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A QUALITATIVE STUDY OF NEEDS ASSESSMENT:
THE GULF BETWEEN THEORY AND PRACTICE

Volume I

By

Josephine Marie Csete

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ABSTRACT

A QUALITATIVE STUDY OF NEEDS ASSESSMENT:
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Needs assessment is a means of identifying and describing "real world" problems which result in priorities for action. A comprehensive literature review indicated that little actual research on the needs assessment process exists. The literature review yielded 1) a general description of needs assessment and its evolution, 2) a detailed look at the process and terminology of needs assessment to illustrate unclear and contested components, 3) various definitions of "need," 4) an examination of how the process and results are influenced by the people conducting needs assessments, and 5) a clear indication that research on the applied process of needs assessment would be valuable.

The purpose of this qualitative study was to describe how novices conduct needs assessments and explain the resultant outcomes. Participants were fourteen physicians conducting needs assessments in preparation for creating a medical curriculum. Data were collected over a ten-month period through observations, interviews, and examining documents generated by the participants before, during, and after they received training for, and conducted, their first needs assessments. An inductive approach was used to analyze the data; results were reported in case study format.

Twenty findings are supported with quotes, descriptions, and summarizing tables. Findings document 1) types of **activities** conducted and **sources** contacted for a needs assessment, 2) **factors that facilitated or hindered** these novice assessors, 3) what participants learned about the **process** of needs assessment, and 4) changes to the **product** (a curriculum) as a result of the needs assessment.

Argyris & Schön's[1],[2] conceptual framework for theories of action was used to derive four conclusions: 1) the procedures prescribed in the literature are different from those carried out in the real world; 2) the literature and formal training concentrated on the ideal, rather than a comprehensive set of practical procedures that could be used to cope with constraints in real settings; 3) the benefits perceived by the participants differed from those described in the literature; and 4) the results were not as change stimulating as suggested in the literature. The discussion of study results suggests methods practitioners can use to conduct needs assessments more effectively and efficiently.

[1] Argyris, C. & Schön, D. A. (1974). Theory in practice: Increasing professional effectiveness. San Francisco: Jossey-Bass Publishers.
[2] Argyris, C. & Schön, D. A. (1978). Organizational learning: A theory of action perspective. Reading, MA: Addison-Wesley.

For Margaret and Tim

ACKNOWLEDGMENTS

A dissertation study is both a humbling and exhilarating experience for a novice researcher/scholar. Throughout the planning, execution, and writing of this study I have continually been amazed at the assistance received from a variety of individuals.

I am indebted to my committee: Stephen Yelon, my chair, and Castelle Gentry, Howard Hickey and Paul Munsell for gently (and sometimes repeatedly) raising a variety of issues a newcomer overlooks, without ever becoming discouraging. Each provided a different perspective that contributed substantially to this work; all have served as devoted professionals that believe in the importance of what they are doing. They have been my mentors and will continue to be my models.

Over the course of this project, I also benefited from the support of a wider community of scholars. This community included my place of work. Bill Anderson supported my efforts on this project, even when it went against his own self interests as my employer. Karen Lienhart opened the doors of her needs assessment workshop to me, and was consistently there to listen and provide feedback. She thinks I am joking when I say at least a portion of the title "Ph.D." is rightfully hers.

My community of scholars also includes peers who were those few paces ahead of me, knew what I was experiencing, and offered useful ideas and moral support. I will always remember and appreciate the help of Jill (Baldwin) Canono and Rick Albrecht. I was also struck at the outpouring of support received from complete strangers contacted during the project. Daniel Rickett became a consultant on qualitative methodology, various "famous" authors spent time on the phone and sent resources. All willingly shared their knowledge.

Then there is the group of people who always seem to be mentioned last, but provide encouragement and make sacrifices that allow any large scale project to become a reality--family and friends. My mother, Margaret Arnold, my earliest role model of a professional woman, encouraged high aspirations, single-handedly funded my undergraduate education, and read the really rough early drafts of this dissertation. My "second family," John and Colene Childs, influenced my career choice by showing me the importance of this field and how much they enjoyed it (when they weren't too busy just doing it). And Cynthia Childs, my close friend, listened. But, undoubtedly, the greatest sacrifices and most support came from the two men I am closest to. My husband Tim and son Nicholas accepted that there were things I didn't have time to do with or for them without questioning my abiding love.

It is humbling to realize how many people helped make this work possible. And it is exhilarating to have shared in stimulating exchanges with others and to realize how intricately intertwined my life is with so many other people.

TABLE OF CONTENTS

CHAPTER I
INTRODUCTION TO THE STUDY

CHAPTER II
REVIEW OF THE LITERATURE

CHAPTER III
METHODOLOGY

CHAPTER IV
THE PARTICIPANTS AND SETTING

CHAPTER V
RESEARCH FINDINGS

CHAPTER VI
CONCLUSIONS AND DISCUSSION

APPENDICES

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION TO THE STUDY

NEEDS ASSESSMENT: A PART OF A SYSTEMATIC APPROACH TO PROBLEM SOLVING

The field of Human Performance Technology (HPT) provides a means to improve performance in the workplace. A four-phased systematic approach to problem solving is used: analysis, development, implementation, and improvement (Mager, 1988). Analysis is conceived and termed differently by experts, but they would agree that its purpose is to identify and describe "real world" problems which result in priorities for action. In this study, the analysis phase was termed "needs assessment."

A more specific definition of needs assessment is "a process for identifying and measuring gaps between *what is* and *what ought to be*, prioritizing the gaps, and determining which of the gaps to work on to gain closure" (Trimby, 1979). This definition points out that: 1) some form of data collection and analysis is required, 2) "needs" are discrepancies between the current state in the real world and some defined desired state, 3) because many needs may be identified, they must be ordered for importance or value according to some criteria, and 4) the process results in a description of **what** need to work on, prior to deciding **how** it should be worked on.

1

The priority need identified and described in a needs assessment influences the subsequent phases of development, implementation, and improvement. In the <u>development</u> phase, the information collected in the needs assessment is used to generate goals and objectives, the blueprints for creating the solution. The solution is then <u>implemented</u> and evaluated to determine how effectively and efficiently it meets the need. <u>Improvements</u> are made to further ameliorate the need, or to save resources while meeting the need. Thus, needs assessment is the consequential first phase in improving human performance.

STATEMENT OF THE PROBLEM

> *Nowhere is the presence of fervor and the absence of prescriptive detail more obvious than in the topic of needs assessment.*
> (Rossett, 1982, p. 28)

Although the importance of needs assessment is undisputed, it continues to be one of the most inconsistently practiced and poorly researched areas within Human Performance Technology. A person may wish to carry out a needs assessment, and even be familiar with available techniques, but not be able to conduct one effectively. Much of what is written about needs assessment in books and articles, and "philosophized" about in courses, becomes remarkably hard to implement in actual situations. For example, how does a practitioner transfer the idea of "collecting data from a variety of sources" into practice? How many sources are needed? Which sources? What data should be collected from them? What if it costs more to do it one way

than another? And how does the practitioner convince the person holding the purse strings that this should be done?

There are many obstacles for practitioners attempting to conduct needs assessments. First, a person interested in learning about needs assessment must sort through literature that displays the long-standing confusion over what needs assessment is and what particular terminology to use (Kaufman, 1977a, 1982, 1986; Rodriguez, 1988; Rossett, 1982, 1986, 1987; Sarthory, 1977; Witkin 1977). Lack of agreement on what constitutes needs assessment is further complicated by the plethora of widely divergent models created in the last several decades (Trimby 1979; Wanamaker, 1986; Witkin 1977, 1984). Second, much of the literature on needs assessment focuses on theory and provides little practical advice on how to actually carry one out (Lewis & Bjorkquist, 1992; Rossett, 1982; Wanamaker, 1986). As a result, all too often the aspiring practitioner is unsure of how to find or design and develop the tools for collecting information, how to analyze that information once it is collected, and how to manage the logistical and interpersonal complications that arise during the process.

Finally, even after having expended time and energy on collecting and analyzing information, the practitioner may wonder if the needs assessment has been truly useful. Has the "real" problem been identified? Will it make a difference in what happens in the rest of the performance technology process? The practitioner may be left with a vague feeling that some vital information that could have changed everything has been missed--or that her own or another's personal viewpoint unduly influenced the final results. Even worse, the practitioner may doubt that the results of the needs assessment will

actually be used. A search of the literature offers little comfort on this last point. Although the idea of "problem identification" prior to beginning a process of problem solving is logically appealing, there continues to be remarkably little research on needs assessment. To date, there is no "proof" that needs assessment produces valid and reliable results (Burton & Merrill, 1991; Witkin, 1976). Furthermore, the information gathered in a needs assessment may not be applied in later stages of the performance technology process (Benjamin, 1989; Wanamaker, 1986).

PURPOSE OF THE STUDY

The first step in promoting the effectiveness and efficiency of needs assessment is to document current practice. Therefore, the purpose of this study was to describe how novices conduct needs assessments and explain resultant outcomes. The context was a 10-month long fellowship in medical education, in which primary care physicians from across the US and Puerto Rico developed their skills in teaching, research, curriculum development, and administration. The subjects of this study were fourteen physicians conducting needs assessments in preparation for creating a medical curriculum. In this qualitative study, data was collected through observations, interviews, and by examining documents generated by the participants before, during, and after they received training for and conducted their first needs assessments. An inductive approach was used to analyze the data and results were reported in case study format.

Three goals were identified to achieve the purpose of the study. The first goal was to develop an understanding of how needs assessment is practiced by describing the needs assessment process people use. The process can be understood in terms of the types and numbers of activities conducted, as well as the types and numbers of sources involved. A second goal was to identify what phenomena facilitate and/or hinder people as they perform needs assessments. Needs assessments cannot be carried out in isolation. Needs assessors must interact with other people and deal with environmental pressures to find valuable data, to analyze information, and, most important, to use the results. A third goal was to identify what people learn as a result of conducting the needs assessment. "Learning" was defined both in terms of the results obtained from the needs assessment (the "products"), as well as what was learned about needs assessment itself (the "process").

RESEARCH QUESTIONS

In order to address this purpose, the broad research questions were: **How is the theory of needs assessment implemented in practice?** and **What are the outcomes of having conducted a needs assessment?** These specific questions addressed each of the goals:

1. What do the participants do in conducting a needs assessment?

2. What factors facilitate and/or hinder the needs assessment process?

3. What do participants learn in doing a needs assessment?
   a. about the process
   b. about the products

Although the purpose of the study remained the same, the research questions were modified during the course of the study. This happened because an inductive approach was used in which later phases of the study were directed by discoveries in earlier phases of data collection and analysis. It is not unusual for the focus of qualitative research to change as the study progresses (Marshall and Rossman, 1989; Peshkin, 1985; Tesch, 1990). This process will be further described in Chapter III. See Appendix A for a listing of the research questions that launched this study and a discussion of the changes that occurred.

INVESTIGATOR'S PERSPECTIVE

> ...as I increasingly come under conviction about the relationship between who I am, what I see, and what I conclude about what I see, I feel increasingly inclined to reveal enough about myself so that readers can make their own judgments about what I saw, what I missed, and what I misconstrued.　　(Alan Peshkin, 1986, p.15)

A description of how the investigator was the primary data-gathering instrument for this study and a discussion of the techniques used for helping readers determine how confident they are in the results of a qualitative study, and how they may use such a study, are presented in Chapter III, "Methodology." A brief orientation to the investigator's perspective on needs assessment and assumptions at the beginning this study may help readers determine the strengths and weaknesses of this study and what information may be appropriately transferred to other

contexts. The following italicized text is a description of the investigator's background and views related to needs assessment.

I have been working toward a Ph.D. degree in Educational Systems Development for the past four and a half years. Although I was not exposed to the formal concept of needs assessment until early in my Ph.D. coursework, I instantly recognized and valued it as the logical early step in a systematic approach to problem solving in any area: clearly identify the problem based on the examination of data before expending time and energy on attempting to solve it.

It is even fair to say that I entered the program in Educational Systems Development because the process of needs assessment had so impressed me. Several years earlier, I worked for a small company that designed training materials for business and industry. I was fascinated by a successful case where a client asked my colleagues to solve a problem ("Our technicians don't refer to the repair manuals").

After going to the site and interviewing and observing, my colleagues discovered how large a problem this was and they found a multitude of reasons for it. They reported on the importance of the problem ("X% of the time your technicians are unable to make the repair or unintentionally damage something else in the process....Y% of your customers said they would not buy your products again due to repair problems.") Then they proposed a solution to the problem to address all the factors identified in the needs assessment. Their answer included design solutions ("organize the manuals by repair process, lower the reading level, add more line drawings, use color coding and tabs to make the manuals easier for technicians to follow..."), as well as changes to overcome organizational and motivational barriers to solving the problem ("take the manuals out of

the supervisor's office and put them on a wheeled cart on the shop floor so technicians can refer to them while doing the repairs without feeling that they're showing the boss that they don't know something every time they look at the book...").

A tremendous amount of money would be spent to solve this problem and a large number of people would be affected by the success of the solution. Thousands of customers could potentially incur less frustration and financial loss due to correct repairs of their equipment, thus improving the manufacturer's future sales volumes. Without the needs assessment, the investigators would not have identified all of these factors. Had any one of the factors been overlooked, the solution probably would not have worked--no matter how well the other factors were addressed.

The systematic approaches to problem solving I studied in graduate school all incorporated some form of needs assessment, and for very logical reasons. Convinced of the importance of needs assessment, I read about models and techniques and wrote term papers. Then, I had a chance to conduct my own first needs assessment for a client in industry. I quickly discovered how difficult it was to take a process that seemed so important and logical and make it a reality. Although I knew about needs assessment, I felt ill prepared to do one. I completed the project and the client expressed satisfaction, but I was left with nagging questions that were to become the seeds of this study. I wasn't sure I had done the best job possible. I worried that I had missed something.

I decided I would do my dissertation on the topic of needs assessment. For the next year, I read books and articles, attended national conferences, and talked to people who conducted needs

assessments. Based on these experiences, I generated three primary assumptions about needs assessment:

1) *It is difficult for people to control their own biases while conducting needs assessments.* *There are so many decisions that must be made quickly regarding sources, data gathering and analysis techniques, and on-site trouble shooting that a person could unconsciously influence the course of the process and the results obtained. It seems all too easy to have the results of the needs assessment support the practitioner's favored solution. Needs assessment may be susceptible to "the hammer principle" in which a person with a hammer seeks out things that need hammering. Similarly, training specialists could conduct needs assessments and discover problems to be solved by training. I went so far as to wonder whether different personality types would conduct different types of needs assessments and wind up with different results.*

2) *Although needs assessment is an important and integral component of systematic approaches to problem solving, it does not seem to be used in everyday practice.* *First, comprehensive needs assessments as described in the literature don't often happen. In fact, needs assessments are often skipped altogether, or done in a very foreshortened manner. People have trouble justifying the time and money involved in doing a needs assessment. Second, the results of needs assessments seem to be unevenly applied. It is common for needs assessments to be used to gain credibility and to justify a particular course of action -- especially when permission or funds are being requested. But it is much rarer to see evidence of consistently using the information gained from the needs assessment to design, implement and evaluate the new product or process. It seems that when (and if) an evaluation is conducted, people neglect to measure their success against the standards that were set at the beginning of the process by the needs assessment. I felt that finding out why needs assessments aren't done or aren't used could be the first step in facilitating their use.*

3) *The potential impact of needs assessment is tremendous, yet remains unproven.* *In spite of the concerns of bias or lack of use, needs assessment continues to hold great promise. If we could just figure out to what extent, and how and where bias enters into needs assessment, we could reduce bias. If we could get a better grasp of what the benefits of conducting a needs assessment are, we would be better prepared to justify the use of resources to conduct them and to determine how extensive the effort should be. If we could discover where opportunities for using needs assessment data are missed, we could develop guidelines for referring back to the data in the later phases of development, implementation and*

improvement. We need to conduct research to discover what a difference needs assessment can make.

Throughout this study I was intensely aware that I was essentially conducting a "needs assessment of needs assessment." Therefore, my own study runs the risk of committing the trespasses I have assumed others commit. In Chapter III, I will describe how I have attempted to use methodology to control for these assumptions.

This section on the investigator's perspective has been offered as a kind of "personal rationale and significance of the study." The reader can use this section to better determine how the investigator's perspective interacted with the study as it unfolded. The following rationale and significance section is intended to present an argument supporting the study based on perspectives of others.

RATIONALE AND SIGNIFICANCE

There is no more important goal for a developer than to hone the tools we use to understand performance problems
(Rossett, 1982, p.33)

This study was designed to contribute to the field of Human Performance Technology as well as the immediate context and people studied. The findings of this study should contribute to the research base on needs assessment. Although needs assessment is widely acknowledged as an important component of the development process, there is little research on its effectiveness (Benjamin, 1989; Burton & Merrill, 1991; Sleezer, 1991; Witkin, 1976). The largest proportion of what has been written about needs assessment consists of experts' opinions on theoretical constructs and descriptions of models or specific

techniques. What is lacking is research in which the concepts and techniques that have been written about are tested for effectiveness. The description of the process and outcomes of 14 needs assessments in this qualitative study will serve as a starting point for validating the benefits of performing needs assessment.

The findings of this study may also contribute to understanding needs assessments as they actually occur. Argyris and Schön (1974) demonstrate that inconsistency between a theory as it is espoused and as it is actually put to use can lead to lack of effectiveness. Resolving points of inconsistency requires 1) changing the espoused theory so that it more accurately represents actual practice or 2) altering practice so that it conforms with the theory. This study's description of why and how needs assessments are performed will be compared to theory. Further research could result in either 1) modification of the theory of needs assessment so that it more accurately represents how needs assessment is practiced and/or 2) guidelines for making changes in how needs assessment is practiced.

Medical education should also benefit from this study. Needs assessment is recognized as the crucial first step to improving performance in medical settings (Finnegan, 1991). A review of curriculum development efforts in the health professions revealed that in the vast majority of cases, subject matter experts (e.g. physicians, nurses) with limited experience in performance technology concepts were responsible for designing and implementing new curricula (Sheets & Anderson, 1991). Because the study participants were physicians conducting needs assessments as part of developing a medical curriculum, it should enhance our understanding of how needs

assessments are conducted in medical settings by people with limited experience in performance technology concepts.

In addition, the results certainly will be applicable in the specific context of this study--a fellowship for academic physicians. Plans are already in place to incorporate this study's suggestions on how to better prepare people to conduct needs assessments.

Finally, the "subjects" of the study may have benefited from the research process as well as the results, as they were an integral part of the data collection and analysis process. The 14 participants were encouraged in interviews to reflect on what they did and what they had learned. As part of the research process, the investigator asked participants for their opinions of her insights. Participants had the opportunity for further reflection upon their own behavior, how the needs assessment process might be helped and hindered, and what the outcomes of the process might be. This study may also have helped the participants by bolstering their esteem. Throughout the study, many participants expressed frustration and self doubt in attempting their first needs assessment. When the investigator asked whether being studied had added to their frustration, the response was always the opposite. Participants made statements like "You showed interest in what we were doing. For one, it made me feel more important" and "Your studying this actually helped...it served as a reminder that [needs assessment] is not completely understood."

STUDY CONTEXT AND METHODS

The context of the study was a ten-month fellowship in medical education which provides training for approximately 20 physicians (M.D.'s and D.O.'s[1]) a year. They learn about topics that will enhance their performance as academic physicians, including teaching, administration, research, and curriculum development. The sample for this study was drawn from the physicians attending the fellowship in a recent year. At the beginning of the year, the investigator told the physicians who intended to complete a curriculum development project about the study and invited them to participate. All 14 potential subjects agreed to participate in the study. Fellowship faculty presented a workshop on needs assessment concepts and techniques based on the work of Allison Rossett (1987). Subjects were then required to design and conduct a needs assessment in their work environment and prepare written and oral reports within a six-and-half week period. See Chapter IV, "The Participants and Setting," for a more detailed description of the subjects and context.

The methods for this study were drawn from qualitative research traditions. The investigator collected data through observations, interviews, and examination of documents. An inductive approach was used to analyze the data. This approach of allowing theory to be generated from the data (rather than preceding the data as in traditional hypothesis testing) is known as grounded theory (Glaser & Strauss, 1967). Data were coded and analyzed for patterns and trends, and tentative findings were tested in later cycles of data collection and

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[1]   M.D. and D.O. stand for "Doctor of Medicine" and "Doctor of Osteopathy," respectively.

analysis. Research findings are reported in a case study format (Yin, 1989). Chapter III, "Methodology," provides a more detailed description of the methods.

SCOPE AND LIMITATIONS

The scope and limitations of this study derive from the choice of approach, setting and subjects. There are eleven limitations. Stemming from the choice of a qualitative approach, this study: 1) involves only a few people, 2) has results which cannot be tested for statistical significance, 3) is reliant upon participants' recall, and 4) is reliant upon a single investigator to accurately collect and analyze data. Stemming from the choice of setting, this study's results may be limited because: 5) the study took place in the field of medical education, 6) the needs assessments were for the specific purpose of curriculum development, and 7) the needs assessments were required. The choice of subjects may also limit the study as the needs assessments were conducted by: 8) individuals rather than groups, 9) relative novices to human performance technology, 10) subject matter experts, and 11) people who were conducting needs assessments in their own work environment. Each of these limitations will be discussed in turn.

