

Determining Community Attitudes and Preferences for Programs and Services

Planning programs may fail to accomplish their goals and objectives because they do not meet the needs of the population for which they are designed. Planners may be of different socioeconomic, regional, or ethnic backgrounds from those for whom they plan. They may perceive and evaluate important aspects of the environment differently from their clients. For these reasons, individuals who will be living and working in the environment to be designed or modified by planners should be encouraged to provide input into the development of plans which will affect their activities and enterprises. A means of assessing needs and values of the community ought to be incorporated into planning projects.

Such an assessment requires the allocation of scarce resources at the beginning of a project. However, the advantages of designing projects appropriate for the people they are intended to benefit will, in the long run, outweigh greater research costs by decreasing the number of programs which are ill-designed because they did not consider the needs of the community. There are a number of ways to incorporate citizen participation into a planning project. This paper discusses one methodology, Heuristic Elicitation, in which the needs, goals, and values of a community are studied in such a way as to provide information for planners to use in designing programs and projects. It is not a direct form of citizen participation since citizens do not interact directly with planners. It may, however, be preferable to direct participation in that the community as a whole is considered through the use of survey techniques which carefully sample a population to insure representation of all its members.

Through use of the methodology, we seek to determine "culturally appropriate" designs and plans; that is, to help discover the compatibility of an introduced element with the socio-cultural patterns, goals, values, and circumstances characteristic of the population to which the new element will be available. Heuristic Elicitation utilizes a two-stage survey design which incorporates both open-ended interviews in which respondents can freely and openly discuss their ideas and concerns, and

structured interviews which provide the statistical information necessary for planning efforts.

The first stage of the methodology concentrates on defining the problems, interests, and needs of a community through intensively interviewing a small number of individuals who talk at length about the problem of interest. From this stage, planners can learn how clients think about environmental changes which will affect them, what aspects of the problem are important to them, and how they discuss these problems. Once these concerns have been identified, a more structured questionnaire is developed using what has been learned in the open-ended interviews. The structured questionnaire is necessary for gathering the quantitative data for statistical analysis of the distribution of attitudes throughout the population.

In this article we discuss the methodology and present the findings of two studies where it has been utilized. One study, concerning health planning in North Carolina, reveals attitudes toward sources of birth control methods and sources of information about birth control methods. In the other, the design preferences of the Navajo community in Ramah, New Mexico, aid the architects of a new school/community center to design a culturally appropriate structure.

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Figure 1

Heuristic Elicitation Methodology

	<u>Stage I</u>	<u>Stage II</u>	
Instrument	Domain Definition	Beliefs Elicitation	Preference Rankings
Type of Data	Qualitative	Quantitative	Quantitative
Brief Description	Open-ended interviews in which respondents answer a series of interlinked questions which are recorded verbatim to preserve the language and conceptualizations of the respondents.	Structured interviews in which respondents answer yes or no to questions reflecting aspects of the problem of interest expressed in the concept elicitation.	Structured interviews in which respondents rank order, on the basis of their own preferences, items and attributes in the domain of interest.
Type of Data Analysis	Content Analysis	Statistical techniques from frequencies and distributions to multi-dimensional scaling and hierarchical clustering (the latter are optional)	Mean rankings, tests of significance for subgroup differences

The Elicitation Methodology

The Heuristic Elicitation Methodology has been developed to assess the knowledge, beliefs, attitudes, and preferences of a group of people through use of series of interlinked questions in which responses to one question determine the form of subsequent questions. This methodology is useful for a wide range of problems. It has been used to determine perceptions of the role of parents in a federally funded child development program (Harding and Johnson 1971), to study the development of strategies for facilitating the growth of small new businesses in low income areas (Steffle 1969), to design a program of health services in American Samoa (Harding, Clement, and Lammers 1972; Clement 1974), and to develop guidelines for urban planning in Santa Clara County, California (Harding, Lammers, and Clement 1972). The methodology is represented schematically in Figure 1.

Three data collection instruments are utilized. Following is a description of these components of the methodology: the domain definition, beliefs elicitation, and preference rankings.

