On Customs

	Group 1	Group 2	Group 3
TRADITIONS			
--Upon arriving home	0	1	0
--Having habits	1	1	0
--Community Council tells us to	0	9	1
--To read books, Bible, etc.	5	17	
--Because of piped water	0	4	0
--After work	36	5	22
--To be single	0	1	0
--After sports	4	1	5
--Any reason	3	0	1
--To milk cows	0	0	1
--To knit	11	3	3
--To shake hands	0	2	0
--Before feeding others	2	0	0
--Carrying water	4	0	0
--Washing clothes	1	4	0
--Communal work	0	0	3
TOTALS:	67	32	43
IMAGE			
--Entering an office	0	1	0
--Going to church	2	8	20
--Teaching	0	1	0
--Going somewhere	5	5	3
--Going to school	0	0	4
--Going to town	9	7	26
--Going to meetings	7	3	4
--Watching the rest	1	0	1
--To wear clean clothing	0	3	6
--To go to festivals	0	5	6
--To avoid criticism	0	3	0
TOTALS:	24	36	70

	Group 1	Group 2	Group 3
CONSCIOUSNESS OF HEALTH			
--Before eating	14	4	14
--Before sleeping	2	0	0
--When cooking	9	1	21
--After using latrine	2	0	2
--To be clean	3	2	8
--To breastfeed	0	0	1
--When awakening	1	1	1
--When brushing teeth	0	0	1
--Bathing	1	0	0
--Baking bread	0	1	0
--Washing dishes	1	0	0
--After gathering animals	0	2	0
TOTALS:	33	11	48

Response to Question 5: On Obstacles

	Group 1	Group 2	Group 3
LACK OF COMMITMENT			
--Forgetting	23	11	11
--Lack of habit	6	1	0
--Laziness	30	15	22
--Lack of knowledge	0	0	1
--Lack of time	0	0	4
--Lack of education	4	2	1
--Lack of soap	0	0	2
--Having to care for livestock	1	0	0
TOTALS:	64	29	41
PHYSICAL CONDITIONS			
--In a hurry	15	6	23
--Too tired	1	6	6
--Children in the way	1	0	0
--Water too cold	14	11	22
--Young children, too time consuming	0	2	0
--Too busy	0	1	0
TOTALS:	31	26	51
EXTERNAL FACTORS			
--Lack of water	18	12	42
--People hoard water	0	2	0
--Water too dirty	0	0	2
--Water too distant	0	1	0
TOTALS:	18	15	44
BELIEFS			
--Water aggravates illness	9	4	14
--Can't during menstruation	0	1	0
--Fear of cold water	0	0	1
--Elder says it's bad	0	0	1
--	1	0	0
--Too old to wash	1	1	0
--No wife to care for me	1	0	0
TOTALS:	12	6	16

APPENDIX I

DATA FREQUENCIES AND PERCENTAGES

Frequencies and Percentages of Responses to Question 1:
Learning Settings

		Group 1	Group 2	Group 3
Structural Learning:	Freq.	55	29	33
	Percent	42%	38%	20%
Informal Exchange:	Freq.	6	14	11
	Percent	5%	18%	7%
Media:	Freq.	13	15	24
	Percent	10%	19%	15%
Example of Others:	Freq.	15	9	19
	Percent	12%	12%	12%
Self-Taught:	Freq.	41	10	74
	Percent	32%	13%	46%
TOTAL RESPONSES:		130	77	161

Frequencies and Percentages of Responses to Question 1:
Source of Authority

		Group 1	Group 2	Group 3
Earned Authority:	Freq.	55	32	37
	Percent	42%	42%	23%
Ascribed Authority:	Freq.	21	33	44
	Percent	16%	43%	27%
Personal Authority:	Freq.	54	12	80
	Percent	41%	16%	50%
TOTAL RESPONSES:		130	77	161

Frequencies and Percentages of Responses to Question 2:
Learning Settings

		Group 1	Group 2	Group 3
Structured Learning:	Freq.	54	51	43
	Percent	41%	61%	32%
Informal Exchange:	Freq.	58	13	30
	Percent	44%	15%	22%
Media:	Freq.	3	7	44
	Percent	2%	8%	32%
Example of Others:	Freq.	1	0	11
	Percent	1%		8%
Self-Taught:	Freq.	9	10	8
	Percent	7%	12%	6%
No One Taught:	Freq.	0	3	0
	Percent		4%	
Promoter Does Not Help	Freq.	8	0	0
	Percent	6%		
TOTAL RESPONSES:		133	84	136

Frequencies and Percentages of Responses to Question 2:
Source of Authority

		Group 1	Group 2	Group 3
Earned Authority:	Freq.	111	56	70
	Percent	83%	67%	51%
Ascribed Authority:	Freq.	5	15	53
	Percent	4%	18%	39%
Personal Authority:	Freq.	9	10	13
	Percent	7%	12%	10%
No One Taught:	Freq.	0	3	0
	Percent		4%	
Promoter Does Not Help	Freq.	8	0	0
	Percent	6%	4%	
TOTAL RESPONSES:		133	84	136

Frequencies and Percentages of Responses to Question 3:
Leaders

		Group 1	Group 2	Group 3
Local Leaders: No Training				
Talks:	Freq.	20	14	32
	Percent	63%	67%	62%
Visit:	Freq.	2	0	0
	Percent	6%	0%	0%
Organize:	Freq.	0	7	2
	Percent		33%	4%
Model:	Freq.	10	0	18
	Percent	31%		35%
TOTALS:		32	21	52

		Group 1	Group 2	Group 3
Local Leaders: Formal Training				
Talks:	Freq.	22	21	47
	Percent	39%	72%	68%
Visit:	Freq.	28	4	18
	Percent	49%	14%	26%
Organize:	Freq.	1	0	0
	Percent	2%		
Model:	Freq.	6	4	4
	Percent	11%	14%	6%
TOTALS:		57	29	69
Promoter				
Talks:	Freq.	7	8	20
	Percent	18%	50%	60%
Visit:	Freq.	25	4	16
	Percent	64%	25%	32%
Organizer:	Freq.	1	0	0
	Percent	3%		
Model:	Freq.	6	4	4
	Percent	15%	25%	8%
TOTALS:		39	16	50

		Group 1	Group 2	Group 3
External leaders				
Teach:	Freq.	14	9	10
	Percent	88%	100%	59%
Visit:	Freq.	0	0	4
	Percent			24%
Organize:	Freq.	1	0	0
	Percent	6%		
Model:	Freq.	1	0	3
	Percent	6%		18%
TOTALS:		16	9	17
NO ONE HELPS:	Freq.	20	11	4
	Percent of Total	19%	19%	3%
		105	59	138

Frequencies and Percentages of Responses to Question 4: Customs

		Group 1	Group 2	Group 3
Traditions:	Freq.	67	32	43
	Percent	54%	41%	27%
Consciousness of Health:	Freq.	33	11	48
	Percent	27%	14%	30%
Image:	Freq.	24	36	70
	Percent	19%	46%	43%
TOTALS:		124	79	161

Frequencies and Percentages of Responses to Question 5:
Obstacles

		Group 1	Group 2	Group 3
Lack of Commitment:	Freq.	64	29	41
	Percent	51%	38%	27%
Physical Conditions:	Freq.	31	26	51
	Percent	25%	34%	34%
External Factors:	Freq.	18	15	44
	Percent	14%	20%	29%
Beliefs:	Freq.	12	6	16
	Percent	10%	8%	11%
TOTALS:		125	76	152

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