Limitations from Approach

Qualitative studies have limitations as well as strengths. First, the smaller numbers of non-randomly chosen subjects in qualitative studies tend to limit the traditional notion of generalizability to a wider or more diverse population. But, as Glaser and Strauss (1967) point out,

theoretical sampling is valid in a theory building study. The purpose of this study was to generate insights on how people conduct needs assessments and what they learn from them. No attempt was made to assign magnitude or direction to these insights, which would require larger numbers and statistical (random) sampling. Second, the data are comprised primarily of text and were not reduced to numbers and subjected to statistical tests of significance. The investigator collected many forms of descriptive data in interviews, observations and documents. Where possible, analysis included numerical summaries. However, as a primary goal of qualitative research is to present vivid and accurate descriptions of complex phenomena, the qualitative approach is particularly suited to generating an understanding of the complex process of needs assessment. Key "variables" identified in this qualitative study could be quantitatively studied in future research on needs assessment. Third, this qualitative study was limited to the extent that it relied on the perceptions and recall of study participants. Perceptions were checked against observations of behavior and documents created by the participants. Distortion in participants' recall was, in part, controlled by asking for similar information through a number of open-ended questions over an extended period of time.

The fourth and most problematic limitation related to the choice of a qualitative approach is the reliance upon an individual researcher to collect and analyze the data. Two major concerns are the presence of the researcher altering the phenomena being studied and researcher bias. The interaction of the investigator with the participants represents a potential limitation of the present study. Traditional methodology derived from the natural sciences asserts that observation alters what is

being observed and urges as little interaction between researcher and subjects as possible. In contrast, Blumer's theory of symbolic interaction (1962) cogently argues that the only way to understand a situation is from a participant's perspective, which is best approximated by interacting with the participants and learning to see things the way they do. According to Blumer, distancing oneself from the subjects in a study is likely to introduce a much more dangerous form of bias than that introduced by interacting with them. Another area of concern relates to researcher bias. As a single investigator was observing behaviors, conducting interviews, and collecting documents, it is reasonable to be concerned that the investigator's feelings and biases affected the collection and analysis of data in the present study. However, the investigator applied a variety of controls for researcher bias. This is discussed in detail in Chapter III, "Methodology," as well as the effect of the choice of a qualitative methodology.

Limitations from Setting

The choice of setting also determines a number of limitations as well as strengths for the study. First, because the needs assessments were conducted in medical education, findings will not necessarily generalize to other fields. And second, because the needs assessments were being conducted as part of a curriculum development effort, the findings may not generalize to needs assessments conducted for other purposes. However, Erickson (1986) and others writing on qualitative research point out that phenomena must first be understood with reference to the local setting and actors before any attempt can be made to develop comparative understanding in other settings. In other words,

phenomena need to first be described and explained in a particular setting (such as medical education for the purpose of curriculum development) to generate findings which can then be checked for applicability to other settings in other studies.

And third, because subjects were required to conduct a needs assessment and report on the results, the generalizability to people conducting needs assessments without requirements is limited. However, this limitation is balanced because the subjects' structured experience generated tangible products that could be easily studied. For example, workshop exercises yielded valuable data on subjects' thinking and learning that would not have been available in studying unstructured "real world" needs assessments. Also, having a central workshop experience was important to accomplishing the purpose of this study because it provided a "standardized" starting point from which each of the subjects could deviate.

Limitations from Subjects

The third area of limitation is related to the type of subjects in the study; the needs assessments reported in the study were conducted by needs assessors who were: 1) working alone, 2) novices to needs assessment, 3) already experts in the subject matter area, and 4) members of the organization in which the needs assessment was conducted. These four characteristics of the subjects may limit the transferability of study findings to other populations. But, as will be described, these characteristics were also present in many other needs assessment situations and yielded data that was key to answering the present study's research questions.

First, each needs assessment was conducted by a single individual so the findings may not apply to needs assessments conducted by groups. However, it appears that the vast majority of needs assessments are conducted by a single person and comprehensive needs assessments conducted by teams of people are rare (A. Rossett, personal communication, May 5, 1993).

Second, this study was also limited to subjects who are relative novices to performance technology. Although the study results may not be readily transferable to expert needs assessors, there are two important benefits of studying novices. One benefit is that research on novices suggests that novices should be better able to describe what they are doing, and why, than would experts (Ericsson & Simon, 1984). Another benefit is that by studying novices' first attempts at needs assessments, more could be learned about how to better prepare people to effectively and efficiently conduct needs assessments.

Third, the subjects of this study were subject matter experts in medicine. Therefore, their activities may not translate to situations in which the needs assessor has little or no knowledge in the subject matter area and is consequently much more dependent upon others to act as subject matter experts. And finally, the subjects were conducting needs assessments in their own work environment and would be responsible for the implementation and maintenance of the curriculum they designed. The subjects were, therefore, different from experienced external consultants who could conduct the needs assessment, make a report, then leave the organization. The subjects had more in common with internal consultants, such as members of a Human Resources Department, but still differed from them in that internal consultants

would not be thoroughly familiar with the subject matter and would not be responsible for implementing and maintaining the proposed solution. A substantial portion of needs assessments are conducted by people sharing the characteristics of the study subjects, however, study findings should be most readily transferable in similar cases. And finally, as mentioned earlier, phenomena must first be understood for the specific setting and actors before comparative understandings for other settings and peoples can be generated (Erickson, 1986). In Chapter IV, "The Participants and Setting," the study setting and subjects are described in detail so that readers may determine the transferability of study findings for themselves.

SUMMARY AND OVERVIEW OF THE STUDY

The concept of needs assessment was introduced in this chapter, along with a brief description of the problems of needs assessment being inconsistently practiced and poorly researched. As an early step in better understanding how needs assessment is practiced, this study was designed to describe and explain how people implement and what they learn from a first needs assessment. The research questions, investigator's perspective, rationale and significance, context and methods, and scope and limitations of the study were also introduced.

In Chapter II, a "Review of the Literature" is presented to establish the basis for the research questions. It covers major theories and concepts of needs assessment including the controversies over how needs assessment is defined, the many types of "need," how the analyst

conducting the needs assessment may influence the process and results, and available research on needs assessment is reviewed.

In Chapter III, "Methodology," methods used in the study are presented along with an overview of qualitative research, a brief description of the research site and sample, and more detailed information on data collection guides and procedures, coding, and analysis. It concludes with a description of how Lincoln & Guba's (1985) criteria of trustworthiness were implemented to establish the validity and reliability of the study.

"The Participants and Setting" of the study are presented in Chapter IV. This includes a description of the participants as a group and as individuals, the faculty development fellowship which is the setting of the study, and the needs assessment assignment.

In Chapter V, the twenty "Research Findings" that answer the three research questions are presented. The patterns and trends which became evident through analysis of the interviews, observations, and examination of documents are reported in multiple-case study format.

The "Conclusions and Discussion" are presented in Chapter VI. The conceptual framework used to interpret the study results, a review of major conclusions on the process and outcomes of needs assessment, an outline of the implications for the future practice of needs assessment and the use of this methodology in Human Performance Technology, and suggestions for future research are discussed.

Appendices contain items which provide additional information that: 1) supports the chapter text, such as the comparison of the four major discrepancy models of needs assessment; 2) describes the participants and setting, such as sample fellowship schedules and the

peer observer's description of the participants and setting; and 3) presents research tools and instruments, such as the consent forms and interview guides. For the reader's convenience, major terms used in the study have been compiled with their definitions in Appendix H.

The List of References includes books, articles, paper presentations, and dissertations on the topics of needs assessment, the conceptual framework, and qualitative research.

CHAPTER II

REVIEW OF THE LITERATURE

The pattern in our field is similar to any emerging technology. First comes the 'big idea,' then the painful working out of the how-to's.

(Harless, 1983. p. 6)

The purpose of this study was to describe and explain how people become familiar with, implement, and what they learn from having completed a needs assessment. Literature on the topic of needs assessment is reviewed here to illustrate the areas of controversy in the body of knowledge which inspired this study.

This discussion of needs assessment has been sub-divided into five areas. First, a general description of needs assessment and how it came into existence is presented. Next, a more detailed look at the terminology and process of needs assessment illustrates how the specific components are unclear and contested. Then, the various definitions of the central term "need" are presented, followed by an examination of how the people conducting needs assessments impact the process and results. And finally, research pertinent to the purpose of this study is reviewed highlighting its impact on the present study.

Most of the literature referenced in this chapter relates to the study's setting. Although needs assessments are conducted in business,

22

industry, government, and education, literature in the field of education was primarily consulted. In addition, as the study participants were conducting a needs assessment prior to creating a curriculum, special attention was given to literature on needs assessment for instructional design or curriculum development purposes. As described in the scope and limitations of the study, phenomena must first be understood with reference to the local setting and actors before any attempt can be made to develop comparative understanding in other settings (Erickson, 1986). Therefore, needs assessment as described here for medical education may be largely transferable to other settings in which the reader is interested.

Several terms must be defined before proceeding. First, needs assessments may identify many "needs," but only those selected as priorities for action are referred to as "problems" or "goals." Problems or goals describe the *ends* that are desired and must not be confused with "solutions" which are the *means* of accomplishing the ends. As an example, a school may conduct a needs assessment and identify several "needs" including: 1) students' math skills are two or more years below the national norm, 2) the building's fire alarm system is not up to code, and 3) the dropout rate is X% and has been steadily rising for the last decade. The school does not have enough resources to tackle all of these needs at once, so through some criteria they decide to work on the dropout rate first. The "problem" is now the increasing dropout rate, and their "goal" is to reduce it to Y% within a certain amount of time. The school can now begin to consider the "causes" of the problem which will lead to "solutions" for accomplishing the goal such as 1) hiring a social worker to identify and work with "at risk" students, 2) creating a work

study program that will allow students to continue school part-time while working, or even 3) establishing an endowment that will pay every graduate a sizable amount of money upon graduation.

WHY DO WE HAVE NEEDS ASSESSMENT?

> *Needs assessments are tools for constructive and positive change--not change driven solely by controversy, 'quick-fixes,' and situational crises, but rational, logical, functional change which meets the needs of citizens, educators, and learners. They represent formal, systematic attempts to determine and close the more important gaps between 'what is' and 'what should be.'*
>
> *(Kaufman & English, 1979, p.8)*

Witkin (1984) defines needs assessment very generally as "any systematic approach to setting priorities for future action" (p. ix). The intent of needs assessment is to make decisions on the basis of data to prevent the premature formulation of a solution. Needs assessment is a systematic form of planning in which data are collected in order to identify and describe needs, and needs are prioritized prior to launching a problem solving venture. Its counterpart in performance technology is evaluation (Trimby, 1979). Needs assessment is the first stage in performance technology and designates what should be accomplished. Formative evaluation is an interim stage to identifying improvements to the solution. Summative evaluation is the final stage that validates the degree to which the solution has accomplished the goals identified in the needs assessment and determines whether or not to continue the solution.

The topic of needs assessment is important for three reasons. First, needs assessment is widely used. The concepts and techniques of

needs assessment are applicable in many settings including education, business, industry, and public and private service agencies (Witkin, 1984; Kaufman & English, 1979). Second, needs assessment is important because it identifies the "problem" that the rest of the performance technology process attempts to solve (Burton & Merrill, 1991; Geis, 1986; Mager, 1988). And third, the parameters used in the needs assessment to identify and select the problem influence the rest of the process (Guba & Lincoln, 1982; Kaufman, 1977a). As such, needs assessment is an indispensable component of the performance technology process and can enhance or impede the likelihood that a solution will yield substantive positive change.

Origins of Needs Assessment

Needs assessment has evolved over the course of the twentieth century. First, a few key concepts created the "need" and place for needs assessment. Dewey (1933) argued that education should focus on meeting learners' needs rather than on transmitting subject matter. Some process was required to determine learners' needs. Tyler (1949) and Mager (1970) proposed that behavioral objectives, measured from learner's performance, provided the basis for developing and evaluating curricula. Some form of analysis had to be performed to determine what went into these objectives.

General System Theory as described by Bertalannfy (1968) identified the characteristics of systems. Needs assessment could then be recognized as an integral component of a system for performance improvement. In addition, the scope of needs assessments expanded on the basis of General System Theory concepts. Since every part in a

system is interdependent with the whole and cannot be studied in isolation, effective needs assessments had to consider all the components in the system of interest to identify the appropriate problem.

In the last three decades, many other concepts and events have further shaped the developing area of needs assessment. Kaufman (1977a; 1977b; 1979; & English, 1979) argued that there are different levels of performance improvement, and efforts should improve society as a whole--not just improve the profits or the survival of a single organization. Gilbert (1978) provided tools to determine which problems, if solved, are likely to substantially improve performance. Mager & Pipe (1984), Harless (1975) and others have pointed out that the solution to the problem is not always instruction. The scope of problems that could be identified in needs assessments expanded to include lack of skill, knowledge or motivation in the individual, or organizational barriers to performance.

Needs assessment was tied to the movement for accountability in education in the 1960's and 70's (Miles, 1979; Witkin, 1977, 1984). State and federal legislation such as the Elementary and Secondary Education Act of 1965 required school systems to conduct needs assessments to qualify for government funding. Similar federal requirements in human services were created in the same time period (Kimmel, 1977). The number of models and techniques for conducting needs assessments grew rapidly as a result. Thus, needs assessment has grown into a complex process that is represented by a variety of models.

WHAT IS NEEDS ASSESSMENT?

> *Although the literature shows a certain consensus on the
> definition of a needs assessment, especially in the concept of
> a discrepancy, there is much less agreement on what
> elements or components comprise the assessment itself.*
> *(Witkin 1984, p. 14)*

There is a great deal of disagreement regarding the initial phase of

analysis in performance technology. First, terminology is debated.

Second, the components of the process are contested. And finally, there

are many models for analysis that fulfill different purposes and use

different techniques. Each of these controversies will be briefly described

in turn.

The Debate over Terminology

Terminology describing the initial stage of analysis in performance

technology differs drastically among authors (Rodriguez, 1988; Rossett,

1986; Sarthory, 1977; Sleezer, 1992; Trimby, 1979). A substantial

portion of the literature argues the definitions and uses of "needs

assessment," "needs analysis," "front-end analysis," "goal analysis," "task

analysis," "job analysis," "strategic planning," "quasi-needs assessment,"

"alpha needs assessment," and so forth. Authors coined each of these

terms to describe their preferred form of analysis, which was for a

slightly different context and followed a different process from the rest.[1]

As an example, a dispute has been waging in the literature over the

distinction between needs assessment and needs analysis. One

viewpoint is that the two are entirely different--needs assessment is the

identification and prioritization of needs, and needs analysis is the

---

[1] Examples of contexts include: business, industry, education and government.

determination of the causes of the prioritized needs and selection of a solution (Kaufman, 1985; Kaufman & Bowers, 1990; Kaufman & Valentine, 1989). Another viewpoint is that the two processes can and should occur together (Benjamin, 1989; Harless, 1975; Rossett 1987). The unfortunate result of these disagreements over terminology is that communication is hampered and energy is diverted from the more important task of helping people do the initial phase of analysis well.

In this study, the term "needs assessment" was chosen to refer to the general step of analysis in performance technology. The purpose of the study required that needs assessment be broadly defined to include the identification and prioritization of needs as well as the search for causes and solutions. Other terminology will be used only in reference to the particular methodology it describes.

The Debate Over Process Components

Unfortunately, confusion over terminology is only the first hurdle to understanding what needs assessment is. Models present widely divergent representations of the process. In fact, there are so many models for conducting a needs assessment that a portion of the literature is devoted exclusively to comparing and contrasting models (Trimby, 1979; Wanamaker, 1986; Witkin, 1977, 1984) or presenting decision aids to guide the selection of an appropriate model (Cohen, 1981; Witkin, 1978a, 1978b).

On the most general level, the process of needs assessment may be conceptualized as five activities: 1) preparing for the needs assessment, 2) collecting the information, 3) analyzing the information, 4) reporting on the information, and 5) using the information (Stufflebeam, McCormick,

Brinkerhoff, & Nelson, 1984). These activities rarely occur in step-like fashion. Instead, activities may occur simultaneously or be cycled through several times. Each of the many models available emphasizes these activities to differing degrees. Most attention is usually given to how the information is analyzed (Rossett, 1982), and the activities of reporting on and using the information may be skipped altogether (Wanamaker, 1986).

In particular, there is a great deal of disagreement over how the activities of data collection and analysis should occur. Witkin (1977) proposes a "classical" method of assessing needs that consists of four components:

(1)   generate goals and rank them for importance--that is, determine desired conditions;
(2)   determine the present status of each goal, or existing conditions;
(3)   identify and analyze discrepancies between the goals and the present status; and
(4)   assign priorities to the discrepancies.

(p. 5)

However, Witkin qualifies her method, acknowledging that any particular model for conducting a needs assessment may order the steps differently and incorporate additional steps.

The Debate Over Models

Most models fall into one of four groups based on their approach to identifying needs: discrepancy, democratic, analytic, and diagnostic (Stufflebeam, 1977). Each group possesses distinct strengths and weaknesses. According to Stufflebeam, the "discrepancy view" is the most widely used. It defines a "need" as a gap between the desired and

actual performance. Because the discrepancy view emphasizes measurable data, it may rely too heavily on available data sources such as tests without questioning their validity. Others criticize the discrepancy view for overemphasizing the size of the gap at the expense of smaller gaps which may be more important (Roth, 1978; Witkin, 1984). The "democratic view" defines a need as something that the majority of a particular group desire. Although the democratic view tends to involve many people's perspectives and promote positive public relations, the "needs" identified are dependent upon how well informed the people are and may turn out to be preferences that would not lead to substantive change. The "analytic view" defines a need as "the direction in which improvement can be predicted to occur, given information about current status" (Stufflebeam, et al., 1984, p. 8). This very future-oriented view asks questions like "What skills must our graduates have to compete successfully in the work setting?" (Stufflebeam et al., 1984, p. 8) to elicit broad goals for improvement. It requires highly skilled contributors and may result in abstract goals that are difficult to implement. And finally, the "diagnostic view" defines a need as something that, when absent or lacking, causes harm--and when present is beneficial. This view tends to emphasize basic survival needs because it is difficult to determine the causes of more complex needs.

The methods used to conduct a needs assessment vary depending upon the type of model chosen. For example, a person conducting a needs assessment for a school system more likely will 1) collect and analyze data related to students' current and desired performance for a discrepancy-based needs assessment; 2) find out what teachers, administrators, and perhaps members of the community think the school

should be doing for students in a democratic-based needs assessment; 3) ask experts to prognosticate what students will need most in the future in an analytic-based needs assessment; and 4) look for the causes of a specified problem in a diagnostic-based needs assessment.

The discrepancy view of needs assessment is the most popular in performance technology. It is presented in the writings of Harless (1975), Mager & Pipe (1984) and Mager (1988), Rossett (1987), and Kaufman (1972, 1979, & Herman 1991). Once again, even between these four well-known discrepancy models, there is disagreement on the terminology, major emphases, and precise starting and ending points of needs assessment (see Table 1 or refer to Appendix B for a more detailed comparison of the four models). In the present study, the participants were exposed to the discrepancy view of needs assessment as described by Rossett (1987) in a workshop and provided with handouts to help them plan their needs assessments according to Rossett's model.

Table 1

Comparison of Four Major Discrepancy Models[2]

Creator	Preferred Terminology	Emphasis	Starting Point	Ending Point
Harless	Front-end analysis	* Types of possible causes * How to select best solution	Assumes need area already identified	Through selecting best solution
Mager	Performance analysis	*Types of possible causes * How to select best solution	Assumes need area already identified	Through selecting and implementing solution
Rossett ·	Training Needs Assessment (uses "needs assessment" for one of three techniques)	* How to collect data * Five purposes * Selecting appropriate data gathering activity	Assumes need area already identified	Through selecting solution and reporting on results
Kaufman	Needs assessment Needs analysis	* Level of planning effort: individual, organization or society * Involving others in process	Starts with determining need area	Needs assessment: (stops at problem identification and prioritization) Needs analysis: (through determining causes and selecting solutions)

[2]The investigator wishes to acknowledge Sleezer (1992). Her description of the varied starting and ending points among needs assessment models contributed to the creation of this table.

WHAT DOES "NEED" MEAN IN "NEEDS ASSESSMENT"?

Needs assessments have been for some time the most ludicrous spectacle in evaluation. The usual 'models' are farcical and decisions based on them are built on soluble sand. One sign of the extent of the problem is the failure to begin with a tolerable definition of need.

(Scriven & Roth, 1977, p. 25)

The Term "Need" Is Vague

Much of the disparity between models of needs assessment can be attributed to assumptions about what constitutes a "need." As described in the previous section, Stufflebeam (1977) placed models into four categories based on how they conceptualized "need." Although people are often not even aware of how they are defining "need," these assumptions profoundly influence the needs assessment process and results (Roth, 1977, 1978; Sleezer, 1992).

Kaufman (1986) describes a "need" as "the gap between what is and what should be" (p. 53) and emphasizes that "need" should be used as a noun and not as a verb. This prevents confusing documented needs with "wants" and jumping to solutions. For example, a need expressed as a noun would be "This group is reading three years below grade level," whereas a need expressed as a verb would be "We need to improve their reading skills." A need expressed as a verb could easily slip into ways of fulfilling the need such as "We need a remediation program," "We want more money to hire teachers to reduce class size and increase individual attention," or even "We need a free hot lunch program so these students can concentrate on their studies instead of their hunger."