Domain Definition

The domain definition is a technique in which a relatively small number of respondents are systematically questioned about a particular area of interest (or domain) in order to provide a basis for further investigation of the various elements in that domain. Respondents are asked to discuss a problem and its constituent parts in the open-ended manner described above. The questions which are asked first identify the items in the domain. Subsequent questions determine the attributes of each item in the domain. The questioning helps the investigator discover as many different items in the domain of interest (for example, kinds of housing) and their attributes (i.e., dimensions, features, traits, characteristics) as possible. The responses to these questions are recorded verbatim to discover the language and concepts used by the community to talk about the particular

area of interest. The description of the domain in the respondents' own words is important since professionals may use different words and concepts than the community. Information from the domain definition is useful for:

1. developing the structured questionnaires used in the second phase of the study by utilizing language and concepts appropriate to the community; and
2. providing a basis for informed communication between planners and the community.

To illustrate the nature and format of questions used in the domain definition, a set of questions used in the study of sources of birth control methods and information is presented below. The questions for the domain of sources of methods were as follows:

- Q1. What are the different places where people get birth control methods?
PROBE What other places are there where people get birth control methods?
- Q2. What methods do people get from "X"? (X refers to each source of methods elicited in the previous question.)
PROBE What other methods do people get from "X"?
- Q3. Who would get birth control methods from "X"?
PROBE Who else would get birth control methods from "X"?
- Q4. What's good about getting birth control methods from "X"?
PROBE What else is good about getting birth control methods from "X"?
- Q5. What's bad about getting birth control methods from "X"?
PROBE What else is bad about getting birth control methods from "X"?

In this set of questions, the initial question generated sources of methods, the second asked what methods could be obtained from each source, the third who would get methods from each source, and the fourth and fifth questions asked for positive and negative attributes associated with each source. Questions 2 - 5 are structured on the basis of the respondent's answers to question 1.

Previous experience (Steffle 1972; Harding 1973) suggests that a large sample is not necessary for the domain definition phase of the elicitation methodology since this kind of intensive interviewing is designed to exhaust a respondent's perceptions concerning the set of items being studied. Also, as more individuals are interviewed, the responses tend rapidly to become repetitive, particularly among members of a relatively homogeneous population. If care is taken to represent both sexes, different ages, economic levels and, where important, different ethnic groups (or other groups of special interest), the domain definition interviews reveal the range of items and attributes of a well-defined domain relatively quickly. The data from the domain definition are the basis for developing the structured questionnaires involved in the next phase of the research.

Beliefs Elicitation

In this phase of the research methodology, the actual distribution of belief (attitudes, perceptions) throughout the population is studied. Whereas the domain definition involves the discovery of the range of knowledge and attitudes about a particular domain as possessed by a given population, beliefs elicitation determines the extensiveness within the population about such knowledge and attitudes. It is assumed that there may be variability in the population concerning some aspects of the knowledge and attitudes relevant to a particular domain. This variability may be random, or it may correlate with a social role or socioeconomic status of individuals within the population.

Measuring the extensiveness of beliefs within the

population requires quantification. The beliefs instruments are therefore constructed so that they can be statistically analyzed. A structured questionnaire is developed using the responses from the open-ended domain definition interviews. Items mentioned most frequently by the community and items of special interest are selected from among all of those mentioned in the domain definition. The characteristics of the items most frequently mentioned in the domain definition are also selected. They are arranged in a matrix of items by attributes (see Figures 2 and 3) such that the two sets of items can be related utilizing standard questions. The respondents are asked to answer yes or no to each question formed by the matrix. For example:

Q1: Do you think that family doctors usually give you information you can trust? Yes or no?

Q2: Do you think that family doctors usually give you complete information? Yes or no?

To analyze the responses in the beliefs matrix, the individual scores for all matrix cells are added together to determine the number of yes responses. These aggregated frequencies form the basis for analyzing the extent of cultural agreement regarding the many relationships between items and attributes.