A "Need" Is Dependent Upon Who Is Defining It

According to Kimmel (1977), "Needs do not show themselves. Someone must establish what constitutes a need" (p. 12). For example, Kaufman's definition of a need is based on the discrepancy view (the gap between actual and desired states). "Need" can be conceptualized many ways when establishing the desired state in the discrepancy. It is relatively easy to collect data on the actual state, but some referent groups' opinions are the only source of "what should be" (Witkin, 1984).

Needs assessments can be distinguished according to whose needs are focused upon. Kaufman (1977a, 1977b, 1989) describes assessments which focus on the needs of the sponsoring organization as "internal" or "beta" needs assessments. In contrast, assessments that focus on needs in society outside the organization are "external" or "alpha" needs assessments. Witkin (1984) describes a similar system in which "primary needs" focus on the clients of the organization and "secondary needs" focus on the organization itself. Everyone who makes this distinction urges that the focus should be outside the organization. According to Kaufman, needs assessments which focus on the needs of the organization tend to perpetuate the status quo, and may harm others in order to ensure the organization's survival. On the other hand, needs assessments which focus on the needs of society as a whole are more likely to lead to significant changes that benefit many.

Even after a referent group has been chosen, there are many ways "needs" can be defined (Burton & Merrill, 1991; Moroney, 1977; Roth, 1978). Burton & Merrill enumerate six types of needs, all based on some form of discrepancy. Examples of each of the six types of need are shown

in Table 2. Depending upon the definition of need employed by those conducting a needs assessment, a different process would likely result in a different product.

Distinguishing Between Needs And Wants

The above discussion describes how needs may be derived, but does not address whether these needs are authentic or actually "necessary." Scriven and Roth (1977) and Roth (1977) argue that the discrepancy-based definition of a need, where a need = target state - actual state, still fails to distinguish between needs and wants. They add the criteria that 1) only a need will result in an unsatisfactory condition if left unfulfilled; 2) all needs are context dependent, as not everyone needs the same things; and 3) needs that are currently fulfilled must not be overlooked.

Guba and Lincoln (1982) develop a definition of need that attempts to combine the discrepancy formula with Scriven and Roth's criteria for distinguishing between needs and wants. They present the discrepancy definition of "need" as the formula:

$$N_C = T - A$$

where N_C = a need candidate,
T = some target state, and
A = some corresponding actual state
(p. 312)

and then recount Scriven and Roth's (1977) attack on this definition of need as being easily manipulated according to a subject's determination of what is desirable and therefore "needed." For example, a person may wish to be a millionaire and, therefore, designate "being a millionaire" as

Table 2

Six Types of Discrepancy Needs

Type of "Need"	Description	Example
1) Normative need	An individual or group does not reach "some established standard"	Not receiving the Recommended Daily Allowance of vitamins and minerals
2) Felt need	A want based on what the group perceives as possible and socially acceptable	The American population's desire for unrestricted access to the medical system
3) Expressed need or demand	More people are willing to expend resources to get something than can be supplied	Long lines at the gas pump
4) Comparative need	One group receives a service and another group with similar characteristics does not	One school having a large and well funded sports program while another school in the same system does not
5) Anticipated or future need	The difference between what is currently available and what will be required in the future	The school size for the current number of students in a district and the size required to accommodate the predicted number in the future
6) Critical-incident need	Exists in the presence of failures that may rarely occur, but has dire consequences when they do	The need for insurance against fire, flood, or earthquake in the unlikely event that they may happen

the desired target state; but this does not mean that the person truly "needs" to be a millionaire. On the other hand, a person's desire to have enough money to buy food in order to survive could be considered a need because without it, the person would suffer dire consequences. Guba & Lincoln present a revised definition of need which attempts to filter out the more obvious wants attacked by Scriven and Roth:

> A need is a requisite or desideratum generated as a discrepancy between a target state and an actual state, if and only if the presence of the conditions defined by the target state can be shown significantly to benefit an S [subject] and the absence of those conditions can be shown significantly to harm, indispose, or constrain an S. (p. 313)

This definition would modify the original formula to look something like:

$$N_c = T - A$$

where N_c = a need candidate,
T = some target state, and
A = some corresponding actual state

if and only if:
a) T significantly benefits S (subject), and
b) the absence of T would pose significant hardship on S.

Stufflebeam et al. (1984) attempted to simplify the conception of "need." They drew from the dictionary to propose the following definition:

> A need is something that is necessary or useful for the fulfillment of a defensible purpose. (p.12)

This definition has two strengths. First, it is flexible in that it does not require a discrepancy conceptualization of "need." Second, it points out that needs do not exist independently. Because it is up to people to

decide what constitutes a "defensible purpose," needs are the outcomes of people's beliefs and values in a specific context. As an example, not even food and water automatically qualify as needs. Food and water only qualify as needs under the assumption that life should be sustained, and this would not be true in cases of euthanasia.

It is obvious from the above discussion that "needs" are difficult to describe. The term "need" is vague. There are many definitions of need, and it is easy to confuse needs with wants. However, it is very important to recognize that the type of need selected profoundly influences the needs assessment process and results, regardless of whether the people conducting the needs assessment are aware of how they are defining need.

HOW DOES THE ANALYST AFFECT THE NEEDS ASSESSMENT?

> *If you ask one hundred training and development professionals to recommend how to carry out a needs assessment for a given problem, you will receive one hundred very different suggestions.*
> *(Rossett, 1987, book cover)*

The above discussion of "need" illustrates how people's assumptions shape the specifics of how a needs assessment is conducted and the type of problems and solutions identified. People are making a decision as to what constitutes a need. It stands to reason that the process and outcomes of needs assessments are affected by the viewpoint of the particular person conducting the needs assessment. A brief exploration of how people's decisions and values influence needs assessments follows.

Needs Assessment Is a Form of Decision Making

Needs assessment can be conceived of as at least two levels of decision making. First, needs assessments result in decisions as to the *products*: the priority problems, causes and solutions. Second, each choice made by the person designing and conducting the needs assessment regarding methods to use, types of data to collect, who to consult, and in what order, can be considered decisions which make up the needs assessment *process*. Simon (1945) first drew attention to the importance of administration as a process of decision making rather than simply the carrying out of already made decisions. Similarly, this second level of decision making within the needs assessment process is important and should be studied.

Simon (1945) asserts that decisions are composed of both factual and ethical elements. The factual elements can be judged for correctness based upon some measurable "truth." For example, there either are, or are not, fifty students enrolled in a course. However, ethical elements in decisions are judged for correctness based on personal values. The assessor may feel that fifty students are far too many for one instructor to effectively teach; s/he may feel the enrollment is too low to justify the use of scarce resources; or s/he may consider the number of students unimportant. Thus, according to Simon, the ethical element is where personal values enter into decisions.

Guba & Lincoln (1982) have a definition of decision that is more detailed than Simon's. Whereas Simon spoke of decisions being made up of factual and ethical elements, Guba & Lincoln describe decisions as being a function of *varying degrees* of facts and values. Their two by two

matrix illustrating the forces present in a decision is displayed in Figure 1 .

Available Facts

Value   High   Low
Commitment

High

Low

Guba & Lincoln (1982) p. 318

Figure 1
Decision Making Matrix

Thus, although the decisions made in needs assessments may be partly based on fact, every decision is also influenced to some degree by the values of the individuals making the decision.

People influence decisions by the presence of their values in the *elements* being considered, as illustrated above. People's choices also influence the *process* in any series of decisions. Simon (1945) describes the three steps in decision making as follows:

1) the listing of all the alternative strategies;
2) the determination of all the consequences that follow upon each of these strategies;
3) the comparative evaluation of these sets of consequences.
(p. 67)

He is also quick to point out that a single person cannot possibly consider all consequences of all strategies. There are limits to how much an individual can think about at any one time.

Simon describes how point in time, knowledge, and group behavior limit the options examined in arriving at a decision. The point in time at which a decision is made affects the alternatives that are considered. For example, Tuesday's options are limited by Monday's decisions; or as Rossett (1982) points out, the temporal order in which data are collected in a needs assessment affects the type of data collected. On the most simple level, even the presence or absence of requisite knowledge limits the available choices. For example, a person can't consider an alternative that hasn't even come to mind. And finally, group behavior impacts decisions in that people tend to base their decisions upon guesses about other people's behavior. As an example, a performance technologist is likely to propose a solution he thinks the client is likely to accept. In describing decision making as limited by normal human capacities, Simon concludes: "It appears, then, that in actual behavior...decision is initiated by stimuli which channel attention in definite directions, and that the response to the stimuli is partly reasoned, but in large part habitual" (p. 91).

Individuals' Values in Needs Assessment

This brief examination of decision making illustrates how people's values easily and naturally enter into both the elements considered in every single decision and the process of any series of decisions. Numerous authors in the field of performance technology have acknowledged the existence of values in the needs assessment process. In describing needs assessment in curriculum development, English and Kaufman (1975) state: "No process in education can be 'value free,' for even professing no value is in itself a value" (p. 6). Harless (1985) goes

even further to suggest that the individual's values so directly impact needs assessment that the outcome is often predictable: "In fact, tell me the job title and I'll tell you the most probable solution which will be specified" (p. 5).

Guba and Lincoln (1982) directly address the existence of values in needs assessment in an attempt to control them. They assert that, like science, needs assessment is not value free: "needs cannot be determined except in terms of some value system (p. 312)" and urge that the values expressed in needs be identified, differentiated from facts, and accounted for in needs assessment methodology. Based upon their definition of need, Guba & Lincoln propose that "values enter into the process of needs assessment in *at least* six places":

1. The identification of the domain of target states. *[Physical, psychological and sociological are examples.]*
2. The designation of the particular target state to be used in determining the discrepancy between T[*arget*] and A[*ctual*]. *[Guba & Lincoln propose six possible target states resulting from crossing three levels: ideal, norm, and minimum; with two perspectives: personal and institutional.]*
3. The operationalization of T and A. *[That is, how Target and Actual states are defined.]*
4. The designation of the difference T - A that will be regarded as significant.
5. The determination of what shall constitute a "benefit" under the first of two tests for N_Cs [*need candidates*].
6. The determination of what shall constitute an "unsatisfactory" state under the second of the two tests for N_Cs. (pp. 313-316)

Guba & Lincoln make a number of suggestions for improving the needs assessment process by controlling values. Their suggestions include choosing to use the values of the stake holding audience whenever possible; following a process of identifying and then testing each needs

candidate according to the revised formula; avoiding standardized instrumentation; and the needs assessor employing special communication, teaching and negotiation skills in addition to the traditional technical skills.

However, like most of the literature on needs assessment, Guba & Lincoln's work emanates from introspection and conjecture rather than being based on research. The six points at which values enter into the needs assessment process may seem credible, and suggestions for improving the process appear to logically follow from the six points, but, to date, no one has observed how actual needs assessments are conducted to test the accuracy of Guba and Lincoln's list or the validity of their solutions.

Individuals Direct Needs Assessments

Recent literature in performance technology has begun to allude to the influence of the analyst's perspective upon the needs assessment process. Sleezer (in press) conceptualizes needs assessment as a "negotiated process" that is affected in part by the characteristics of the person conducting the needs assessment. Nickols (1990) argues that the "search space" of the analyst directs and focuses the needs assessment process. Using reasoning similar to Simon (1945), Nickols states that "the search for a solution must take place within some set of boundary conditions, within what might be termed a search space" (p. 13) and asserts that the search space "determine[s] where the analyst will look and for what" (p. 13).

In his more recent writings, Kaufman has cited Nickols and proposed that people can choose between two approaches to conducting

needs assessments (Kaufman 1990; Kaufman & Bowers, 1990; Kaufman & Stolovitch, 1991). He describes the reactive and proactive approaches as "mind sets" that affect what performance technologists do and, therefore, the results they get. He asserts that the proactive and reactive approaches affect choices as to which needs assessment tools are used, when they are deployed, and ultimately the nature of the results obtained.

Kaufman & Stolovitch (1991) describe these two approaches in greater detail and assert that they determine the intended beneficiary as well as the primary focus of the needs assessment. They begin the article stating: "Scratch any plan (or its planner) and you find a direction setting viewpoint. These perspectives--usually unexamined--dictate what the plan will deliver" (p. 51). The less desirable reactive approach is described as attempting to "make current things work better." The reactive approach attempts to determine the best possible result with the given constraints and obstacles in the situation. In contrast, the more desirable proactive approach attempts to change things before they break down and does not allow the constraints in the current situation to limit the search for the appropriate goal.

Kaufman & Stolovitch then introduce three levels of strategic planning from Kaufman's Organizational Elements Model: the mega-level, concerned with benefits to society; macro-level, concerned with benefits to the organization itself; and the micro-level, concerned with the performance of individuals and small groups within the organization. They suggest that the level of planning (or the intended beneficiary of the needs assessment) will determine the primary focus of the problem identified and solution proposed. According to this model, a proactive

mega-referent will be most creative and emphasize opportunities. A more reactive macro-level approach will focus on problems already existing within the organization, and the decidedly reactive micro-level approach will emphasize control and implementations at the level of the individual and small groups. Figure 2 graphically displays the relationship between the person's decision as to level of planning and the focus and emphasis that are likely to result.

DEGREE OF RELATIVE EMPHASIS

FOCUS/ FOCI

Opportunities/ Creative

Proactive Problems

Reactive Control & Implementation

Micro   Macro   Mega

SCOPE/LEVEL

KEY

Heavy Emphasis

Moderate Emphasis

Minimal Emphasis

Kaufman & Stolovitch (1991) p. 53
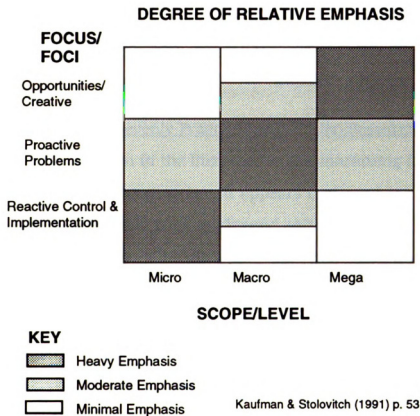
Figure 2
The Relationship Between Focus and Level in Needs Assessments

Once again, as plausible as Nickols,' Kaufman's and Kaufman & Stolovitch's theories on the relationship between the individual

conducting the needs assessment and the process and results of the
needs assessment may sound, there is no research to back them up.
Studies of people conducting needs assessments are needed to test Guba
& Lincoln's theory on where values enter into the needs assessment
process and substantiate or refute Kaufman & Stolovitch's theory on the
two mind sets and their relationship to needs assessment results.

WHAT DO WE CURRENTLY KNOW ABOUT NEEDS ASSESSMENT?

> *Despite the best of intentions, needs assessment is still more
> a goal than a reality.*
>
> (Rossett, 1990 , p.36)

Needs Assessment Is Unevenly Practiced and Under-Researched

A major preoccupation in the literature is the continuing failure of
needs assessment to fulfill its promise. It appears that needs
assessments are often not well done or skipped entirely (Rossett, 1990,
1992; Roth, 1978; Wanamaker, 1986). And even when done, the results
are rarely used in the later stages of the performance technology process
(Benjamin, 1989; Wanamaker, 1986; Witkin, 1984). In part, the quality
of needs assessments suffers because people experience a variety of
obstacles when trying to conduct them (Carron, 1977; Lewis, 1978;
Rossett, 1990; Sarthory, 1977).

Most of the reasons given in the literature for why needs
assessments are not done well can be placed in one of three categories.
First, factors in the environment inhibit the needs assessment. Local
politics can seriously curtail what data may be collected and the types of
problems and solutions that may be chosen (Carron, 1977; English,
1977; Sarthory, 1977; Stufflebeam et al., 1984). Organizations may not

be willing to supply the resources to conduct a needs assessment or support the results (Rossett, 1990, 1992; Witkin, 1984). Even a well funded and supported needs assessment could suffer from the communication gap between the needs assessors and the policy makers who must make use of the results (Witkin, 1984). Second, the poor quality of needs assessments is often attributed to the lack of skill or knowledge of the people conducting them (Rossett, 1990; Sarthory, 1977; Witkin, 1984). Particular examples include surveys which are poorly designed and the sole means of collecting data (Witkin, 1984; Roth, 1978)--and the failure of the assessors to define "need" (Roth, 1978). Third, existing models contain weaknesses when it comes to making the leap from theory to practical application. Many models skip or gloss over important steps such as how to report results and take measures to encourage application of the results (Wanamaker, 1986). Other models are highly theoretical and lack explicit "how-to" advice for conducting needs assessments (Rossett, 1987; Wanamaker, 1986). A specific example is the lack of attention to how items are created for surveys and interviews (Rossett, 1982).

Research on Needs Assessment

Remarkably little research has been conducted to substantiate these criticisms or to find ways to improve the process. As Burton & Merrill (1991) point out, most of the literature on needs assessment is discursive in nature. This literature may contain valuable insights from the authors' own experiences and observations, but it is not based on research which has tested the insights or validated recommendations. Only a few models can report any form of research having been

conducted; the most usual form of "research" was field testing during development (Wanamaker, 1986; Witkin, 1976).

Comprehensive searches have failed to turn up a single study documenting the reliability and validity of a particular model or an empirical comparison between models (Burton & Merrill, 1991; Witkin, 1976).[3] Therefore, there were not many research studies which could serve as a basis for this one. The very lack of research on needs assessment provides the impetus for a qualitative study of needs assessments as they are actually conducted. Three dissertation studies contributed to developing the purpose of the present study. A brief description of these three works follows.

Roth (1978) reviewed 108 needs assessment cases as described in studies, models, and papers and interviewed ten experts to develop a conceptual framework for needs assessment in higher education. She concluded that needs assessments were rarely well thought out and designed. The models and examples of needs assessments she studied were fairly evenly divided between an inductive approach which allowed participants to determine the need, and a deductive approach which solicited participants' opinions on a prespecified need or problem. Some of the limitations she identified include: the lack of a clear definition of need, a focus almost entirely upon the needs of those participating in the needs assessment, failure to take existing assets and resources into account, and over-reliance upon noninteractive surveys to gather data. Roth also found that more of the models tended to focus on "performance level needs assessment" (identifying the problem area) than on "treatment

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[3] The investigator located a single study that conducted research to validate a needs assessment model (Sleezer, 1990). However, as the study was located after the present study had been completed, it was not used to design the present study.

level needs assessment" (how to meet the identified need), or even confused the two.

Wanamaker (1986) collected 20 extant needs assessment models and used a survey to elicit practitioners' comparisons and uses of these models. Although he limited the models studied to specific types (Alpha and Beta according to Kaufman's 1977 taxonomy), he still found great disparity among the models' assumptions, purposes and procedures. He generated a "Unified Needs Assessment Model" whose eight major subcomponents were further subdivided into 47 decisions or activities. There was wide disparity in how each of the models matched his idealized one. He concluded that although there was prescriptive information available on how to conduct a needs assessment, it was "piecemeal and scattered" (pp. 211-12) and, therefore, inaccessible to most people. Most of the models failed to address how the information gathered was to be applied in later stages of the development process. He reports that "very little research evidence exists as to the ability of extant needs assessment models to produce the information they were designed to acquire" (p. 213). Only 5 of the 20 models studied could report any form of research having been conducted in connection with them.

Ng (1988) interviewed instructional design students who had conducted needs assessments as a course project. He was concerned about the gap between needs assessment theory and practice and had the goal of developing a "generalized model." Ng made a contribution to understanding how needs assessment is actually practiced (albeit by students) by collecting data on *how* 46 needs assessments were conducted as well as *what* influenced how they were conducted. Ng

presents how the subjects conducted their needs assessments in frequencies and sequences of activities or "action components." He reviewed the literature and compiled a list of contextual, situational, and personal variables thought to affect the needs assessment process. He then tabulated the frequency of these variables in each case and drew generalizations on how the variables influenced the needs assessment process.

Although each of these studies contributed useful information and ideas, their limitations also played a major role in developing the purposes of the present study. It is interesting to note that all three studies developed some type of generalized model of needs assessment, yet each demonstrates how existing needs assessment models deviate from the generalized ideal. It, therefore, seemed appropriate to use a research methodology that could be more flexible in accommodating disparate cases and explain why these deviations occur. All three studies collected data after needs assessments had been completed and relied upon the subjects' recall. Roth and Wanamaker assumed that models and published documents were accurate descriptions of how needs assessments were actually conducted. It seemed more appropriate in this study to follow a number of needs assessment cases, as they were actually being conducted, to observe the degree to which models were followed and to compare observations against documents and subjects' recall.

SUMMARY

This review of the literature on needs assessment has revealed that 1) there is not a commonly held understanding of what needs assessment is (as demonstrated by confusion over terminology and components) and the plethora of competing models for conducting needs assessments; 2) needs assessments are heavily dependent upon the definition of "need," which is difficult to define; 3) the analyst(s) conducting the needs assessment influence both the process and products of needs assessments; and 4) even though there are so many problem areas related to needs assessment, most of the literature is not based on research. Therefore, this review of the literature on needs assessment was consulted to design a study that attempted the following:

1) Rather than develop another model from which real life needs assessments deviate, the present study was to use an inductive approach to describe actual needs assessments in order to understand the current state of needs assessment in practice. This resulted in research question 1: "What do participants do in conducting a needs assessment?"

2) Because the literature on needs assessment is full of non-researched laments over how needs assessments are poorly done, skipped, or not used later in the performance technology process, the present study was to present research-based description of how these things might happen. This resulted in research question 2: "What factors facilitate and/or hinder the needs assessment process?"