The quantitative procedures normally used to analyze the beliefs elicitation range from simple frequency counts and distributions for aggregated cells, rows, and columns to more complex statistical analyses such as multi-dimensional scaling and hierarchical clustering techniques. For most analyses, careful study of the frequencies and perhaps certain simple correlational analyses offer the researcher sufficient information upon which to base judgments concerning the design or modification of a program or project. Past experience with the beliefs elicitation indicates that the matrix data tend to stabilize with a sample of about fifty (Harding 1974).

Figure 2

Beliefs Matrix for Sources of Methods: Observed Frequencies
N = 206

	Is inexpensive or free	Makes you embarrassed	Speaks on your level	Gives individual attention	Takes a long time to go to	Gives information that suits	Has time for a person	Good for timid person	For low income people	If you worry about health	Source for the upper class	If you have health problems	Is cold or impersonal	A confidential source	A source for teens
Doctor	70	29	149	168	104	186	119	172	97	192	195	183	51	193	115
Fam. Plan.	187	35	184	167	86	170	150	129	194	118	100	93	51	175	154
Friends	163	65	183	154	19	47	157	118	136	49	93	37	53	61	159
Drugstores	87	55	133	102	27	104	53	74	114	91	130	80	98	133	141
Co. Health	193	49	170	133	79	161	106	128	203	133	91	122	85	171	172
Hospital	99	45	130	115	118	159	87	108	138	153	131	149	113	174	114
Col. Tot.	799	278	949	839	433	827	672	729	882	736	740	664	451	907	855
Col. %	7	3	9	8	4	8	7	7	8	7	7	6	4	8	8

Figure 3

Beliefs Matrix for Sources of Information: Observed Frequencies

N = 200

	Is inexpensive or free	Makes you embarrassed	Speaks on your level	Gives individual attention	Information you can trust	Takes a long time to go to	Makes you uncomfortable	Gives information that suits	Has time for a person	A scientific source	Good for timid person	For low income people	Gives complete information	If you worry about health	Source for the upper class	If you have health problems	Is cold or impersonal	A confidential source	A source for teens	Sound information and methods
Doctor	79	30	132	164	182	101	38	175	101	181	147	110	137	179	190	176	59	184	114	184
School	167	78	133	75	139	64	96	103	86	133	90	153	88	44	112	38	104	86	161	86
Magazines	149	25	116	24	81	15	7	51	42	121	160	135	40	46	123	37	109	101	169	82
Parents	176	84	131	174	148	45	92	130	168	52	124	148	69	76	132	54	34	146	103	64
Fam. Plan.	179	32	176	166	185	66	37	178	164	176	157	188	166	127	141	106	56	174	146	180
Friends	171	54	166	137	56	34	61	55	146	24	115	142	31	30	101	26	57	49	160	20
TV Ads	165	34	122	15	65	14	13	39	31	83	122	145	23	33	92	24	125	99	152	61
Drugstores	133	69	136	106	146	30	76	117	68	140	67	132	76	85	113	75	92	119	99	137
Co. Health	185	50	168	139	177	86	44	159	115	167	138	191	157	158	108	141	78	168	152	177
Hospital	114	55	126	126	179	101	68	153	95	178	118	146	151	167	143	163	102	166	114	177
Minister	177	74	144	176	153	43	73	124	180	57	134	159	73	97	130	84	30	173	58	65
Col. Tot.	1695	585	1545	1302	1511	599	605	1284	1195	1312	1372	1649	1011	1042	1385	924	846	1465	1428	1233
Col. %	7	2	6	5	6	2	3	5	5	5	6	7	4	4	6	4	4	6	6	5

Preference Rankings

The preference rankings determine preferences for domain items and attributes. The investigator selects the items and attributes most frequently mentioned in the domain definition and those of special interest to be included in the preference ranking.

The respondents are asked to rank order, on the basis of their own personal preference, the items and the attributes of the domain. The investigator is therefore able to discover which items are most and least preferred by a population, as well as which features of the items are preferred. Preference rankings allow for determination not only of which items are preferred by the majority of the population but also which are undesirable and should therefore be avoided.

The preference ranking analysis includes computation of the mean rank of each item. This is computed by summing the rankings of an item across all respondents and dividing by the number of respondents. The lower the mean rank the closer the item was to being ranked first, or most preferred. (See Figures 4 and 5.)