3) And similarly, because the literature is largely discursive on the lack of use of needs assessment and there continues to be no research "proof" of the usefulness of needs assessment, the present study was to provide research-based descriptions of the outcomes of needs assessment. This resulted in research question 3: "What do participants learn in doing a needs assessment about the process and about the products?"

The methodology for accomplishing these goals will be discussed in Chapter III.

CHAPTER III

METHODOLOGY

INTRODUCTION

> *In general, case studies are the preferred strategies when 'how' or 'why' questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context.*
>
> *(Yin, 1989, p.13)*

The literature on needs assessment is filled with controversies over rival models and techniques, even definitions, but there is little research on needs assessment that demonstrates the practical effectiveness and efficiency of any of the claims. This was documented in the previous chapter.

A significant contribution can be made to the field of Human Performance Technology by research that leads to a better understanding of how needs assessments actually occur. Therefore, the investigator drew largely from qualitative research traditions to design an exploratory study for the purpose of describing and explaining how needs assessments are conducted and what is learned from them.[1] This purpose was best served by a multiple-case study approach which allowed the investigator to collect diverse kinds of data on actual needs

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[1] To avoid confusion, the term "researcher" will be used to refer to all people conducting qualitative studies. The term "investigator" will refer to the researcher for the present study.

assessments and to analyze the cases to generate findings. In the study, data were collected from fourteen people through observations, interviews, and examining documents before, during, and after they conducted needs assessments. Data were analyzed in several phases by looking for patterns and trends within and among the cases.

This chapter begins with an overview of qualitative research which guided the design and implementation of this study. The overview is followed by a discussion of "trustworthiness," the criteria by which qualitative studies may be judged on their accuracy and value. Then, the research site and sample are briefly introduced. The chapter concludes with a description of the phases of data collection and analysis used to gain insight on the process and outcomes of needs assessment. Much of the following discussion of key characteristics of qualitative research and descriptions of data collection and analysis techniques is drawn from Becker (1958), Bogdan & Biklen (1982), Lincoln & Guba (1985), Miles & Huberman (1984), Patton (1990), Tesch (1990), and Yin (1989).

AN OVERVIEW OF QUALITATIVE RESEARCH

Fieldwork refers to being out in the subjects' world, in the way we have described--not as a person who pauses while passing by, but as a person who has come for a visit; not as a person who knows everything, but as a person who has come to learn; not as a person who wants to be like them, but as a person who wants to know what it is like to be them.

(Geertz, 1979, p. 241)

Bogdan & Biklen (1982) identify five major characteristics of qualitative research:

1. Qualitative research has the natural setting as the direct source of data and the researcher is the key instrument.
2. Qualitative research is descriptive.
3. Qualitative researchers are concerned with process rather than simply with outcomes or products.
4. Qualitative researchers tend to analyze their data inductively.
5. "Meaning" is of essential concern to the qualitative approach.

(pp. 27-30)

The following is a description of the key characteristics of qualitative research and how each was implemented in the study.

The Natural Setting

A qualitative approach assumes that participants' actions are best understood when observed in the natural context. Thus, researchers put themselves in the natural environment within which the event or behavior of interest occurs. A qualitative researcher is willing to give up a sense of control over conditions and variables in order to be in a position to understand a situation from the participant's perspective. This study was not completely naturalistic in the sense that the participants were required to conduct a needs assessment, received guidance, and were primarily observed during fellowship on-campus

sessions rather than in their home institutions. However, it is natural to the degree that they were designing, conducting, and applying the needs assessment results for their actual work environments as part of a fellowship they had joined for that purpose.

The Researcher as the Key Instrument

Bogdan & Biklen's reference to the researcher as the "key instrument" is an acknowledgment that the research design, data collection, and analysis can be influenced by the researcher. As an example, the data collection in this study was dependent upon what the investigator perceived and recorded. Qualitative researchers must be able to recognize and, as much as possible, filter out personal assumptions and biases in order to understand an event from the participants' points of view. As part of the control over the researcher's interaction with the data, the researcher also should collect data on thoughts and feelings during the study. Therefore, the data collected from participants and the investigator's own thoughts and feelings were considered when analyzing data in the present study.

Qualitative Research Is Descriptive

Bogdan & Biklen's second point, that qualitative research is descriptive, was clearly useful in accomplishing the purpose of this study. Verbal descriptions were the best available medium for capturing the participants' behaviors and perceptions as they went through the needs assessment process. Most of the data on the participants and the context were captured in words. In some qualitative studies, portions of the information may be summarized in simple numerical forms (in synopses) such as frequency counts, time percentages, and

questionnaire results. But in qualitative research, numbers are used primarily to support narrative descriptions of events and behaviors. The understandings that have been generated from this study most often will be reported in quotations and descriptions of behavior rather than being reduced to numbers. When appropriate, synopses including frequencies and percentages will be presented.

Concern with Process

The third characteristic, the concern in qualitative research with process over outcomes or products, is suitable for studying the *process* of needs assessment. Although the outcomes of needs assessment were an important element of the study, a major concern was the processes by which the outcomes were determined. Many qualitative studies have demonstrated that focusing on process can generate an understanding of how the outcome occurs, such as the qualitative studies of self-fulfilling prophesies (Bogdan & Biklen, 1982).

Data Are Analyzed Inductively

Bogdan & Biklen's fourth characteristic of analyzing data inductively is particularly suited to the purpose of this study which required a research approach capable of generating theory. Numerous authors describe qualitative research as being flexible, allowing a researcher to adjust research design and methodology in the process of constructing theory. This investigator feels that there is not enough existing research on the needs assessment process to generate hypotheses which could be proved or disproved in this study. Instead, a "bottom up" approach, in which theory is developed and adjusted as data are collected, is appropriate. Glaser and Strauss' (1967) "grounded

theory" in which data collected earlier in the research direct the later course of the research provides justification for this approach.

Meaning Is of Essential Concern

Finally, Bogdan & Biklen's fifth characteristic, the primary concern with "meaning," relates to the heart of the intended study. Qualitative research is based in the phenomenological approach which strives to capture participant perspectives as accurately as possible. The qualitative researcher is interested in understanding how participants think and develop the perspectives that they hold--or the "meaning" people give to their experiences. This is important to all qualitative researchers because they believe humans do not react directly to stimuli, but that participants filter stimuli and choose responses according to their perceptions. Qualitative researchers accept Weber's premise that "the significance of cultural events presupposes a *value-orientation* towards these events" [1949, p. 76] and attempt to understand what is significant from the participant's "value-orientation" or perspective. This approach is supported by Blumer's (1962) concept of symbolic interaction which argues that participant observation is better than detachment for controlling bias, and understanding what is really going on in a given situation. Since the purpose of this study was to better understand the process and outcomes of needs assessments in actual practice, a qualitative approach which aimed to describe and explain the "meaning" of what was going on from the practitioner's perspective was most appropriate.

As demonstrated above, each of the five key characteristics of the qualitative approach are suited to this study. The investigator studied

the participants in a natural setting and used herself as the key data collection instrument. The results are reported in narrative form. The major focus of the study's research questions is with process rather than outcomes or products. So little has been conducted on this research topic that inductive analysis is preferred over hypothesis testing. Finally, and perhaps most important, the concern with meaning (from the qualitative approach) is directly related to the purpose of the study. In order to truly understand how individuals conduct needs assessments and what they get out of the experience, it is necessary to understand what the process means to those individuals.

CRITERIA FOR EVALUATING QUALITATIVE RESEARCH

But basically, there is only one requirement for research: that you can persuade others that you have indeed made a credible discovery worth paying attention to.
Tesch (1990, p.71)

Various authors describe how qualitative research differs from more quantitative forms of research. Lincoln & Guba (1985) assert that because the two research traditions operate on different paradigms, it is not appropriate to judge qualitative research by traditionally quantitative standards. Therefore, they propose four criteria for establishing the "trustworthiness" of all research, then describe how these criteria are accomplished differently in qualitative research. Table 3 lists each of the four criteria of trustworthiness and compares how they are established in quantitative and qualitative research.

Table 3

Criteria for Establishing Trustworthiness of Research

Quantitative Research	Overarching Criteria	Qualitative Research
Internal validity	Truth value	*Credibility*
External validity	Applicability	*Transferability*
Replicability	Consistency	*Dependability*
Objectivity	Neutrality	*Confirmability*

In this qualitative study, the design, data collection, and analysis processes were guided by methods for establishing trustworthiness. A description of how each of the criteria were implemented in this study follows.

Credibility

Credibility refers to the degree to which the reader can trust that the study is a "truthful" representation of the phenomena of interest. In this study, the techniques of prolonged engagement, triangulation, negative case analysis, peer debriefings, and member checks were used to establish credibility. First, the study was conducted over a prolonged period of time so that the investigator could learn about the context and build trust with the participants. This practice made it less likely that respondents distorted their behavior in the investigator's presence. Triangulation was accomplished by comparing data collected from different sources and through different methods. Negative case analysis occurred when findings generated from some portion of the data were then compared to different cases. In this way, the findings were refined

until they could account for all the cases. Peer debriefings tested working findings on other people, worked out some of the methodological challenges that arose, and vented feelings that could impair judgment. And finally, member checks in which participants responded to what was being discovered occurred throughout the study.

Transferability

The criteria of transferability helps the reader determine how applicable the findings of a particular study may be to another context or group of subjects. In qualitative research, this is accomplished by providing "thick description," vivid prose passages, and synopses to describe both the phenomena of interest and the context and subjects. In this way, qualitative researchers are not required to say how the information in a study may be used (external validity). Rather, they are responsible for supplying a data base that is rich enough in details so that readers may determine for themselves what may be transferable. The present study supports findings with thick description so that readers may determine transferability for themselves.

Dependability

Dependability refers to the likelihood that the study is consistent; in other words, similar findings would be generated from similar respondents in a similar context. Establishing dependability for qualitative research differs from establishing reliability in quantitative research because the qualitative approach assumes that respondents and context are constantly changing; therefore, no study can be repeated exactly. (This is much like "You cannot step into the same river twice.") Dependability was addressed in this study by leaving a data trail which

could be used to conduct an inquiry audit of both the processes and products of the study.

Confirmability

Finally, confirmability refers to the degree to which a study's findings are the results of the participants and the context and not influenced by the researcher's biases. Confirmability was established in this study through confirmability audits, triangulation, and a reflection journal. The investigator maintained a data trail which could be closely examined to determine where and how biases were introduced. Portions of the data were reviewed by people not involved in the study to see if they concurred with the investigator's insights.

Triangulation, mentioned above as the collection of data from multiple sources through multiple methods to establish credibility, also operated as a control on bias. A specific example of triangulation is the comparison of the investigator's perceptions of the participants and setting with that of a peer observer as described in Chapter IV, "The Participants and Setting."

The investigator kept a collection of her thoughts, feelings and frustrations during the course of the study in a reflection journal. This journal not only formed part of the data trail, it was also used by the investigator as an indicator of where feelings or perspectives may have threatened the neutrality of the research. The design and implementation of the present study are presented in the remainder of this chapter.

RESEARCH SITE AND SAMPLE

The Setting and Participants

This study was designed to provide a description and explanation of the process and outcomes of need assessments as they occur in actual practice. The focus was on the needs assessments of 14 physicians conducted as part of a curriculum development effort in a medical education setting. The setting of the study was a faculty development fellowship for primary care physicians employed in medical education.

Approximately twenty physicians in primary care (pediatrics, family medicine, or internal medicine) participate in the fellowship each year. These physicians (to be referred to as "fellows") are from all over the United States as well as Puerto Rico. The fellowship consists of two components. For the first component, the fellows attend five weeks of on-campus training in four sessions spaced between September and June (Refer to Appendix C for sample schedules). For the second component, in between the four sessions, fellows complete assignments and a major project at their home institution while carrying on their usual roles at work.

Fellows attend workshops and complete assignments according to which of three available fellowship tracks they select. The eligible subjects for this study were the 14 fellows who selected the "curriculum track." These "curriculum fellows" attended a half-day workshop on needs assessment, designed and conducted a needs assessment as an assignment, then incorporated needs assessment recommendations into their required final project, a curriculum document with an overview of the entire curriculum and a detailed description of a single unit of instruction.

The fellows were informed of the study in a presentation and invited to participate. All of the fellows agreed to participate in this study (refer to Appendix D for sample consent forms). This allowed the investigator to collect data on all fourteen fellows who had selected the curriculum track (to be referred to as "participants") as well as the seven fellows in the research track who would often be interacting with the participants. Data were collected through observations, interviews, and documents, and all 14 cases were compared for confirming and disconfirming evidence of findings.

Selection Considerations

The context was considered appropriate for the study because it presented the relatively rare opportunity to study individuals learning about, conducting, and applying results of their first needs assessments. The context and participants also were chosen for the study based on the more pragmatic criteria of access. Hammersley & Atkinson (1983) identify three main access issues for qualitative research: 1) negotiating entry to the site with gatekeepers, 2) maintaining unobtrusive presence at the site through appropriate activity, and 3) being trusted by the subjects. The investigator had ready access to the proposed site and subjects as she was employed by the fellowship in the role of graduate assistant. Site gatekeepers indicated that she would be allowed to observe fellowship activities, interview participants with their permission, and use documents generated by participants for her study. The role of graduate assistant justified the investigator's presence when making observations and provided opportunities for informal interactions with the participants. And, finally, the investigator had reason to suppose

that her relationship with participants was based upon trust and would facilitate collection of accurate data.

The investigator's dual role as both assistant and observer presented a major threat to the validity of the study. However, this threat is common in qualitative studies employing participant observation. As mentioned earlier, Blumer's (1962) theory of symbolic interaction asserts that the potential benefits from working with and among the participants are well worth the risks to validity (and, in fact, prevents a far worse form of bias). In most instances, the investigator's paid role as a helper blended well with her desire as a researcher to non-judgementally understand what was going on from the participants' perspectives.[2] The investigator used a number of techniques to control the threat to validity and establish trust and open communication with the participants.

DATA COLLECTION GUIDES AND PROCEDURES

In qualitative studies, data collection is intertwined with analysis. This study was comprised of a series of data collection and analysis phases. Each phase was guided by theory that emerged in previous phases. Comparative analysis, in which findings are generated by examining and comparing data from a number of cases, was used (Glaser and Strauss, 1967; Lincoln & Guba, 1985). In order to respond appropriately to the insights that emerged from the data, adjustments were made to data collection and analysis tools and the research

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[2] See Appendix F, "Peer Observer's Description", for more details. The peer observer corroborates the investigator's own perception that, with a few exceptions, the investigator's presence did not significantly alter the participants' behaviors.

questions and conceptual framework were revised over the course of the study (See appendix A for a discussion of the changes). In order to establish the trustworthiness of this study, the data collection process included the creation of an audit trail documenting these changes.

The study involved collecting data from a variety of sources over a period of time. In the next sections, an overview of the time sequence and the method of comparative analysis are followed by a detailed description of the data collection and analysis techniques. Refer to Table 4 for a visual display of the phases of the study.

Time Sequence

This study was designed to collect and analyze data in five phases spanning a ten month period. The first phase began with data collection in the period of September 8 - 15, 1992 when the participants arrived for their first on-campus fellowship session. The most general forms of data collected at this time included backgrounds of the participants and descriptions of the context. More focused data were collected between September 16 and 18 in the second data collection phase, when the participants were exposed to needs assessment concepts and methods in a workshop and began designing their needs assessments.

The third phase of the study occurred between mid-September and early November when participants conducted needs assessments at their home institutions. Data from Phases I and II were examined and interview guides were constructed to collect more focused information from faculty and participants. Participants were contacted at least once during this time period to collect data on their perceptions during the

Table 4

Phases of the Study

Time	Purpose	Interviews	Observation	Documents
Phase I: **Session 1** **September** **8 - 15**	Data collection: Enter site and collect general data on context and background of participants (Ps)	*Through informal interactions Emphasis on relationship building and developing trust	At selected points in time during session: * Workshops * Lunch periods * After hours	* Application * Site visit report * Needs Assessment (NA) questionnaire to all Ps * Major project draft * Copies of some workshop exercises
	Data Analysis: Read through early data to become familiar with Ps and context, and to discover "holes" where more data is needed			
Phase II: **Session 1** **September** **16 - 18**	Data collection: * Ps learning about NA * Ps designing NA	* Informal interactions Asking elaboration on Ps' comments and behaviors related to NA	* NA workshop * Feedback session in which NA workshop is evaluated * Other times during session	* Copies of exercises generated during NA workshop
Phase III: **Time** **between** **sessions**	Data Analysis: * Examine Phase I & II data to construct interview guides			
	Data collection: While Ps are in process of conducting NA at home institution	* Phone interview with participants * Interviews with fellowship faculty who are mentors of Ps		
	Data Analysis: * Post interviews, begin to construct cases and compare them to generate tentative hypotheses			
Phase IV: **Session 2** **November** **2-6**	Data collection: On process and outcomes of now completed NA	* Informal interactions.	* Selected points in time during session * Tape mentor group meeting discussing needs assessment process and outcomes	* Written NA report * Annotated Bibliography assignment
Time **between** **sessions**	Data collection: Through informal interaction with Ps and fellowship faculty to add details, clear up confusions	* Phone conversations with Ps * Conversations with fellowship faculty		* Final project contract
	Data Analysis: * Construct individual case stories and compare for patterns and trends * Identify hypotheses to be checked in final phase of data collection			
Phase V: **Session 3** **February** **1 - 5 1993**	Data collection: * Seek confirming & disconfirming evidence of hypotheses * On personality types	* Informal interactions * Exit interview	* Workshop on personality types * Selected times during session	* Curriculum document * Personality type indicator results
Through **June 1993**	Conduct member checks	* Phone conversations * Individual member checks (June, 1993) * Presentation of study hypotheses to Ps (June, 1993)	* Conference presentations (June, 1993)	
	Data Analysis: * Full blown analysis with member checks			

actual needs assessment process. In the later stages of Phase III, data from Phases I and II were combined with data collected from Phase III interviews to begin to construct case studies and compare them to generate tentative findings.

The fourth phase began during the week of November 2 - 6 when the participants were again attending an on-campus session. Much more detailed data were gathered on how the participants conducted their needs assessments (which had been recently completed). Phase IV continued through the two-and-a-half month time period between the November and February on-campus sessions. This period was primarily used to analyze data, but participants were contacted to clear up discrepancies in the data or solicit feedback on emerging insights as necessary.

The fifth and final phase of the study began with the week of February 1 - 5 when the participants returned for their third on-campus session. Exit interviews were conducted to find confirming and disconfirming evidence of the findings that had been developed from analyzing data collected during earlier phases. Data were also gathered in the form of an instrument to measure personality type. In the period between February and June, a comprehensive analysis was performed in which all forms of data were again examined to develop case studies which were then compared and contrasted. In June, when the analysis was almost completed, the investigator conducted member checks to clear up discrepancies in the data and solicit feedback on findings and conclusions.

Sampling Within Cases

This study was designed to collect various types of data in a manner that allowed for sampling within the case. Hammersley & Atkinson (1983) describe the decision of where and when to collect data, as well as whom to observe or ask questions as "sampling from the data available in the case." They go on to say, "very often this sampling is unwitting, but it is important to make the criteria employed as explicit and as systematic as possible, so as to try to ensure that the case has been adequately sampled" (p. 46). They identify the three major areas to be sampled as time, people, and contexts.

Time. In order to sample across time, as described above, data were collected during five time periods over a ten month period covering before, during, and after the needs assessments were conducted. Time within each of these periods was also sampled by selecting a limited number of events to observe (such as workshops, lunch periods, or breaks). There was an attempt to collect data on both routine activities and particularly salient events during this time sampling.

People. There was also sampling of people in the setting. More data were collected on three specific participants whose connection with the investigator as their mentor created more opportunities for interaction. However, tabulations of data collected were maintained to insure that there was enough data collected through interviews, observations, and documents on all fourteen participants to be able to adequately construct their case studies. This sampling of people allowed an insight that developed from one participant to be tested against data collected on the remaining participants, a technique within the method called comparative analysis. Sampling of people also extended to

individuals interacting with participants in the study. This included collecting data from other fellows who were not in the curriculum track, as well as from fellowship faculty and staff.

Contexts. Sampling across contexts is necessary because people may behave differently in what they perceive to be different contexts. The study was designed to sample across contexts by collecting data in a variety of formal and informal situations during the on-campus sessions of the fellowship, as well as from participants at their home institutions. In addition, documents were also collected across a variety of contexts including in-process workshop exercises and formal final reports.

Comparative Analysis

Sampling within cases across time, people, and contexts yields data that must then be analyzed in order to arrive at the key factors which describe the phenomena of interest, or study findings. In the present study, findings were generated and verified by a process of comparative analysis which involves categorizing data through convergent and divergent processes. First, data are converged into categories. These categories describe the phenomena that are relevant to all the data contained within the category. Then, in a divergent process, the data are reviewed and each of the categories are refined until they account for all the relevant data and exclude all other data in other categories.