The aim of the methodology described above is to discover the distribution of knowledge, attitudes, and beliefs throughout a population using survey instruments developed to be sensitive to the needs for preserving and utilizing the specific language and ideas of the community of interest. This is seen as important for the design and implementation of programs and projects which will be culturally appropriate and therefore meet the needs of the people for whom they are designed.

Use of the Methodology in North Carolina

The North Carolina study was recently conducted by the authors at Policy Research and Planning Group with support from the National Institute of Child Health and

Human Development. The study concerns attitudes toward contraceptive methods and sources of methods and information. This article refers only to that portion of the study related to sources of contraceptive methods and information.

We were interested in finding out about the sources of birth control methods and sources of information about birth control methods which people in North Carolina know about and utilize. We were also interested in how people perceive and evaluate these sources. One of the purposes of the study was to provide data for the North Carolina State Family Planning Agency for designing new programs and modifying existing ones. The following paragraphs discuss the sources of methods and information familiar to the people in our sample, the attributes they perceived to be associated with each source, and their preferences for both sources and attributes. We suggest some policy recommendations for the State Family Planning Agency based on our analysis and interpretation of these data.

The data were collected in household surveys conducted in Guilford and Rockingham Counties. The age range of respondents was 18-55 for men and 18-50 for women. Care was taken to include respondents of both urban and rural areas, of all income levels, and both blacks and whites and males and females.

In the domain definition phase of the study, open-ended interviews were conducted to determine the sources of contraceptive methods and information which people knew about and the characteristics they associated with each source. A random sample of eighty-two respondents was used. Approximately half were questioned about sources of methods and half about sources of information. Respondents were asked to name all of the sources they could think of and then to discuss each source. They were asked who would use a source, what kinds of methods or information could be

Figure 4

Mean Ranks for Source Preferences

Source	Rank
Family Doctors	1.610
Family Planning Centers	3.133
Hospital Clinics	4.038
County Health Clinics	4.092
Drugstores	6.072
Parents	6.092
Schools	7.028
Preachers or Ministers	7.753
Friends or Neighbors	8.056
Magazines	8.521
TV ads	9.604

obtained from a source, and what was good and bad about each source.

The domain definition interviews generated the following list of sources of birth control methods, in order of times mentioned: doctor, health department, drugstore, machines (in gas stations, truckstops, etc.), hospitals, stores, friends, welfare, nurse, relatives, college dispensary, street, and black market. For the sample population, "doctor" meant the family doctor, not the gynecologist. This was apparent from the phrasings used. The various terms included physician, the family doctor, personal doctor, and the family physician. The health department referred to the county family planning clinic. Phrasings for this source included health clinic, clinic, social service, county health facility, and family planning clinic.

The sources of information about birth control methods elicited in the domain definition interviews, in order of times mentioned were: health department, doctor, schools, magazines, TV, reading, preacher, drugstore, relatives, hospitals, newspaper, friends, educational material, Planned Parenthood, and college dispensary. This domain is similar to the previous one of sources of methods, but includes some additional sources.

Analysis of the verbatim responses indicated that there are four basic criteria by which a source is evaluated:

1. the degree to which a source allows an individual to achieve the basic goals of obtaining birth control methods of good quality and/or complete, accurate, up-to-date information on sources and advice about which method is appropriate for the individual;
2. the availability of an authoritative, knowledgeable person to whom questions can be addressed;
3. the capacity of the source to provide the user with personal, individualized attention; and
4. the degree to which the source allows the individual to feel comfortable while utilizing the source, i.e., to avoid embarrassment and to maintain confidentiality and privacy.

For example, of all of the sources of birth control

methods, the family doctor was evaluated most positively by the majority of respondents. He was seen as the source most competent, scientific, and well-trained. Equally important is that he knows the client personally, provides individualized attention, is available to talk and answer questions, and gives a careful physical examination. Verbatim responses which suggest that the doctor helps the individual in the basic goals of obtaining methods and advice include:

"the doctor will give the right thing"; "you're getting the latest and most well-developed product"; "any persons who go to their doctor would get information even without asking"; "he can brief you on use and misuse and side effects"; "you could get what is best suited to your system—what is better for you to use."

The perceived competency, personal attention, and confidentiality of the doctor were expressed as:

"he's educated"; "people feel that doctors know best"; "you feel more safe with a doctor"; "doctor knows the body"; "definitely reliable"; "he knows you better"; "he usually examines the patient first"; "I think if you have questions you can always go back"; "the doctor knows more about you and your family"; "the doctor provides follow-up if you develop problems"; "he can be available to give you advice if the methods fails"; "he will explain a lot more"; "it's confidential."

The preference ranking task combined sources of methods and sources of information into one domain of sources and was completed by 608 respondents. Respondent preferences for sources, with the mean rank for each source, are presented in Figure 4. It can be seen that the "professional" sources are by far the most preferred, and that the family doctor is indisputably the number one source. The least preferred sources are those of the mass media, with parents, school, preacher and friends intermediate. Clearly respondents prefer knowledgeable, authoritative people with whom they can directly interact in learning about, choosing, and obtaining birth control.

Preferences for attributes of sources appear in Figure 5. They underscore the preference for medically-oriented sources, and sources with whom the individual may have a personal relationship. The most preferred attribute of a source was "gives medically sound methods or information," consistent with people's preferences for the family doctor and the family planning center. A source which gives methods and information of high quality and suited to the individual was next most preferred, followed closely by "usually gives you individualized attention." The least preferred attributes, "might be cold or impersonal" and "usually makes people feel embarrassed," are not unexpected since birth control is a very personal matter. These considerations were more important to the population sampled than cost and convenience.

The beliefs elicitation and preference rankings taken together can be analyzed to ascertain in a detailed way

what it is that people prefer or reject in a source. The sources of information matrix was completed by 200 respondents and the sources of methods matrix by 206 respondents.

The family doctor, the most preferred source, can be seen to be associated with the most preferred attributes of sources (see beliefs matrix, Figures 2 and 3). Nearly all respondents in the sample agreed that "he gives you medically sound information," and that "he gives you information and methods you can trust" and "methods that suit you best." The doctor is also most likely to give individualized attention. Of all the sources, the family doctor was least likely to make people feel embarrassed, or to be cold or impersonal.

The family planning center appeared second in the preference rankings, followed by hospital clinic and county health clinic (see Figure 4). These sources were also highly associated with the most preferred attributes and lacked the negative attributes, although the family planning center tended to be evaluated more positively overall than the other two.

Since the family planning center and the clinics were seen as sharing the same positive attributes of the family doctor and lacking the same negative attributes, we might ask why the family doctor was ranked highest. If we refer again to the beliefs matrix it can be seen that where the family doctor and the clinics most diverged was with respect to questions regarding income and social class. Less than half of the sample found the family doctor to be a source of methods or information for the low-income person. Most agreed that the doctor is a source for middle- or upper-class people. For the clinics, the situation was essentially reversed. Relatively few people considered the doctor to be an inexpensive source, while most thought that the clinics were inexpensive.

These findings suggest that the state family planning clinics are perceived as providing competent service of the same high quality as that provided by a doctor, but that they are stigmatized because they are associated with the low-income person. This interpretation is supported by what we learned during the domain definition.

Figure 5

Mean Ranks for Attributes of Sources

Attribute	Rank
A source of information or methods that:	
Gives medically sound information	2.964
Gives information you can trust	3.064
Gives information or recommendations that suit you best	4.002
Gives individualized attention	4.956
Is confidential	5.474
Has time to spend with a person	5.577
Is scientific	5.713
Speaks on the same level as you do	5.862
Is inexpensive or free	8.163
Takes a long time to go to	10.229
Is cold or impersonal	10.863
Makes people feel embarrassed	11.005

Many people stated that the clinics are an alternative to the family doctor only if one cannot afford the doctor's fees. Reflecting this idea are verbatims such as:

"usually if you can't afford a family physician you can get the kind of birth control that you want and not have to pay anything"; "it's for people who can't afford doctors"; "if you couldn't afford a regular doctor."