In the present study, comparative analysis was performed primarily through two activities. First, the entire data set for each participant was searched for instances of supporting and contradictory evidence prior to attributing a discovery to that individual. This means

that on the tables in Chapter V, "Research Findings," every item attributed to an individual (usually indicated by a check mark) is based on a <u>minimum</u> of one source of evidence from observations, interviews and documents with <u>no</u> contradictory evidence from these sources.[3]

Second, in a divergent activity, discoveries for each participant were compared across all participants. This activity 1) determined whether there was any evidence from one or more participants that contradicted the discovery for the rest of the participants, 2) required that the discovery be better defined in order to account for all instances before it could be considered a "finding", and 3) established the prevalence of each finding. In most of the Chapter V tables, categories of related phenomena (or "discoveries") are presented as columns, participants are listed in rows to indicate individual evidence for each category.

Nature of Fieldnotes and Types of Data Collected

The study was designed to collect data from three primary sources: observations, documents, and interviews. All three forms of data were collected as fieldnotes of the study. The types and formats of fieldnotes are discussed below. The general approach of each data collection method will then be described, followed by an explanation of how it was specifically implemented in this study.

<u>Fieldnotes</u>. Data were recorded in the form of field notes. Bogdan & Biklen (1982) describe fieldnotes as: "the written account of what the researcher hears, sees, experiences, and thinks in the course of

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[3] Tables which compiled evidence from a smaller portion of the data set (for example, only written answers on a particular worksheet) are clearly identified as such.

collecting and reflecting on the data in a qualitative study" (p. 74). As this quotation suggests, the data recorded in the fieldnotes not only included descriptions of the context and the participants' behaviors, but also detailed the investigator's thoughts and feelings while conducting the study.

The fieldnotes fit the categories of **descriptive** and **reflective** fieldnotes discussed by Bogdan & Biklen (1982). **Descriptive fieldnotes** are detailed accounts of what the researcher observes about the environment as well as what the participants do and say. Every effort was made to collect only descriptive detail and avoid summarizing and evaluating what was observed. Summarizing and evaluating was, in part, controlled by quoting rather than summarizing the words of participants, and by striving to use concrete rather than abstract words in descriptions. Examples of the types of entries recorded in the descriptive fieldnotes include: physical descriptions of the environment and participants (including drawings of the environment, such as room and seating arrangements); reconstructions of participants' conversations, including gestures and facial expressions; accounts of participants' behaviors; and observations of the investigator's behavior within the context as a control of how the investigator's presence might affect the data gathered. Collecting detailed descriptive data was intended to result in capturing a "slice of life" in rich detail that could be combined with reflective fieldnotes to be analyzed.

Reflective fieldnotes can take a number of forms and have the purposes of recording 1) the researcher's feelings and biases, 2) the chronological account of the methodology of the study, and 3) the theory as it is evolving over the course of the study. Reflective fieldnotes are

particularly helpful in interpreting descriptive data in light of the researcher's feelings or the state of the theory at the time the data are collected. Types of reflective fieldnotes generated in this study include: in-process analyses and theory generation reflecting what the investigator had been learning; comments on methodology and study design; reports of ethical dilemmas; descriptions of the investigator's moods and assumptions during the study; and notes on inconsistencies or points of confusion to be rectified later in the study. Reflective fieldnotes of these types provided a basis for interpreting the descriptive data collected in observations, interviews, and documents.

Procedures for recording descriptive and reflective fieldnotes were developed for this study. First, the investigator kept two journals throughout the course of the study. The "field journal" contained all descriptive fieldnotes and reflective fieldnotes which occurred to the investigator while in the field. The field journal was constantly carried by the investigator during the study. The reflective portions of the field journal were clearly labeled to differentiate them from the descriptive notes. The second journal, called the "reflection journal," was used to record thoughts on the study while away from the field. This journal contained more extended thought pieces which were entered after processing each day's field notes as well as at times when the investigator was not actively in the field. Examples of items in the reflection journal included "theory memos," which were chronological snapshots of the investigator's developing understanding of the phenomena of interest, decisions as to next steps in methodology and changes in research design, and personal diary entries which recorded the investigator's feelings and assumptions during the study.

The format of these two journals was developed to facilitate analysis of the data. There were wide margins to leave space for coding during the analysis phases. Each new idea or action was a separate paragraph so the notes could later be easily separated, coded, and sorted by coding category. Each fieldnote had a heading to indicate date, time and place, clear labeling of type of note, and a list of who was present.

A number of procedures were implemented to improve the accuracy of the data entered into fieldnotes. First, all fieldnotes were generated as soon after observations as possible--and during the observations, if possible. Second, the investigator made every attempt to process fieldnotes without first discussing them with others. Throughout the study, discussions of the study with other people were also entered in the appropriate journal. Third, observations, interviews, and results of document examinations were processed into the computer as soon after collection as possible. Wordprocessing of the data allowed for a second examination at a time when the investigator's memory was likely to recall phenomena with greater detail and accuracy. This also allowed a second opportunity to remove summaries and interpretations from descriptive data. The wordprocessing process also facilitated physical manipulation of the data during analysis and created backup copies.

Observations. As indicated in Table 4, the investigator observed the participants in a variety of contexts during their on-campus sessions. In the beginning, the investigator needed to adjust her method of recording observations according to the participants' level of comfort with being observed. For example, during workshops, the investigator's extensive note-taking was not particularly noticed by fellows in the

classroom setting. But when the investigator obtained data in an off-hand comment from a participant while walking down the hall, it was more appropriate to keep the words and other details in mind until she reached a private area to record the data in her field journal.

These observations collected data before, during, and after the needs assessment had been conducted (See Appendix C for sample fellowship schedules). In Phase I of data collection, the most general forms of information was gathered on the participants and the context across a variety of situations, and all workshop sessions were observed. The emphasis of Phase II was collecting data about how the participants first learned about and designed their needs assessments. The needs assessment workshop on Wednesday morning of September 16 was a key observation period. Observation periods for Phases IV and V of the study were selected after analyzing data from Phases I, II, & III. In Phase IV, when the participants had completed their needs assessments, observations were selected which would likely yield the most data on participants' needs assessment processes and the results obtained. For example, the workshops on "Determining Curricular Goals and Content" and "Instructional Objectives & Enabling Content" were observed to see how participants were applying what had been learned from the needs assessments to their curricula. A key activity for observation was the half-day mentor group meetings in which participants discussed their needs assessment process and results in small groups. This session was taped and transcribed and contained detailed descriptions of how each participant conducted his or her own needs assessment as well as the questions they asked and the advice they gave in reacting to other's needs assessments. In Phase V, the major emphasis was on collecting

confirming and disconfirming evidence of findings generated from analysis of earlier data.

Documents. Both **personal** and **official** documents were collected. Bogdan & Biklen (1982) define **personal documents** as "any first-person narrative by an individual which describes his or her own actions, experiences, and beliefs" (p. 97). The major type of personal documents collected in the study were copies of participants' exercises during workshops. As these personal documents were created without much time for reflection or screening for an outside audience, they were more likely to accurately reflect the participants' own thoughts.

The second type of document collected yielded a very different type of data. Bogdan & Biklen (1982) caution that **official documents** are "viewed by many researchers as extremely subjective, representing the biases of the promoters and, when written for external consumption, presenting an unrealistically glowing picture of how the organization functions" (p. 100). Keeping in mind the dictum from Weber, "the significance of cultural events presupposes a *value-orientation* towards these events" [1949, p. 76], the investigator believed these official documents were valuable for the very biases they presented. Examples of official documents gathered for this study include fellowship applications and participants' needs assessment reports and curriculum documents. These official documents were not relied upon to develop descriptions of participants' needs assessment processes. Instead, greater reliance was placed on information gained in observations and interviews to reconstruct participants' needs assessment processes, and

the official documents provided data on what the participants felt was most important to emphasize for external consumption.

Interviews. In this study, interviews resulted in data that were used in conjunction with observation and document analysis. According to Hammersley & Atkinson (1983), interviews are intended to gather descriptive data in the participant's own words for two purposes: first, to obtain information on particular phenomena, which can be gathered as participants describe the situation and their own actions; and second, for indications of the participant's perspective on the phenomena being studied. For the purpose of this study, it was important that interviews were conducted not only to gather information on the needs assessment process, but also to better understand the participants' viewpoints on needs assessment.

Bogdan & Biklen (1982) define an interview as "a purposeful conversation, usually between two people (but sometimes involving more) that is directed by one in order to get information" (p. 135). This definition is purposefully broad to allow for data collection across a wide selection of interviewing situations. Interviews can be conducted with one or many participants, be scheduled or occur spontaneously, continue over a short or long period of time, in informal or formal situations, depending upon what is available within the context and suits the purposes of the study. In this study, interviews were focused on topics related to needs assessment. All interviews were comprised of open-ended questions of a non-directive nature. In each interview, the investigator endeavored to first put the participant at ease before probing for details and examples, then avoided evaluating, interrupting, or

changing the topic, so that data unanticipated by the investigator could emerge.

As indicated in Table 4, the majority of interviews were of an informal and impromptu nature, occurring spontaneously while the investigator was interacting with participants. These **informal interviews** usually began in one of two ways. First, when participants spontaneously offered comments that the investigator felt were related to the study, the investigator responded with open-ended questions asking the participant to elaborate, clarify, or explain the comment. Second, the investigator initiated informal interviews by approaching a participant and asking for the participant's viewpoint on some issue, or by asking for clarification on some observed behavior. In Phases I, II, IV, and V, interviews of the types described above were referred to as occurring "through informal interactions."

This study also included two **formal interviews**. Interview guides were developed and interviews were conducted according to the guidelines of Patton (1990), Rossett (1987), and Zemke & Kramlinger (1982). The interview guides and procedures were piloted and revised before being used with participants (refer to Appendix E for copies of the interview guides). Both of the formal interviews were scheduled in advance with the participants. Notes were taken during the interviews and expanded within 24 hours. The first formal interview, which was conducted over the phone, occurred in Phase III of data collection when participants were back at their home institutions. This interview, conducted while the participants were in the midst of the needs assessment process, was designed to yield detailed information about the participants' decisions and concerns that could have been skipped when

participants recounted what they had done after the needs assessment was completed. A second formal interview was conducted with all of the participants during Phase V of data collection. This formal interview sought confirming and disconfirming evidence of findings that had been generated by earlier data analysis, and elicited individual participants' perspectives on what can be learned from doing a needs assessment.

CODING AND ANALYSIS

> *Data analysis is the process of bringing order, structure, and meaning to the mass of collected data. It is a messy, ambiguous, time-consuming, creative, and fascinating process. It does not proceed in a linear fashion; it is not neat. Qualitative data analysis is a search for general statements about relationships among categories of data; it builds grounded theory.*
> *Marshall & Rossman, 1989, p.112*

The General Approach to Analysis

Qualitative research is intentionally flexible in its design and methods so that data collection and analysis procedures do not constrain what can be understood from the participants and the context. However, this flexibility can create a great deal of anxiety for the novice qualitative researcher because there is no prescriptive model to be followed for analyzing the data. Instead, data are intended to be analyzed in a way that results in an accurate depiction of the phenomena of interest. The data analysis procedures followed in this study were largely drawn from Lincoln & Guba (1985), Miles & Huberman (1984), Tesch (1990), and Yin (1989).

Tesch (1990) performed a comprehensive review of analysis

descriptions of a wide variety of types of qualitative research and

identified ten principles and practices of qualitative analysis:

1. Analysis is not the last phase in the research process; it is concurrent with data collection or cyclic.
2. The analysis process is systematic and comprehensive, but not rigid.
3. Attending to data includes a reflective activity that results in a set of analytical notes that guide the process.
4. Data are 'segmented,' i.e., divided into relevant and meaningful 'units.'
5. The data segments are categorized according to an organizing system that is predominantly derived from the data themselves.
6. The main intellectual tool is comparison.
7. Categories for sorting segments are tentative and preliminary in the beginning; they remain flexible.
8. Manipulating qualitative data is an eclectic activity; there is no one 'right' way.
9. The procedures are neither 'scientific' nor 'mechanistic.'
10. The result of the analysis is some higher-level synthesis.

(pp. 95-97)

These ten principles and practices were applied in the analysis

conducted for this study.

As described in the data collection section, great care was taken in

how data were selected as well as how data were collected. This was

done to help establish the trustworthiness of the study and to facilitate

analysis. The data collection and analysis process is documented in the

audit trail for the study, which consists of all original forms of data, the

wordprocessed data, index cards created for the sorting process, and the

final case report as represented by this dissertation.

Throughout the study, handwritten fieldnotes from observations

and notes from interviews were processed into the computer. Reflective

journal entries and theory memos were composed on the computer. As

the piles of data grew, a system of files was developed. First, each source

of data was kept in its own file. There were files for each of the observation sessions, interviews, types of documents collected, and notes on developing theory. A two volume notebook was created of all the workshop handouts and communications the fellows received from the fellowship faculty. Second, data sources were also combined to form files for individual participants. These individual files contained copies of documents by and about the participant, transcriptions of all interviews conducted with the participant, and portions of observation sessions and reflective notes generated by the investigator relating to the individual. This dual filing system facilitated the analysis process as information could be easily retrieved and reviewed either for all participants for a single event, or for a single participant across all events.

Levels of Analysis

Level I. Three levels of data analysis were conducted over the five phases of the study. The first and simplest form of analysis occurred during the early phases of the study. The first level of data analysis consisted of repeatedly reading through the data in search of possible trends or categories. These initial insights were then turned into codes which were applied to the data. Codes that did not seem to fit were modified; others that were overused were split into smaller components during the process of matching the emerging codes to the data set. What was learned from this early coding effort contributed to the construction of the interview guide used in Phase III of the study.

Level II. The second level of analysis occurred primarily during Phases III & IV of the study and consisted of constructing individual case studies and comparing them to generate tentative findings answering the

three research questions. Pieces of information from the interviews conducted in the midst of the needs assessment process were written on cards, sorted for themes, then transferred to grids on large sheets of paper. The grid was formatted so that a row represented a single individual; a column represented all of the evidence for a particular insight. The later portion of this second level of data analysis included the compilation of detailed case studies on three of the participants. These detailed case studies were constructed by compiling all available data on a participant and constructing a chronological story. Each case study resulted in more than 30 pages of text. In Level Two, the analysis identified more working findings and areas where additional information was needed.

Level III. The third level of analysis occurred during the later portion of Phase IV and throughout Phase V. It consisted of a comprehensive review and comparison of all data collected in the study according to the constant comparative method of data analysis. Level Three analysis closely followed the operations of unitizing, categorizing, summarizing, and conducting member checks as described by Lincoln & Guba (1985) and Miles & Huberman (1984).

Unitizing. First, all data were broken into units containing single ideas. Several passes were made through all fieldnotes to identify the units. These units were coded to identify, at a minimum, the source of information, participant referred to, and context. For example, a participant's response in an interview would be coded with the participant's initials, a code indicating the data source as the interview, the question being responded to, the order of this comment in the interview, the order number, and date of the interview. Colors also were

used to differentiate data sources. This type of identification coding avoided confusion when the data were later separated and sorted. Each identified unit was then printed off onto a 4" x 6" card. The unitizing process resulted in approximately 2500 cards.

Categorizing. The cards were then sorted to create categories. They were first sorted into piles corresponding to the three research questions. The three piles were further subdivided by combining cards that described similar phenomena. Each of these smaller piles of related cards was reviewed to determine the nature of the "category" they described. The investigator then wrote "rules" that described the categories in such a way that all the related cards would be included.

Whenever a card applied to more than one category, additional copies were made and added to each category. Color coding of the data sources proved especially beneficial at this stage of analysis, because it took only a glance to determine whether the category was reliant upon a single collection method. For example, if all the cards in a particular pile were white, it meant that all the units of related data came from the exit interview. The investigator would then look to see whether there was support for the category from other sources, as well as whether some other source held contradictory evidence. Each of the piles could also be checked for the number of participants that had contributed data to the category. For example, in some instances, only one or two participants had contributed data to a particular category. The investigator would then look for supporting and contradictory examples from other participants. In this stage of the process, categories were subdivided and merged as appropriate, and rules describing the categories were refined.

Over continued cycles of sorting, the categories stabilized and a pattern began to emerge as related categories were arranged near each other.

Summarizing. The third operation in this third level of analysis consisted of summarizing the data into a format that would be readily comprehensible to others. Data displays as described by Miles & Huberman (1984) were constructed from the categorized cards. The intent of these displays was to show the amount of data support for the description of how the needs assessments were conducted and what the participants had learned from doing them. Preliminary versions of these data displays were shared with the participants in the member checks that were conducted in June. Data displays were also shared with others who had not participated in the study for input on how to make the displays easier to interpret and whether they supported the accompanying written text. The final version of the data displays is presented as tables in Chapters IV, V and VI.

Conducting member checks. The fourth operation, conducting member checks, actually occurred throughout the study--but was most comprehensive in the final stages of analysis. Throughout the cycles of data collection and analysis, the investigator often talked with participants to correct errors or collect additional information. In later stages of the study, insights were increasingly shared with participants and their feedback was solicited.

In June, when the analysis was almost completed, the investigator conducted member checks to clear up discrepancies in the data and solicit feedback on findings and conclusions. These member checks were performed in two ways. First, the investigator gave a presentation of the study findings to the participants and solicited group reactions. Second,

the investigator spoke with each of the participants individually. Participants' feedback and corrections were then incorporated to develop the final study findings and conclusions.

Finally, the analysis was concluded with the writing of the report as represented by this dissertation.[4] In Chapter V, the study findings are presented by referring to the data displays and supporting them with more detailed examples in the form of illustrative vignettes and quotes from the participants. In Chapter VI, "Conclusions and Discussion," the investigator presents her interpretation of the findings, relating them to the conceptual framework of Argyris and Schön's Theory into Practice (1974).

SUMMARY

An overview of the research design and methodology was presented in this chapter. A description of the qualitative approach as well as a discussion of its suitability to the purpose of the study was presented. A number of techniques employed in qualitative studies to establish the trustworthiness of the study were discussed. The participants, context, data collection, and analysis procedures were also described. The methods described in this section were intended to accomplish this study's purpose of describing and explaining what people do in needs assessments and what they learn from having done them. In Chapter IV, the participants and setting are described in detail so that readers may determine the transferability of findings for themselves.

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[4] Pseudonyms have been used to maintain confidentiality.

CHAPTER IV

THE PARTICIPANTS AND SETTING

INTRODUCTION

The purpose of this study was to describe and explain how people who are first exposed to needs assessment concepts conduct needs assessments and to report the subsequent outcomes. Participants in the study were fourteen physicians who conducted needs assessments as part of a curriculum development project.[1] The participants and setting are described in this chapter so that readers can determine their own meanings of the findings and discussion presented in the final two chapters.

This description of the participants and the setting has been drawn from two sources. First, the investigator observed, interviewed, and examined documents to construct this description. Second, another person collaborated to establish that the investigator was not systematically misconstruing what she saw, heard, and read. A peer informant, who also is a faculty member of the fellowship, provided written observations that the investigator has checked against her insights. Parts of the peer informant's observations are quoted throughout this chapter. Please refer to Appendix F for the full text.

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[1] The term "fellow" is used throughout this study to refer to the 21 physicians enrolled in the fellowship in the year studied. The term "participant" refers only to the fourteen fellows who were in the curriculum track and, therefore, performed a needs assessment.

The participants and setting are described by answering four questions:

1. Who are the participants and what are their daily lives like at their home organizations?

2. What are the primary characteristics of the fellowship?

3. What are the primary characteristics of the curriculum track?

4. How does the fellowship structure the participants' needs assessments?

WHO ARE THE PARTICIPANTS AND WHAT ARE THEIR DAILY LIVES LIKE AT THEIR HOME ORGANIZATIONS?

The Participants as a Group

<u>The daily life of primary care academic physicians</u>. The participants are practicing physicians in the field of "primary care" (general internists, pediatricians, or family physicians) who are also actively involved in teaching. In general, primary care physicians are expected to have the widest range of knowledge as they see patients first and send them on to "specialists" only when necessary. They are the physicians who see "well" people for physicals and check-ups, see patients for relatively minor common problems such as colds, sprains, and headaches. They also monitor patients with ongoing conditions such as high blood pressure or diabetes.

Primary care physicians are less well paid and not as well respected in the health care system as are specialists such as cardiologists or surgeons. Throughout the study, participants acknowledged this disparity, often in a tone of perplexed resignation.

Most chose this field for the patient contact and feel they are the important "front line" of health care. But in the words of one participant, "How is it that the rest of the system which is so dependent upon on us generalists [to do the preparatory work and send them patients] looks down their noses at us?"

Because they have chosen a career in academic medicine, they are expected not only to "be doctors," but also to prepare others to become doctors. Their work life usually encompasses the three settings of clinic or "doctor's office," hospital, and medical school. Their busy careers are divided into half-day portions. Most are expected to see their own patients five or more half days a week in the office. Many spend another half day or two in the office supervising residents (medical school graduates in training as "apprentice physicians"). They also have various responsibilities in the hospital such as "rounding" -- taking primary responsibility for patient care and supervising residents and medical students in the hospital, several weeks a year. Other hospital duties include conducting bedside teaching or "morning rounds" of patients, and presenting and attending conferences on medical topics in addition to the "usual" physician responsibilities in hospitals such as checking on their own patients and serving on hospital committees. Depending upon the local system, every few nights or weeks, they are "on call," backing up residents in cases where office or hospital patients need immediate attention in the middle of the night. Their responsibilities to the medical school include giving lectures to large classes as well as leading smaller discussion groups for medical students.

Most also have some additional areas of responsibility which take time, such as "medical director" of the office, or "assistant program

director" of an educational program. They are constantly under pressure to "keep up on their reading" so that what they are teaching and practicing is up to date. As they are in an academic setting, some are also expected to conduct research and publish.

They have administrative responsibilities and the accompanying paperwork in all three settings. In the office and hospital settings they must keep their own patients' charts up to date, order lab tests and examine results, as well as check over and sign off on residents' paperwork. In the medical school, they have formal lectures to prepare with accompanying slides, handouts, and test questions. At every turn, they have to provide written feedback on their learners. They complete evaluations on residents and advanced medical students in the office and the hospital, rate students' case presentations and discussion participation, and assign grades in courses.

The customary work load well exceeds the allotted 10 half days per week. And at certain points in the year, additional demands are made. Every year there is an interviewing season when academic physicians must make time to review applications, conduct interviews, and attend meetings to rank prospective new recruits into their medical school and/or residency program. Every few years their organization comes under the scrutiny of a national board and there are reports to write, files to straighten out, and gaps in their programs to be filled by creating new curricula or restructuring the work environment.

The participants also have busy lives outside of their careers. At least eleven of the fourteen are in long term relationships and ten have children. Most often the partner also works outside the home. They are busy having babies, raising children, and pursuing outside interests

such as restoring old homes or antique cars, training for triathlons, and attending political rallies.

Prior experience in curriculum development. After being accepted to the fellowship, and before attending the first on-campus session, the fellows completed a questionnaire collecting information on their background in a variety of areas. Figure 3 presents the participants' responses to a question on curriculum development:[2]

What amount of training or experience have you received in curriculum development?

4	2	1	3	1	2

0   1   2   3   4   5
None   Little   Some   Extensive
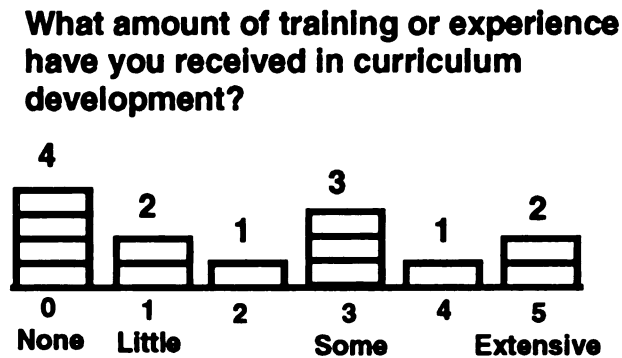
Figure 3

Prior Training and Experience in Curriculum Development

As shown in the figure, the participants were fairly evenly spread in their self assessments of amount of training or experience in curriculum development. In a separate question, all nine of the participants reporting any degree of prior experience (one through five on the scale) indicated that they had obtained the experience through "on the job or self instruction." In four of the nine instances, this was the sole source of experience. Three participants also indicated that they had attended

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[2] Only thirteen responses are presented in Figure 3 as one participant left this question blank. However, on a separate question, the same participant responded that experience had been gained "on the job."

Continuing Medical Education (CME) courses related to curriculum development, and another three reported curriculum development experience from their residencies.

Fellowship faculty perceptions of the participants. This was the fifteenth year that the fellowship had been offered. Two fellowship faculty who had been with the program since its inception and, therefore, had a basis for comparison, remarked that this year's group was much more "outgoing" and "reactive" than previous years. The entire faculty also felt that this class was "older" and "they had to think farther back to recall their medical school days." The faculty were also slightly surprised because, for the first time in the fellowship, the number of fellows electing to do a curriculum development project (14) exceeded the number opting for a research project (7).[3]

The Participants as Individuals

Demographic information. In Table 5, a few demographic characteristics of the fourteen participants are described. (In Table 5, as throughout this report, pseudonyms have been used to preserve confidentiality.) There were slightly more female than male participants (8:6). They ranged in age from 28 to 54 with most in their mid-thirties. All participants were employed full time and four were in tenure track positions. With one exception, all had been working in academic medicine for three or fewer years. Their average time on the job was two years.

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[3] This trend was to continue in the following year. Fellowship faculty believe increasing interest in the curriculum track may be due to increasingly stringent national requirements regarding the quality of curricula to keep programs certified.

Table 5

Demographic Characteristics of Study Participants

Name	Sex	Age[1]	Specialty	Work Setting	Years On Job[1]	Full Time?	Tenure track?	MBTI Score[2]
Alexis	F	32	IM	Undergraduate Program	2	Yes	Yes	ENTJ 37/43/29/5
Eve	F	37	FP	Undergraduate Program	2	Yes		INTJ 31/9/15/39
Sam	M	54	FP	Undergraduate Program	2	Yes	Yes	ENFJ 3/1/37
Emma	F	32	PEDS	University Based Residency	3	Yes		INTJ 17/7/3/37
Julie	F	28	FP	University Based Residency	1	Yes		ISTJ 33/15/19/49
May	F	38	IM	University Based Residency	1	Yes	Yes	ENFP 35/35/11/31
Sue	F	37	FP	University Based Residency	2	Yes		INTP 43/23/39/5
Bill	M	34	FP	Community Based Residency	2	Yes		ENTP 37/51/17/9
Erin	M	33	FP	Community Based Residency	1	Yes		ESTJ 7/59/45/35
Joan	F	42	FP	Community Based Residency	<1	Yes		ISTJ [scores different scale]
Mike	M	35	FP	Community Based Residency	5	Yes		ENTP 5/9/12/31
Rachel	F	34	FP	Community Based Residency	2	Yes		ESFJ 17/5/11/7
Rubin	M	37	FP	Community Based Residency	3	Yes		ISTJ 59/37/61/35
Max	M	32	PEDS	Community Based Undergraduate Program	1	Yes	Yes	ENTP 41/23/21/37

[1] Age and Years on job as of September fellowship session

[2] See pp. 93-4 and footnote 4 for description of Myers-Briggs Type Inventory (MBTI)

It is important to keep in mind that the participants had to fulfill certain criteria to qualify for the fellowship. For this reason, they were all limited to the primary care specialties of Family Medicine "FM," Pediatrics "Peds," or Internal Medicine "IM". Other requirements of the fellowship included that they be employed full time in academic medicine, and be relatively new to their jobs. These selection criteria assured that most of the participants would be in their thirties. In cases where the participants were older, they either had another career prior to becoming physicians or had practiced as physicians outside of academic medicine settings.

The type of setting in which the participants were employed is shown in Table 5. All settings required participants to see their own patients, work in the hospital, and supervise learners in the office and/or hospital. Three participants were in "undergraduate programs" in medical schools where the participants would be working primarily with medical students. Participants in this setting could be expected to have more responsibilities related to traditional courses and lectures. Six worked in "community based residencies," which are apprenticeship types of programs for training medical school graduates, "residents." In these settings, participants had fewer or no responsibilities to medical schools or students, but must provide residents with the required knowledge and skills to become certified physicians. This included creating and running rotations in areas such as "pediatrics," or "obstetrics." Four worked in "university based residencies" (programs in which participants' responsibilities primarily related to training residents) but, as they were closely attached to medical schools, they might also be expected to teach and supervise medical students. The one

exception to this system, the "community based undergraduate program," refers to a setting which trains advanced medical students from a distant medical school. This setting more closely resembled the "community based residencies" as there were no additional responsibilities (such as lecturing) to the distant university.

An independent peer observer reviewed the files for the three previous years and found that almost twice as many physicians in the specialty of Family Medicine (14) had selected the curriculum track than had those in Pediatrics and Internal Medicine combined (8). This trend appears to be holding for the current year in which the group of fourteen participants is represented by ten family medicine practitioners, two internists, and two pediatricians. It was also found that over the three previous years, the fellows had been fairly evenly distributed among the three types of sites (community-based residency, 7; university based residency, 7; and undergraduate medical school, 8) but there were fluctuations from year to year. The year in which the study was conducted, half of the participants came from community based programs.

In addition to demographic information, scores on the Myers-Briggs Type Inventory (MBTI) were obtained. When the study was originally designed, the conceptual framework was based on the MBTI. A review of the literature indicated the likelihood that there might be a link between temperament type as measured by the MBTI and a person's preferred needs assessment process as well as the type of results they obtained. However, as the study progressed, it became evident that there were much more important factors that explained the participants' processes and results (See Appendix A for a description of why and how

the conceptual framework and research questions changed). The MBTI results were not used in developing the findings for the present study, and are presented here only for the reader's reference. Although the investigator did not discern any useful links between participants' MBTI scores and approaches to needs assessment, the reader may learn something more about the participants by examining their MBTI results.[4]

Reasons for choosing a curriculum development project. The types of curricula and participants' reasons for choosing to do a curriculum development project are presented in Table 6. The types of curricula were the participants' own descriptions in later interviews. The reasons for creating the curricula were drawn from participants' written answers on three separate assignments over a five month period.

The types of curricula fell into four groups: rotations, courses, longitudinal experiences, and other. Seven of the participants created rotations in which learners would acquire knowledge and skills in the office or hospital setting in a two-to-four week period. An example is the month-long rotation in Women's Health that May created. Four participants created courses in which learners were to acquire knowledge and practice some skills in a setting that more closely resembled the traditional classroom. An example is the course in Substance Abuse that Sam created, in which medical school students worked in small groups

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[4] The scores are reported for four continua: Extraversion/Introversion, INtuition/Sensation, Thinking/Feeling, and Judging/Perceiving. In this version, scores can range from 1 to 59 with lower scores indicating the center of the continua and higher scores indicating an end of the continuum (the lower the score the less one temperament dominates the other on the same continua). For introductory information on the Myers Briggs Type Inventory, consult the following texts:
   Myers, I. B. (1980). Gifts Differing. Palo Alto, CA: Consulting Psychologists Press.
   Keirsey, D. & Bates, M. (1978). Please understand me: Character & temperament types. Del Mar, CA: Prometheus Nemesis Book Company

Table 6

Why Interested, Benefits of Curriculum Development Project

	Type of Curriculum Created	Improve Experience and Skills of Learners	Current Job Responsibility	Personal Interest Area	Improve Own Skills in Teaching
May	Rotation	✔	✔	✔✽	✔
Sue	Rotation	✔	✔	✔	✔
Bill	Rotation	✔	✔✽	✔	
Rubin	Rotation	✔	✔	✔✽	
Mike	Course	✔	✔	✔✽	
Joan	Longitudinal Course	✔	✔		✔✽
Emma	Rotation	✔	✔✽		✔
Julie	Rotation	✔✽	✔		
Alexis	Course	✔		✔✽	
Eve	Course		✔	✔✽	
Sam	Course	✔✽	✔		
Erin	Longitudinal Rotation	✔✽	✔		
Max	Rotation (Undergraduate)	✔✽			✔
Rachel	Model for teaching	✔			

KEY:

   ✔   Specifically written in answer
   ✽   Participant emphasized this reason

to learn substance abuse concepts and practiced interviewing patients with substance abuse problems. Two participants created a longitudinal course or longitudinal rotation, respectively. In these instances, the learners were to acquire the material in hourly or half-day allotments over an extended period of time of a year or more. An example is Joan's Ambulatory Pediatrics curriculum which was to cover 60 hours of material in four-hour increments over a two-year period. And finally, one participant created what she described as "a framework for approaching teaching in all situations."[5]

When writing why they were interested in their intended projects and what the benefits of the curriculum would be, there was remarkable consistency among participants' answers. Participants' responses could be captured in four basic categories. First, 13 of the 14 participants wrote one or more times of the need for the curriculum to improve the experience and skills of their learners. For example, Julie wrote:

> I did my Family Practice residency at [the same institution] and was somewhat distressed at finding out how variable the [outpatient procedures] training was - the education was very dependent on the patients/procedures scheduled and the instructors who did the supervising. I realized that a core curriculum would be extremely beneficial....

Second, eleven of the fourteen participants explicitly wrote that the curriculum they were to create covered one of the areas they were responsible for in their jobs.[6] Julie was director of the resident's

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[5] As will be described in the following section on "outliers," the curriculum project labeled "other" did not fulfill the criteria for a curriculum by the fellowship standards.
[6] In interviews, the remaining three participants volunteered that their curriculum development projects also addressed an already existing job responsibility. However, their descriptions indicated that it was one job responsibility among many, and not one that they considered "major."

procedures clinic. Bill, who was creating a curriculum in geriatrics, was already the course coordinator. And third, seven of the fourteen wrote of the curriculum content being of great personal interest. Participants revealed in interviews that these two reasons were often combined. For example, May said "I demanded this job area as a responsibility, I demanded it just because it was so important to me." And Sam spontaneously volunteered " [Teaching Substance Abuse] is a job responsibility, but I took the job specifically because it would help me teach others how to deal with substance abuse."

And fourth, five of the participants wrote of their desire to create a curriculum to improve their own skills in teaching. Max wrote of this curriculum development project as a stepping stone to still larger projects:

> This project will allow me to develop expertise in the area of curriculum development and I will be able to expand this two week clerkship in order to develop a curriculum for our first year residents as well.

In twelve of the fourteen cases, the participants' priority reasons for choosing to develop a curriculum was evident in their written words and later confirmed in interviews. Although only five indicated the curriculum being related to a personal interest area as the most important reason, all but one indicated that they had a personal interest in the topic area. Even those who had not written answers describing their personal interest in the topic, spoke of it in interviews. For example, Emma who was creating a normal newborn nursery rotation, repeatedly spoke of her concern about residents receiving too much emphasis in treating ill newborns. Sue said that she had even switched

her curriculum topic to one that she was interested in, <u>against</u> the

expressed wishes of many of her department members. The only

exception to this trend was Erin who openly acknowledged that he was

not interested in his curriculum topic, growth and development:

> The truth is that I'm not that interested in developing
> curricula in that area. I'm really interested in evaluation.
> But you have to have goals and objectives to know what it is
> you are going to evaluate, and we didn't have any of that...

Erin said he was creating a curriculum for what people in his

organization had identified as an area badly in need of it, and then he

was going to be able to turn to his interest, evaluation.

Personality issues. The peer observer writes of the few individuals

in the fellowship each year that seem to stay separate from the rest,

calling them "outliers":

> While on campus, each group of fellows develops a unique
> group dynamic. In some groups, one or two leaders emerge.
> In others, various sub-groups will form. Sometimes,
> "outliers" who seemingly have nothing in common will come
> together because the other fellows pretty much steer clear of
> them. In general, I would describe the "outlier" fellows as
> individuals who are abrasive in the classroom setting as well
> as in social settings and informal conversations. Behaviors
> would include monopolizing discussions or conversation,
> verbally attacking presenters and other fellows in workshops,
> or not being open to new ideas or other perspectives. We
> seem to get at least one fellow like this every year.

In the year studied, there were three participants that fit the peer

observer's description. At some point during the year, each of the

fellowship faculty described Alexis, Joan, and Rachel as "characters" or

"difficult to work with." Alexis and Rachel were noticed on the first day

for their outspoken questions and comments during workshops. They had fewer interactions with the other fellows and began to spend more and more time with each other. Joan described herself as being "different from the others" from her second day in the fellowship and described her situation in her work environment in similar terms. Alexis acknowledged that she had a need to, in her own words, "know everything and do everything well," to the point that she had trouble completing tasks.

Joan and Rachel were noted for their difficulties in responding to feedback. After Joan came into conflict with another participant in her mentor group and resisted input from both her mentors, she was switched to another group where she responded to the advice of a more senior mentor. Rachel was consistently mentioned by both faculty and other fellows as not being open to feedback. One mentor described trying to get ideas across to Rachel like "speaking to a brick wall" and, later in the year, her other mentor acknowledged that Rachel had interests that did not fit with the fellowship objectives, saying "She's just not able to see what we have to offer her. What she wants to do won't fit into the format of a curriculum development document...so we're letting her go." Rachel completed her project without further mentor assistance.

WHAT ARE THE PRIMARY CHARACTERISTICS OF THE FELLOWSHIP?

The participants were enrolled in a 10 month-long fellowship to improve their skills in academic medicine. Each year, approximately twenty primary care physicians come from all over the United States and Puerto Rico to receive training in teaching, research, curriculum development, and administrative skills at the fellowship. The peer informant describes the fellowship structure and the stress that it adds to the fellows' already busy lives:

> The fellows come to the campus for a total of five weeks
> during the academic year (2 weeks in September, and 1 week
> each in November, February and June). At their home
> institutions, their work life goes on as described above, but
> in addition they must complete fellowship reading and other
> assignments, and complete their Major Project—research,
> curriculum development, or preparation of a proposal for
> either a research or a training grant. For all fellows, it is a
> hectic and stressful year. It amazes me that some fellows
> manage to do all this while they have babies, raise children,
> get promotions to positions with more responsibility,
> continue to care for their patients, go through drastic
> organizational changes in their departments, and other
> typical life events. Sometimes I see these folks as crazy; but
> generally I have a great deal of respect for what they have
> chosen to do with their lives.

The Fellowship Is Demanding

Time demands. Although fellows are technically required to be given 10-20% release time from their usual work responsibilities, as well as the five weeks of "on-campus" time, in the words of the peer informant, "for some fellows, this release time is easier to talk about than actually get." Some fellows wound up taking vacation time for on-campus sessions or to work on fellowship assignments, and almost all returned from on-campus sessions to find work that had piled up for

them including owing their colleagues for covering office hours, hospital rounds, or teaching responsibilities while they were gone.

As described above, the fellowship is usually an "add on" to fellows' already busy lives. In addition, the fellowship itself is demanding. While on campus, fellows attend workshops every day from eight or nine in the morning until at least four in the afternoon (See Appendix C for sample schedules). They are also involved in other activities:

> The schedule during the fellowship weeks is **packed**, especially in recent years with the optional Computer Competency sessions that fellows can sign up for and attend early morning, during lunch time or late afternoon. Fellows also have to squeeze in times to meet individually with their Major Project mentor faculty, as well as other faculty with the fellowship and/or other faculty in the college with similar interests. It has become a concern that fellows need more time during the fellowship weeks to reflect on their learning during the workshops and simply relax and interact with their fellow fellows.

As one participant (perhaps too politely) put it in the feedback session at the end of the first on-campus week: "I think you're right at the edge of having too much."

Balancing fellowship with other responsibilities. Fellows were not even able to fully separate themselves from their work responsibilities while away at the on-campus sessions. At one time or another during the fellowship, almost all of the fellows were observed rushing for phones during workshop breaks to respond to urgent messages from work about patients who had taken a sudden turn for the worse, or an urgent problem that had cropped up in some area for which they were responsible. Fellows also had on-going concerns related to their personal lives. In a lunch time conversation, one participant shared that "It seems

like everybody has something big going on back home." One had a family member in surgery, another's job was in peril, another was moving to a new home, and the list went on.

Change in routines and stature. Moreover, the fellowship presents a considerable change from the fellows' familiar routines and surroundings. They begin the fellowship by spending two weeks away from family and colleagues. As physicians, they are accustomed to being in control and having others around whose specific purpose is to help them (such as nurses and clinical assistants) as well being accorded respect as "the knowledgeable one" in patients' and learners' eyes. In contrast, when they begin the fellowship, they are suddenly transformed to students who have a lot of learn. At eight o'clock in the morning of their first day, they find themselves seated among strangers at U-shaped tables with gift coffee mugs and empty four-inch thick binders in front of them. After a brief introduction of the fellowship faculty, they are told by the presenter "Believe it or not, that folder in front of you will be full by the end of this session and you will fill two more before this fellowship is over." Their first task is to complete name cards. For the rest of the two-week session, fellows only occasionally strayed from the name card and binder during workshops.

The fellowship is also highly structured. The fellows have many written assignments that are to be completed according to specific guidelines and returned by due dates. The first morning, two fellows were approached by a faculty member asking for an assignment that had been due that morning. They stayed in the room over lunch time to complete it. There is pressure to be on time; all workshops start promptly regardless of whether everyone is present. Although the

fellowship has developed much of this structure in response to the need to cover a large amount of material in a limited time, often at previous fellows' request, each year's fellows are understandably shocked by their sudden change in stature. Over the course of the year, many fellows commented to the investigator about how unaccustomed they were to sitting for the long periods of time the workshops required. They said they were used to running from room to room to see a patient every fifteen minutes, being interrupted with questions from learners or office staff, and they often broke up their day commuting between hospital and office.

In the year studied, the fellows "acted out" against this structure in a school prank of switching name tags on a guest lecturer during the second week of the September session. One participant described the fellows' feelings in a debriefing session at the end of the two weeks:

> We also needed an opportunity to debrief our feelings - of our change in identity. It was like we left our status along with our beepers and white coats in the corner and we had to go back to being students again...This was a totally different way of thinking for us...we worked very hard....and there was no acknowledgment of that, no positive feedback.....There was almost a regression. Instead of [toilet papering] the trees outside of [name] hall, some of the name tags were switched...because there was absolutely no avenue to get it out....First week, there needs to be an acknowledgment of how we are feeling.

The high degree of structure that the fellowship imposes upon the fellows will become even more apparent in the following description of the curriculum track.

WHAT ARE THE PRIMARY CHARACTERISTICS OF THE CURRICULUM TRACK?

The Curriculum Track Is Based on Choice of Major Project

The ten-month-long faculty development fellowship is designed to improve fellows' skills in teaching, research, curriculum development, and administration. All fellows attend workshops as a large group and complete some homework assignments addressing these areas. Fellows are also required to complete a "major project" during the fellowship and are placed in the "curriculum track" or "research track" depending on the nature of their major project. Small group sessions and most of the assignments to be completed at home differ according to the type of major project fellows select. In this study, only the fourteen fellows in the curriculum track could become full-fledged participants in the study because only the curriculum track required them to conduct and report on a needs assessment.