Some responses reflected the feeling that there is stigma attached to having to utilize publicly supported clinics:

"makes people feel ashamed they can't pay a doctor"; "that it is free is bad for some people"; "it's for people who get welfare checks"; "it provides for people who can't provide for themselves."

Since the North Carolina State Family Planning Agency is in fact for the low-income person, it seems that the stigma attached to it will be difficult to overcome. However, the findings from this study indicate that family

"This would suggest that family planning services should be offered separately from the county health clinic, either in conjunction with a hospital clinic, or independently."

planning centers and hospital clinics are more positively evaluated by the sample population than is the county health clinic. This would suggest that family planning services should be offered separately from the county health clinic, either in conjunction with a hospital clinic, or independently. This recommendation suggests long-range restructuring of the state program. Orienting family planning services away from institutions associated with welfare, such as the county health clinic, would seem to provide services which will be more positively perceived and hence more utilized.

The past experience of the State Family Planning Agency with respect to Guilford and Rockingham counties suggests that services separate from the county health clinic are more apt to be utilized. Family Planning has facilities in Guilford County which are independent from the county health clinic—five satellite clinics around the county and two regular clinics, one in Greensboro and one in High Point. In Rockingham County, all family planning services are provided through the county health clinics.

In Guilford County, a large percentage of the state's estimated target population of eligible women is served. In 1976, 67.3% of the target population received services from the family planning clinics. In Rockingham County, only 10.8% of the target population was reached. While these differences may be due to a number of factors, it seems that future plans for family planning services should take into account the fact that

people seem to prefer family planning centers to county health clinics and that they evaluate family planning centers more positively than county health clinics.

In terms of educational efforts which might be initiated by the State Family Planning Agency, this study suggests that North Carolina people are most likely to find personal interaction with a professional medical source the most appropriate source of information about birth control.

The low ratings given to media sources in the preference rankings have important implications for educational programs. Magazines and television advertisements were the least preferred sources of information. Less than half of the sample population thought that magazines and television advertisements "usually give you information you can trust," information that "suits you best" or "complete information." More importantly, these sources were not perceived by most respondents as providing "medically sound information" (the most preferred attribute).

At present, Rockingham County Family Planning has not developed an educational curriculum or instituted a program to systematically inform prospective users of their family planning services. In Guilford County, there is an educational program. New mothers in hospitals are contacted about family planning services. Newlyweds are given pamphlets. Nurses doing follow-up work in the community refer new clients to Family Planning. Television and radio advertisements describe the services available.

The findings from our study suggest that the development of an educational program for Rockingham County and modification of the existing program in Guilford County should stress interpersonal contact with prospective and continuing family planning clients. Since the evaluation of media sources was definitely negative in the North Carolina sample, it would seem that time and money might be better spent personally contacting people about family planning, even though a limited number of people could be reached. Providing the kind of complete information which people request in a face-to-face situation in which questions can be asked and information "that suits you best" can be obtained by the individual should be an important goal of State Family Planning. Guilford County's educational efforts already seem to have moved in this direction with staff members personally contacting new mothers, newlyweds, and others. About 20% of all new clients in Guilford County are recruited now by staff members, which suggests that this approach is a successful one.

As can be seen in Figure 4, schools did not rank very high as a source, although schools are potentially an important source of information for teenagers. In view of the fact that teenage pregnancy is now considered by population experts to be a serious problem, and teenage pregnancy rates in the Southeast are quite high (Kantner 1975), educational programs in high schools seem to be in order. This North Carolina sample did not seem opposed, in principle, to schools as a source of information about birth control methods. They were ranked very closely after parents, and ahead of ministers, in the preference rankings. However, schools are

not now regarded as particularly worthy sources of information. Less than half the respondents agreed that schools give complete information or medically sound information. Some of the responses in the domain definition suggest that people are willing to accept schools as a source of information about birth control methods but that they are suspicious of school programs as they now stand:

"if it's presented well and taught at the right level, at the right age, it should helpfully eliminate problems with birth control later"; "information is available early before trouble starts";

but,

"information may be faulty"; "sex should be taught so that there's no shame, but that it's not something to be flaunted either, and it isn't always taught that way."