Most fellows had selected a track and general topic for their major project prior to beginning the fellowship. The fellowship had intentionally structured early tasks for this purpose: 1) the application asked fellows to state their project ideas; 2) fellowship faculty visited fellows at their home institutions during the summer to discuss fellowship requirements, including the major project; 3) and on the first day of the fellowship in September, fellows were required to hand in a "Major Project Contract Draft" stating their choice of track and intended project topic.

The Curriculum Track Assignments

The curriculum track was in its fourth year at the time of the study. Prior to forming a separate track, a much smaller number of fellows had completed curriculum projects on an individualized basis. Over this time, a series of assignments had been developed and refined to assist participants in successfully designing their curricula. For all curriculum topics, fellows first attended workshops in which they did exercises and started working on related assignments while fellowship faculty were present to provide assistance. Participants also received detailed guidelines for completing each assignment, as well as two examples of previous fellows' completed assignments. For each assignment, they received feedback from their "mentors," fellowship faculty assigned to their small group. In Table 7, the curriculum related assignments all participants were required to hand in over the course of the fellowship are listed.

In the first two-week, on-campus session in September, fellows spent three half days in small groups or workshops specific to their track. Fellows in the curriculum track (to be referred to as "participants"), met in groups of two to four with assigned fellowship faculty to discuss their ideas for curriculum development projects. These small groups became their "mentor groups." Participants also attended a special half-day workshop on needs assessment. (See Appendix G for workshop handouts and needs assessment assignment materials). The participants were to complete two assignments at home between the September and November on-campus sessions: 1) review the literature related to their project topic and hand in an annotated bibliography

Table 7

Curriculum Track Assignments

Assignment	Description
1) Major project draft	Description of tentative project topic including reasons for selecting project, assessment of support, and anticipated problems
2) Annotated bibliography	A summary of articles discovered in a search of the medical literature on participant's intended topic
3) Needs assessment report	A summary of participant's needs assessment activities and results
4) Major project contract	Signed contract describing project to be completed (similar questions to draft)
5) Curriculum document	An argument for why participant's curriculum is needed, and a description of the content of the curriculum, how it will be taught, evaluated, and implemented
6) Curriculum development article	A draft of at least the introduction and methods section describing participant's curriculum (intended for later publication)
7) Conference presentation	A ten-minute talk on the curriculum at a simulated conference

describing eight to ten sources; 2) conduct a needs assessment, analyze the results, and hand in a needs assessment report.

In the November on-campus session, many of the workshops were separated according to track as the fellows began detailed work on their major projects. The November session began with participants giving oral presentations of their needs assessments in their smaller mentor groups. Fellows in the curriculum track then attended workshops on topics like creating goals and objectives and selecting instructional and evaluation strategies. Each of these workshops was intended to help fellows complete a portion of their "curriculum document," a description of their curriculum described in enough detail for someone else to be able to run the curriculum in their absence. Shortly after they had returned to their home environment, fellows were required to hand in a "Final Major Project Contract" outlining what they intended to accomplish by June.

In the period between the November and February on-campus sessions, participants concentrated on creating their curricula. They were required to send in a draft of their curriculum document by mid-January. With most of the details of their curricula completed, special curriculum track sessions during the February on-campus session turned attention to how to implement the curricula and write publishable articles. In between the February and June on-campus sessions, participants revised their curriculum documents, began working on articles, and prepared presentations on their curricula to be given at the June conference.

The investigator kept this fellowship assignment structure in mind when designing the present study. The investigator observed and

interviewed participants 1) before they had been exposed to needs
assessment concepts, 2) during the needs assessment workshop and
throughout the period they were conducting need assessments, and 3)
after the needs assessments had been formally completed and reported
and participants were supposed to be applying what they had learned to
the curricula they were developing. In addition, the fellowship
assignments were already generating documents during each of these
time periods. Therefore, it was relatively easy to collect data that
described how the participants conducted their needs assessments, how
their understanding of the needs assessment process changed over time,
and the ways in which the needs assessment results were incorporated
into the final product: the curriculum.

Participants' Responses to the Curriculum Track

Although the fellows had voluntarily applied to the fellowship in
order to improve their skills, they still experienced doubts and
frustrations during the fellowship. Two problems related to the
curriculum track that participants most often shared with the
investigator were also brought up by the peer informant:

> There are two particularly difficult aspects of the
> Curriculum Development Track for the fellows: the model we
> are teaching/forcing them to use, and the amount of writing
> the track requires.
> ....The model continues to be unwieldy and
> cumbersome, and fellows (as well as faculty) can get lost in
> the trees, losing sight of the forest. No matter how hard we
> try to be consistent with our labels for the various
> components of the process (e.g., Needs Assessment, Goals,
> Learning Objectives, Content, Instructional Strategies,
> Learner Evaluation Strategies, Implementation Planning,
> Curriculum Evaluation, etc.) the jargon often obscures how
> practical and essential each component is.
> ....Writing and putting these [curriculum documents
> and other written assignments] together can be a very

painful process for the fellows, many of whom have
undeveloped writing skills. Whereas the Research Track
fellows "only" have to write a journal article about their
study, our fellows spend the whole year writing about their
curricula from several perspectives (students, reviewers,
faculty colleagues will help them teach the course); they also
have to prepare teaching materials, worksheets, checklists
and tests; and they end by writing a journal article about
their curricula.

Participants would occasionally find themselves "at sea" amidst
unfamiliar educational practices and jargon. Several of the participants
described themselves to the investigator as "scientists" that were used to
following a standardized, objective procedure. They were used to
diagnosing and treating patients within a matter of minutes, and were
unaccustomed to the more drawn out practices of developing curricula.
Others experienced difficulty in distinguishing and applying new
terminology in their projects. Sam's progress on his project was slowed
considerably by his confusion over "enabling objectives" and "terminal
objectives."

Several of the participants reported having been responsible for
creating curricula prior to attending the fellowship. The gist of their
statements was that they had been expected by their department to
create the curriculum in a day or two's time, and that they usually just
looked at a few textbooks to determine the content. All participants
remarked upon how thorough and energy intensive was the process
taught in the curriculum development track, but most seemed to agree
that it resulted in a curriculum that was more likely to actually help
students learn what they needed to know to become competent
physicians in the "real world." However, as will be illustrated in the
findings in Chapter V, many of the participants experienced some conflict

or miscommunication with their home organizations where the common method of developing a curriculum was much less time and energy intensive.

In addition, the participants may have been overwhelmed by the materials distributed for the fellowship. For every assignment, participants received at least two examples, one of which was annotated, showing how all the assignment criteria had been incorporated. Almost every single participant made a comment at one time or another about the large amount of materials handed out; some openly stated that it was "too much," others suggested that some kind of organizing system be established beyond the present three-ring binder and color coding of handouts according to track. The investigator found in her role as mentor, participants often had difficulty locating materials that were referred to in assignments.[7]

In contrast, fellowship faculty demonstrated great faith in their materials. The faculty's attitude may have been captured by one faculty member's comment when the inch-and-half thick binders containing the curriculum track assignment examples were handed out at a faculty meeting. Flipping through the pages, he remarked, "If they can't develop a curriculum based on this kind of stuff, man, it's hopeless."

Participants also voiced concerns about their writing skills. Several said they weren't used to writing anything longer than a note in a patient's chart. More than one joked that they had "gone into Science

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[7] A typical phone conversation regarding materials:
Mentor: Use the yellow two-page checklist as a guide when you do this assignment.
Participant: Where is that?....(sound of flipping pages)
Mentor: It was handed out with X, look for it there....
Participant: You mean the [reads title]?
Mentor: No, another yellow checklist. It was handed out after that, keep looking.
Participant: (finding paper) Oh yeah, I remember seeing this....

because they couldn't hack English." Participants were unused to the concept of writing drafts, expecting their first efforts to be either acceptable (and therefore voicing surprise when mentors returned them with suggested revisions), or flawless (and unwilling to let mentors see work in progress until they had it "just right"). Participants were used to getting major tasks done in a single or a few sittings and often found themselves rushing to get assignments done just before (or after) the deadline, having underestimated the writing/thought time involved. At the debriefing at the end of the fellowship, the participants, as a group, spoke of the need for better spacing of written assignments. They felt that they no sooner had finished one task when it was time to already be starting on the next.

HOW DOES THE FELLOWSHIP STRUCTURE THE PARTICIPANTS' NEEDS ASSESSMENTS?

As described earlier in this chapter, the needs assessments conducted by the participants were required, and conducted as part of a model of curriculum development that the participants were learning and applying in a ten-month-long fellowship for academic physicians. The participants' impressions about needs assessment were, in part, shaped by a three-hour workshop on needs assessment (including handouts and exercises), the fellowship faculty's attitude toward needs assessment, and the needs assessment assignment. Also, the participants' attitudes toward needs assessment may have been affected by the emotions and other events the participants were experiencing at the time of the workshop. Each of these aspects will be discussed in turn.

The Needs Assessment Workshop and Materials

In the workshop, participants were presented with a discrepancy-based definition of needs assessment, its purposes, and a four-step approach to conducting a needs assessment. The needs assessment materials were based largely upon the work of Allison Rossett. Figure 4 is an excerpt from the handout which outlines the four step approach. (See Appendix G for complete needs assessment materials).

The workshop lasted three hours on Wednesday morning of the second week on campus (See Appendix C for schedules). The workshop was designed so that participants would listen to a brief lecture on a step of the needs assessment process, followed by working individually on an exercise designed to help them begin planning how to execute the step in their needs assessments for their own projects. Curriculum track

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Our 4-Step Approach to Needs Assessment

1. Consider the **context and people affected** by the curriculum.

2. **Plan** your needs assessment. Decide

   A. what **questions** to ask

   B. who to ask/what to look at **(sources of information)**

   C. how to ask them **(techniques)**.

3. **Conduct** your needs assessment.

4. **Analyze and communicate** your results.

Figure 4
Excerpt from Workshop Handouts

mentor faculty were present during the workshop to discuss issues and plans with participants.

During the workshop, participants completed two worksheets for planning their own needs assessments. On the "Context and People" worksheet, the participants defined the problem from their own perspective and listed people who stood to be affected by the new curriculum and those who should be consulted as part of the needs assessment. On the "Needs Assessment Planning Worksheet," participants listed the questions they wanted to answer in their needs assessments, the sources they wished to consult, and the techniques they could use to gather each piece of information. Participants did not know until the end of the workshop that these worksheets were to be

collected for the present study. (They were copied and returned later the same day).

The twenty-six page handout included blank worksheets for the workshop exercises and detailed information on each of the four steps for conducting a needs assessment so the participants could use the material later on their own.

The Needs Assessment Assignment

At the conclusion of the needs assessment workshop, the participants were given copies of the needs assessment assignment (see Appendix G). There were two components to the assignment. First, the participants were to write a two to three page needs assessment report according to the guidelines in the "Criteria for Needs Assessment Report" (a two-page listing of the items that were to be addressed in the report such as "at least two techniques used"). Participants' curriculum materials included an annotated example of a previous fellow's needs assessment report. They were to bring their completed report with them to the November fellowship on-campus session.

Second, the participants were to prepare a 15-minute summary of their needs assessment activities which they were to present in their mentor groups the morning they returned to the November on-campus session. The oral summary was to answer the following questions:

a. What needs assessment questions did you ask?
b. Who did you ask?
c. How did you collect the information?
d. What information did you get back?
e. How will you use the information when you develop your curriculum? (i.e., So what? What changes are you making in your project based upon the needs assessment?)

There was a six-and-a-half week time period between the time the participants received the needs assessment assignment and the time they were to produce the written and oral reports. The only other fellowship assignment during this period was to complete the review of the literature started during the September on-campus session and to hand in annotated bibliographies of eight to ten articles related to their intended curriculum.

Faculty Influence

As fellowship faculty were present during the workshop to help participants begin to plan their needs assessments and would be mentoring participants on issues including needs assessment throughout the fellowship, it is reasonable to assume that the faculty attitude toward needs assessment could influence the participants. Seven faculty were mentors to participants and all were present at the needs assessment workshop.

Faculty behaviors and statements during the workshop were different from behaviors in all previous workshops. Although these behaviors might be attributed to the faculty also feeling tired by the middle of the second week, these behaviors also suggested that the faculty did not believe needs assessment was of great importance. During the workshop one of the faculty members became involved in a side conversation that also took two participants off task. Another faculty member was observed reading a newspaper at the back of the room and left the workshop early. This was the only workshop in the five weeks of on-campus sessions in which these faculty behaviors were observed.

The following exchange between faculty and a participant who expressed a desire to do a thorough needs assessment occurred during the workshop. It illustrates how at least four of the faculty made statements suggesting needs assessment was not as important as other activities:

May:	[Saying she was planning to run focus groups and tape the proceedings as part of her needs assessment.] In the literature, if you're trying to do something rigorous, to write an article, you are supposed to try to transcribe everything. It's very time consuming but its excellent.
Faculty A:	You don't need to go to that level of detail for the fellowship.
May:	But if you're going to try to publish?
Faculty B:	[Gave example of a curriculum developed by a fellow in a previous year, said the needs assessment was] "even less rigorous, but it got published."
May:	Where?
Faculty C:	It is true that the more quantitative data, the more hard data about the curriculum, the better. But hard *evaluation* data is more important than hard *needs assessment* data -- you wouldn't waste a table [in an article] to report your needs assessment results.
Faculty D:	Reviewers are more impressed by having a nice innovation than with how you did your needs assessment.

May did not conduct focus groups and tape the proceedings in her needs assessment.

The difference between faculty behaviors related to needs assessment and those exhibited in other workshops suggests the faculty did not perceive needs assessment to be as important as other activities. The faculty's lower expectation of needs assessment may also have been reflected in other factors. Fellowship faculty scheduled the workshop late in the two-week session, after giving time precedence to most of the

other workshops. The workshop was also presented by a female faculty member with lower stature, as she was neither a Ph.D. nor a physician.

In addition, in the case of one of the participants, the faculty lowered the requirements for the needs assessment assignment. Although it is not uncommon to ask a fellow to revise an assignment, in a meeting in November, fellowship faculty dissuaded two faculty members from requiring one participant to repeat the needs assessment assignment. Although faculty acknowledged that the participant had not fulfilled the assignment and had not gathered data that would be useful to later stages of the curriculum development effort, their opinion was that the participant was experiencing so much difficulty that having to "backtrack" to do the needs assessment would only slow him down. Faculty advised that the participant should proceed to create the curriculum even though the needs assessment had been improperly done.

Events and Emotions Surrounding the Needs Assessment

The needs assessment workshop occurred on the Wednesday morning of the second week on campus. This turned out to be the participants' emotional nadir of the fellowship. In the debriefing at the end of the week, several fellows spoke of how two weeks was a long time to be away from home and family. Eve said: "This has been a very long second week. First week, the picnic was nice. We could have a planned social event the second week. By Wednesday, I was ready to go home." Fellows spoke of the pressure they were feeling, and alluded to the "name card switching incident" as "a way to let off some steam." The name cards were switched during the Wednesday session following the needs

assessment workshop, suggesting that attentiveness to the work at hand was not at its highest during the needs assessment workshop.

Half of the participants were observed during the needs assessment workshop to be off task, or very discouraged about their projects. Joan and Alexis became involved in a discussion unrelated to needs assessment. Instead of working individually during the time allotted for exercises, they talked and neither completed the worksheets. Three participants (Sue, Rachel, and Erin) had entered the fellowship intending to evaluate existing curricula and, at the point of the needs assessment workshop, two of them were realizing they did not have a curriculum that was comprehensive enough to evaluate. Sue's mentor told the investigator he had been working with Sue "a lot" during the workshop because: "She didn't know which end was up. She had been totally torn down...realized her project wasn't doable, because she didn't have a curriculum to evaluate....She was in a state of flux...trying to select a new project." Sue's worksheets described a needs assessment for a project she later abandoned. The third participant, Rachel, was interested in an evaluation project and did not see how to apply needs assessment principles to her own project. She said to the investigator: "You know what's not on this list? [pointing to a page of the handout] The stuff I need."

Other participants were questioning their proposed curriculum topic or the need for conducting a needs assessment. The following excerpt from the investigator's field notes describes an interaction with Sam:

I approached Sam, who was sitting next to Max, and had been sitting quietly, [not writing but looking at the paper]. He had the first three questions filled in when we began talking.

Sam: "This is all a mess."

[Investigator]: "What do you mean?"

Sam: "We have no goals or objectives, or overviews and all that stuff...I'm supposed to develop the second year and pilot it this spring...when we haven't even done this stuff for the first year..."

[Investigator]: "You're wondering if it's appropriate to do a needs assessment for just year two?"

Sam had been drawing at the top of the page while he talked, listing each of the years of the intended curriculum. Sam seemed discouraged, he was quiet, not smiling, looking at his paper while he talked, the corners of his mouth a bit tight.

I told him that what he had identified as a "mess" indicated that he had already learned a lot from the fellowship and was applying it.

He smiled briefly and said "Yeah, I guess so. I've learned a lot." (emphasizing "lot") But as we continued discussing the curriculum, he said he wondered if he should be doing the second year curriculum for his project, and wound up wondering if his project "should have anything to do with this curriculum at all."

The investigator's field journal also describes an interaction with Emma, who felt she already knew the problem and didn't need support or ideas from others to make changes:

I next talked to Emma.

When I asked Emma "How's it going?", she had been sitting quietly looking forward with her workshop packet closed before her, hands resting in her lap, as if waiting for the next lecture segment. She turned to me and said "I'm done." She opened up the packet to the worksheet and I saw that the blanks has been filled in with mostly one word or one line answers.

Emma: "In my case, this wasn't that hard. I have control over the whole situation; nobody else cares what I do...it's all up to me."

When approached later during the workshop, Emma said, "This is very hard...I have control over it all...what they learn is arbitrary." The investigator's comment continues: "[Emma] gave me the impression she already knew what the problem was for herself and didn't need other data from other sources, or that the data was [sic] not available or difficult to get/use."

In contrast, several of the other participants seemed to find the workshop beneficial. Julie and May spoke of how useful the exercises were in helping them organize their own needs assessments. Rubin worked quietly by himself throughout the workshop:

> I approached Rubin who was writing quite quickly on yellow legal pads.
> [Investigator]: "How's it going, I see you're cranking away there."
> R: "The first part, the people and context, really clicked for me...now it's more difficult. I'm writing stuff, but I need to go back later and make sure my questions match the people and context, and my sources and techniques match the questions....I've gotta do something like that grid you mentioned from [the survey] workshop."

Rubin had filled eight legal pad sheets by the end of the workshop.

During the end of week debriefing, at least fourteen comments were made regarding the needs assessment workshop, more than any other workshop for the week. The participants' consensus on the needs assessment workshop was that it should have occurred earlier in the two-week session. Five of the comments directly addressed the desire to have the workshop earlier. For example, Max said, "That came up more

than once that you needed to know about needs assessment before you could do this...like in the curriculum development workshop...." Another five of the comments described how participants felt that they had heard about needs assessment so many times in other workshops, knowing that it was their first major assignment for the fellowship, that they had become very worried about it by the time the workshop came. Emma said "I'd heard the word 2,000 times. I was almost phobic about it...I would have enjoyed doing it in the evening, as a kind of brainstorming activity...I would have done better sitting by myself."

Effects of being studied. In addition, there is mixed information on the degree to which participants were affected in positive or negative ways by the fact that they were being studied. A few of the participants reported using their involvement in this study to spur their needs assessment activities. When the investigator contacted participants while they were conducting their needs assessments, three participants directly commented on the investigator's interview providing impetus for their needs assessments. Bill spoke of "the benefits of knowing the interview was coming...It accelerated my process, to get the questionnaire back.... Your questions made me organize what I have done to this moment, in a more precise manner." Julie said she had purposely conducted three phone interviews for her own needs assessment the night before her phone interview for the present study "to get a sense of what it was like to get ready for today's interview." She wanted to have a chance to compare the experience of interviewer to interviewee.

As the participants expressed frustration over having heard about needs assessment so many times before they got to the workshop, the

investigator became concerned that knowing that they were being studied had added to the stress, however:

> When the investigator asked whether being studied had added to their frustration, the response was always the opposite. Participants made statements like "You showed interest in what we were doing, for one, it made me feel more important" and "Your studying this actually helped...it served as a reminder that [needs assessment] is not completely understood." (Chapter 1, pg. 12)

In addition, the peer observer did not perceive the study as making a difference in the final products:

> At this point in her study, I do not see that Josie's data collection has changed the fellows' approaches to their needs assessments or projects....
> .... With regard to their needs assessments, I haven't detected a Hawthorne Effect—the needs assessments I looked at were about the same quality and value that I have seen in past years.

SUMMARY

The sections in this chapter have been presented to give the reader descriptions of: 1) the study participants as a group and as individuals, 2) the fellowship setting, 3) the curriculum track within which the participants are required to conduct a needs assessment as part of a curriculum development project, and 4) how the participants' needs assessments may have been structured by the fellowship. The investigator hopes this chapter will help readers determine the degree to which the study findings presented in the next chapter are a result of the particular characteristics of the participants and setting, and the degree to which the findings should generalize to other people and settings.