Our study suggests that an appropriate educational program developed by schools would present information that is medically-oriented and deals carefully and thoroughly with the health aspects of birth control methods. Emphasis should be placed on the scientific credence of the information and its value to the student as information which he or she can use to understand and evaluate birth control methods.

Architectural Planning Study in New Mexico

In this study an architectural firm was hired by the Navajo community in Ramah, New Mexico, to design a community-controlled learning center (Harding, Clement, and Lammers 1973). The architects realized that they lacked knowledge of Navajo culture and values. They were unsure of how to design a structure suitable for the community which would be using it. Because the

"The data on design features indicated that the Navajos wanted soft, smooth textures and surfaces in their buildings. . ."

architects were concerned with designing a culturally appropriate facility, they decided to incorporate a study utilizing the elicitation methodology into their research plans. By doing this, they would have concrete information about Navajo needs and preferences which could be used in the design process.

The data collected in the study were used to determine perceptions of and preferences for building features, uses, and types, and architectural styles. The study was conducted in two phases. In the first phase, domain definition interviews were conducted to discover possible uses to which the facility would be put since the buildings were to be utilized as a community learning and resource center as well as a school. Various uses were suggested by respondents, including education

services at the levels of pre-school, elementary school, high school, and adult education. Suggested services included housing and eating facilities for students and teachers. Respondents also recommended that the facilities be used for provision of certain types of health care, athletic events, and for learning traditional Navajo skills such as tanning, dyeing, leatherwork, silver-smithing, and weaving.

In the second phase of the study, the information gathered in the first phase was used to obtain more quantifiable data on community needs and preferences. The Navajo community's preferences for uses of the learning center established it as a place for academic and vocational activities, physical education/recreation, a health center, and housing (for students and the school staff). In terms of academic activities, a school for 7th-12th grades was given highest priority, followed by a school for 1st-6th grades.

In addition to the study of attitudes toward uses of the learning center, the second phase of the study examined preferences for design features of the buildings. Pictures, depicting both interiors and exteriors of buildings, were shown to respondents. Five sets of pictures were developed; three of exteriors and two of interiors. Each respondent was asked to pick from a set of pictures the one picture most liked and the one picture least liked. For each picture selected, the respondent was asked what was most liked about that picture and what was least liked. The data from this part of the study was analyzed to provide the architects with detailed information about respondent preferences for specific design features such as windows, surfacing, and landscaping. A few examples illustrate the type of information gathered in this part of the study.

The data on design features indicated that the Navajos wanted soft, smooth textures and surfaces in their buildings, unlike the traditional rough interiors of the Navajo hogan, or house. Windows were very important, again unlike the traditional hogan with no windows. People wanted to be able to see out to enjoy the view, but they did not wish to be viewed by persons outside the building. Height was a complex dimension. There was some preference for a two-story structure because

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it was impressive; however, many respondents seemed to have a vague sense that multi-story buildings are dangerous. Landscaping, including grass, trees, and flowers, was regarded as important although the use of fountains and pools was not.

Information such as this, and the information on building uses, was utilized by the architects in their plans. The plans for the learning center included space for a high school, an elementary school, a gymnasium with facilities for athletic events and community meetings, housing for teachers, and an administrative area. Space was thus built and utilized according to the general priorities expressed in the preference rankings, with the exception of the health center which was not incorporated due to budget constraints. The first design of the learning center presented to the Navajo community by the architects was enthusiastically received and approved, and no further designs were requested. This savings alone was almost enough to pay for the study of community attitudes and preferences. The Navajos have retained the architects for additional construction following a new appropriation from Congress for further building.

Summary

This paper has presented a brief description of the Heuristic Elicitation methodology and examples of its use in the areas of health planning and architectural design. The methodology aims to determine how a community perceives and evaluates programs or projects and to systematically study the beliefs and attitudes of the people in the community so that planners and policy-makers can incorporate them into the development and modification of their program plans.

It is hoped that future planning research will strive to systematically determine community beliefs, attitudes, and preferences relating to programs and services. The more systematically this is done, and the more routinely such analysis is utilized as input into project design and implementation, the more we can hope to expect production of goods and services which are socially and culturally appropriate for the individuals for whom they are intended.

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