CHAPTER V

RESEARCH FINDINGS

INTRODUCTION

The purpose of this study was to describe and explain how people become familiar with, implement, and learn from having done a needs assessment. Fourteen physicians conducting their first needs assessments as part of a curriculum development project participated in this study. The study findings are presented here in the form of illustrative quotes, descriptions, and data summaries. The 20 findings were derived through comparative analysis of the data collected on all participants through observations, interviews, and documents.

Bear in mind that the findings presented in this chapter have been derived from a group of people who are 1) novices to needs assessment and, 2) in most cases, are subject matter experts in the area in which they are planning to develop a curriculum. Also, the setting resulted in certain restrictions on the needs assessment. The literature search, which 100% of the participants performed, was required. The frequency of contacting experts may be over-represented in this study as, in several cases, fellowship faculty supplied participants with the names and phone numbers of experts in the content area and periodically asked the participants whether they had "gotten in touch with those people yet." Other constraints placed on the needs assessment were described in the section in

Chapter IV titled "How Does the Fellowship Structure the Participants'
Needs Assessments?" Limitations to the study findings also were
discussed in Chapters I and IV where the participants and setting
were described so that readers might better determine the degree to
which these findings were applicable in their own context.

This chapter is subdivided into four sections. In the first three,
findings on the three research questions are presented:

> 1) What do the participants do in conducting a needs
> assessment?
>
> 2) What factors facilitate and/or hinder the needs
> assessment process?
>
> 3) What do participants learn about the process and
> products of needs assessment?

The findings are briefly summarized in the fourth and final
section.

WHAT DO THE PARTICIPANTS DO IN CONDUCTING A NEEDS ASSESSMENT?

What the participants "did" in conducting a needs assessment will be answered by looking at the methods they employed as well as the sources they consulted for the needs assessment. There are seven findings addressing research question one.

Methods Employed

A summary of the needs assessment activities for each participant is presented in Table 8. The participants are listed according to the number of activities performed; participants performing the same number of activities are listed according to the degree of effort given to each activity. As an example, a participant who collected and analyzed 47 completed surveys was listed before another participant who collected and analyzed 7. After this ordering was completed, it was found to be closely related to the participant's own estimates of time spent on the needs assessment. (See finding #9 for more details.)

Finding #1: Needs assessment did not have a clear beginning and ending. Table 8 shows evidence of participants conducting needs assessment-related activities both before and after the "official" six-and-a-half week period for the needs assessment assignment. The columns titled "Prior" and "Post NA Assignment" in Table 8 indicate the frequency with which participants reported needs assessment activities outside the assigned period.

Table 8

Needs Assessment Related Activities

| | PRIOR TO | DURING NEEDS ASSESSMENT ASSIGNMENT | | | | Documents | | | AFTER | |
	Before Fellowship Began	Literature Review Required	Meetings/ Informal Talks	Contact Experts	Written Survey	In Context	External	Guided Interview	Talked to People	More Readings
Max	✔	✔	✔	✔(i)	✔	✔	✔	✔		✔
Joan	✔	✔	✔	✔(i+e)	1	✔	✔	✔	✔	
Mike	✔	✔	✔		✔	✔	✔	✔	✔	
Julie	✔	✔	✔	3	✔	✔	✔	✔		
Rubin	✔	✔	✔	✔		✔		✔	✔	✔
May	✔	✔	✔	✔	✔			✔		
Emma		✔	✔	✔	✔	✔	✔			
Bill	✔	✔	✔	✔(u)	✔		✔		4	4
Sue		✔	✔	✔	✔				✔	
Alexis	✔	✔	✔	✔(u)(i+e)	✔					
Sam	2	✔		✔	✔5	✔	✔			
Eve		✔	✔	✔(u)	✔					
Rachel	✔	✔	✔							
Erin	✔	✔	✔			1				

Key:

1: Did prior to needs assessment assignment
2: "A lot of the stuff for this curriculum was already set."
3: "I considered contacting some experts, but what they think is already in the literature."
4: Bill left the fellowship shortly after completing the needs assessment, and could not continue work on this curriculum
5: Sent out surveys but none were returned
6: Experts outside own organization unless noted as below

(i) Contacted experts internal to the organization
(i+e) Contacted both internal and external experts
(u): Urged by fellowship faculty to contact experts

Activities prior to needs assessment. Ten of the 14 participants reported doing some form of needs assessment activity even before they started the fellowship. Four reported looking for related literature; five reported talking informally with their colleagues. Four more reported some form of data gathering activity: two had already conducted surveys, one reviewed students' evaluation data, and another had piloted a questionnaire.

Approximately half of the participants used the word "informal" in describing what they had done before they had learned of the needs assessment assignment. A common trend in all of the early activities was the participants' desire to "get a handle on things." Participants spoke of looking for literature because they "wanted to find out what was out there." Those who mentioned talking to colleagues spoke in terms of getting input on the topic for the curriculum they would create and/or refinements for the curriculum they already had in mind. As an example of the first situation, Max said "We've talked about this all year, not anything formally, but in talks between ourselves, or it has come up in meetings. Now I'm going to have a questionnaire for them to answer." As examples of the second, Bill said he had talked to others to find out what they thought about his major project idea, and Rubin said, "Talking to people about what I wanted to do helped me verbalize my vision....every time I told it to someone, it got easier."

Two others said that their organizations regularly conducted needs assessments (although they hadn't called it that), and they had referred back to the organization-wide needs assessment prior to

planning their own. For example, Mike spoke of how his organization had been conducting needs assessments for some time:

> When I started - I didn't realize it was a needs assessment per se. I was doing an ongoing evaluation of the curriculum...all my impressions, and all the data go back years...this is coming to a culmination of 5 years or more of impressions of what a curriculum in OB [Obstetrics] should be....But we didn't call it a needs assessment. The way it was utilized in the past was to problem solve a single issue -- to come up with a treatment before it cascaded into other issues.

Activities after needs assessment. Five of the fourteen participants reported activities related to needs assessment after the assignment was officially concluded.[1] The participants seemed not to have considered whether their follow-up activities were actually a kind of needs assessment. When asked by the investigator if they had done anything more related to needs assessment in the three months after handing in the assignment, many of the participants made obvious pauses while they stopped to think. Sue paused for at least five seconds before saying, "In terms of this project, the deadline for the needs assessment was artificial. It's kind of an ongoing process. I will keep working on it as I progress on my project." Sue took on the most ambitious post-assignment activity by having people interested in the same topic come together from organizations in two states for a focus-group meeting (although she prefaced this by saying, "And I don't know whether you would consider this part of the needs assessment or not..."). The other four reported more modest expenditures of effort, usually in talking to people for follow-up

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[1] Another three that mentioned very minor activities, like reading one more article, are not included in this tabulation.

questions, "finally catching up with" people that they had tried to reach earlier, or doing more reading.

Four of the participants reporting no activity spoke of plans to follow up on the needs assessment. Two mentioned additional surveys straggling in and wanting to add them to their tabulations for the coming fellowship assignment of writing an article. Another two spoke of wanting to find time to "do more needs assessment." Emma captured the attitude of many towards needs assessment as an ongoing activity when she spoke of her future plans:

> I want to do another literature review to see what else is out there that I can use in my curriculum. And I want to do more phone interviews with faculty at other institutions. I had intended to do more, but it takes so much time and they are hard to reach. Then you have to wait for them to call you....I am looking forward to doing more phone interviews. Really its a never-ending process....
> I don't even consider needs assessment as something that's done. I just stopped at an arbitrary point because the report was due. And now I'm going to go back and take a look again. I knew even back then that it would have been beneficial to do more. But in the time I had available to do it, and the deadlines I needed to meet, I needed to make some decisions. I would have talked to people more--I would have done more networking.

In contrast, two of the participants spoke of needs assessment as an isolated activity that had been completed. Eve spoke of other fellowship responsibilities. "I had to do my major project report, then I worked on the curriculum document," and did not see the needs assessment as related to these tasks. And Rachel spoke of being too busy with a higher priority task to do more needs assessment: "You see there's something you've gotta understand. Right now we're in the middle of applicant interview season and nothing is more important

than that to our organization." Both of these participants spent less time than most on their needs assessment assignments.

The investigator suspects that needs assessment activities conducted after the assignment due-date are under-represented in Table 8. This information was largely reliant upon the participants' recall and self-reports; their uncharacteristically long pauses suggested that they had not considered the relationship between needs assessment and subsequent activities. In addition, in later conversations, several participants who had said they had not done any more needs assessment activity spoke of something that the investigator felt qualified as "needs assessment activity." It is not known whether this happened because participants were not given enough time to reflect before answering, or because participants did not recognize some of their later activities as being a type of needs assessment.

In summary, what can be understood from the data is that the participants were initiating activities that qualify as needs assessment before they were formally introduced to the process, and about half continued with needs assessment activities after the formal time for needs assessment was over.

Finding #2: Taking a block of time to plan was the most effective way to begin the needs assessment. Although not listed in Table 8, 13 of the 14 participants specifically mentioned activities that helped them "get going" on the needs assessment for the assignment. Eight reported starting with the literature review. Participants spoke of wanting to "find out what was already out there" so they could ask

intelligent questions in their local environment. Another six participants spoke of reviewing materials they had received from the fellowship, especially reviewing the handout and adding to the exercises they had done during the workshop on needs assessment (Refer to Appendix G for the workshop handouts). Only one participant mentioned starting with both the literature review and the handouts - Julie. One participant, Alexis, admitted that she started late and did not report any form of start-up activity. Five weeks into the six-and-half week period, she could not report needs assessment related activity beyond "collecting piles of articles" that she had not yet read.

In summary, all but one participant spontaneously reported some sort of activity that helped them get started on their needs assessments. The one participant that did not report any such activity started much later than all the rest. The characteristic that appears to be common to all of the start-up activities participants reported is that the activity created a block of time in which to begin thinking about the topical area and planning the needs assessment before talking to others.

Finding #3: Assessors used informal and less structured activities more often than formal structured activities when conducting needs assessments. In Table 8, the seven major needs assessment activities performed by the participants during the assignment period are listed from left to right according to frequency. Each of the activities can be categorized according to the approach participants took. Three of the seven qualified as structured formal activities because they included

advanced consideration of the types of information to be sought, methodical collection of data from sources, and a documented analysis process. The literature search, written surveys, and guided interviews fit this category. The remaining four activities conducted during the needs assessment assignment period qualified as informal. For the more informal approach, participants did not report written advanced preparation, documentation of the data gathered, or the analysis process. Holding meetings, informal talks, contacting experts, and examining documents were activities that fell under the informal approach.

As an example, participants who wrote out questions in advance, asked these questions orally, then documented respondents' answers during or immediately after the interviews were placed in the more formal "Guided Interview" category. In contrast, activities in which participants spoke of "collecting people's impressions" but did not ask respondents the same questions or did not record their answers were placed in the "Meetings/Informal Talks" category. It should be noted that this difference was not associated with the level of formality of the interview with the respondent--both categories included "catching people in the hallways" as well as calling ahead for appointments.

Most frequent informal activities. There were thirty total instances of structured formal activities among the fourteen participants (14 being the required literature review) in contrast to 37 instances of less structured informal activities (none of which was required). Setting aside the most frequent activity, the formal literature review, the two next most frequent activities were informal in nature. Thirteen of the 14 participants conducted some form of

meeting with a group, or several informal talks with individuals, as part of their needs assessments. It is interesting to note that the one participant who did not do this, in responding to Table 8, said "A lot of the stuff for this curriculum was already set," so there was no point in further talks.

The third most frequent activity was also informal. Ten of the fourteen participants contacted experts. Although a formal approach through structured activities such as guided interviews or written questionnaires could have been used with the experts, all participants chose an informal approach. Nine made phone calls and one wrote letters. There is mixed evidence on how the formal required literature review may have impacted the number of participants choosing to contact experts. Three participants reported calling experts they had identified in the literature to ask follow-up questions, whereas another participant said "I considered contacting some experts, but what they think is already in the literature."

Varying approaches to surveys. Ten of the fourteen participants used written surveys.[2] However, there was considerable variation in the degree of "formality" in terms of structured preparation and analysis in these surveys. At least six of the ten reviewed drafts of surveys with fellowship faculty or local peers and then revised the surveys prior to distributing them. These six participants are listed in the top eight rows of Table 8. In contrast, three participants openly admitted typing up the surveys "in a few minutes" without reference to other materials. Of these three, one did not include people who would

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[2] One participant who conducted two surveys prior to the fellowship is not included in this tabulation, whereas another who sent out surveys with no response is included.

be involved as learners or teachers in the survey population; the other two sent out surveys to a much smaller portion of the available population than had the rest of the participants and their response rates were low (0% and 60% respectively). The point here is that the preference for an informal and less structured approach to data gathering and analysis is further strengthened by these three instances in which surveys were less rigorously designed and analyzed.

Informal use of documents. Participants also took a less structured approach when examining documents. The column "Documents in context" in Table 8 refers to printed information already available within the local organization. Seven participants examined documents in context, with five referring to evaluations of learners and/or curricula and two referring to learners' national medical examination scores. "External Documents" in Table 8 were information available from other organizations. In all seven cases in which external documents were consulted, participants referred to one or more guidelines for content and objectives in the topical area of their curriculum that had been published by national medical organizations. Of the seven who reviewed internal documents, three provided written evidence of a formal analysis of the data. For example, Emma reviewed previous learners' evaluations of the curriculum over a two year period and presented mean scores. In the remaining ten instances, participants presented general impressions from the internal and external documents or mentioned looking at them without saying how they had contributed to the needs assessment. In most cases, documents of both types were scanned

and participants generated impressions rather than rigorously documenting and analyzing the data contained in them.

And finally, participants took an informal, unstructured approach in all of the activities reported after the assignment was officially over. These activities were not included in the tabulation of formal vs. informal activities because they did not occur during the allocated needs assessment period.

In summary, the above description suggests that, unless specifically required, assessors tend to prefer informal activities such as talking with people and perusing documents over more formal activities which structure data collection and analysis and require written documentation.

Sources Consulted

The sources participants considered and ultimately consulted during the course of their needs assessments are displayed in Tables 9 and 10. Table 9 was constructed from participants' answers on worksheets from the needs assessment workshop. Participants filled out the worksheets when they were first exposed to needs assessment concepts and beginning to plan their needs assessment. Participants did not know that the worksheets were to be collected as data for the study, so the answers are more likely to be reliable "early thoughts" on sources rather than items deliberately written down for external consumption. In Table 9, data are presented on only ten of the participants as four did not fill out these worksheets. Table 10, a compilation of the sources from which participants collected data during the six-and-a-half week assignment period, was constructed

from interviews, observations, and documents. In findings #4 through #7, Tables 9 and 10 are compared to shed light on what potential sources the participants initially identified, and which they ultimately consulted.

Finding #4: Assessors did not involve representatives of every stakeholder group in the needs assessment. The types of people, or "stakeholders," that participants listed in worksheets as being affected by the current situation and/or the proposed curriculum are presented in Table 9. For example, Sue listed "residents," "faculty," "faculty at outside rotations," and "ultimately patients" in answer to "Who is affected by the problem?" (See Appendix G for needs assessment worksheets). A presentation of all the people and printed matter actually involved as data sources in the participants' needs assessments is outlined in Table 10. The differences between Tables 9 and 10 indicate that not all of the stakeholders recognized by participants were ultimately included as sources in the needs assessment. As described below, the participants consulted each of the sources in roughly equal proportions to the degree that they initially recognized them, with one exception.

It is shown in Table 9 that all ten participants who completed the forms perceived their learners (medical students or residents) as well as faculty as being affected. In Table 10, we see that, with one exception where current learners were not available, all participants made some attempt to collect data from both faculty and current learners.

Table 9

Stakeholders: "Who Is Affected?"

	Learners	Faculty	Patients	Other Members of Organization	Outside own organization	Illustration:
Julie	✔	✔	✔	✔	✔	"Prospective employers of our graduates"
Rachel	✔	✔	✔	✔	✔	"Hospital"
Bill	✔	✔	✔	✔		
Mike	✔	✔	✔	✔		
Sue	✔	✔	✔	✔		
Eve	✔	✔	✔		✔	"Local public health departments" "Community"
May	✔	✔	✔			
Rubin	✔	✔		✔		
Max	✔	✔			✔	"Residency program where our students eventually [work]"
Emma	✔	✔1				
Alexis	--------	--------	--------	--------	--------	
Erin	--------	--------	--------	--------	--------	
Joan	--------	--------	--------	--------	--------	
Sam	--------	--------	--------	--------	--------	

KEY:

✔   Listed on worksheets

——   Worksheets not available

1: "Any other faculty who cover nursery while I'm gone."

Table 10

Sources Consulted

	PEOPLE						PRINTED MATTER		
	In Own Environment					External	External		Internal
	Peer Faculty	Current Learners (Student or Resident)	Local Superior	Support Staff	Graduates	Experts ("E") Distant Peers ("P")	Literature **Required	External Documents	Internal Documents
Mike	✔	✔	✔	✔	✔		✔	✔	✔
Joan	✔	✔	✔		✔	✔E	✔	✔	no evals ✔
Max	✔	none available	✔		✔	✔EP	✔	✔	✔
Julie	✔	✔	✔		✔		✔	✔	✔
May	✔	✔		✔	✔	✔E	✔		no evals
Rubin	✔	✔	✔			✔E	✔		✔
Bill	✔	✔	✔	✔		✔P	✔		
Emma	✔	✔				✔E	✔	✔	✔
Sue	✔	✔	✔			✔P	✔		no evals
Rachel	✔	✔	✔	✔			✔		no evals
Eve	✔	✔	✔			✔P	✔		no evals
Erin	✔	✔		✔			✔		3
Alexis	✔	✔1		✔		✔E	✔		no evals
Sam	✔2	✔2	✔			✔P	✔	✔	✔

1:     Surveyed populations that were not intended learners (others may have surveyed faculty, but always also included intended learners)
2:     Main activity for both these sources was a survey which was never returned
3:     Looked at evaluations prior to beginning NA

"no evals":   No evaluation data on learners or curriculum available
"E":   Contacted "experts" identified from literature or from references
"P":   Contacted "peer" faculty in similar positions at other institutions

Similarly, "other members of the organization" (nurses, medical assistants and clerical staff) identified in Table 9 as being affected were consulted as sources (in the column labeled "support staff" in Table 10) in the needs assessment. It is shown in Tables 9 and 10 that nurses, medical assistants and clerical staff were consulted in about the same proportion as they had been recognized as being affected, that is, by approximately half of the participants.

However, even though patients were recognized as stakeholders, none were involved in the needs assessment. As indicated in Table 9, seven of the ten participants made explicit references to patients being affected.[3] Participants' comments during the exercise indicated they felt that the quality of the curriculum they produced would have a definite impact upon the quality of care future patients of their learners would receive. However, not a single participant collected needs assessment data from patients, as indicated in Table 10.

When the investigator presented this discrepancy to the participants as part of the final member check, the room was silent for several seconds. A discussion ensued in which one participant suggested that there could be legal implications to talking to patients as well as the logistical problems in trying to collect needs assessment data from patients while, as physicians, they are also trying to diagnose and treat patients in fifteen minute office sessions. Another participant countered that there was no real legal implication to collecting data from patients as long as a release form was signed by the patients, but acknowledged that she also had not consulted

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[3] It is interesting to note that of the three participants who did not write down "patients" on table five, two were the only pediatricians in the group. When the investigator approached the pediatricians about this, one shrugged his shoulders, smiled, and said "A lot of the time they can't talk back."

patients. The other participants remained silent on this issue. At the end of the meeting, the participant who had raised the legal issue approached the investigator privately and said, "You know, it had never even occurred to me to talk to patients." This participant had consistently ranked in the top half of Tables 8 and 10, indicating a fairly comprehensive needs assessment.

In summary, participants recognized a variety of groups as stakeholders in the intended curriculum. And each of the stakeholders were contacted as sources with the exception of one group: patients. Although many of the participants recognized patients as stakeholders, none had contacted patients. When questioned about this, many revealed that it had not occurred to them to collect data from patients. Findings #5 and #6 suggest a reason: patients were not consulted because the participants perceived patients as being only distantly related and outside the immediate context.

Finding #5: Data collection was focused on sources most like the assessors themselves. In Tables 9 and 10, we see that participants recognized stakeholders and collected data from sources with which they had the most in common.

Learners and peer faculty were most often consulted. As shown in Table 9, all ten responding participants saw their peer faculty members, other academic physicians, as people that should be involved. Similarly, their learners, people who were soon to become physicians, were also seen as stakeholders in all instances. With only one exception, in which current learners were not available, all fourteen participants collected information from both peer faculty and

learners (see Table 10). In five cases, participants also contacted graduates.

Although almost every assessor consulted these sources, there was considerable variability in how they were perceived as being related. For example, when writing about who would be affected by the curriculum, Emma limited her consideration to only the faculty that would occasionally fill in for her rather than all members of her department. On the worksheet, Emma wrote: "Any other faculty who cover nursery while I'm gone." And, although learners were consulted, initially participants were hesitant about consulting this source. When interviewed in February, three months after the needs assessments had been completed, several of the participants spoke of having been surprised by the idea of collecting data from and about learners.

There was progressively less recognition and involvement of people that held roles less similar to the participants.' Participants less often recognized people in their immediate environment, who were not peer faculty or learners, as stakeholders that should have their views incorporated into the needs assessment. Ten of the fourteen contacted a local superior, another physician of a higher rank in the organization, during the needs assessment; but, as shall be described under finding #7, this was sometimes for political reasons rather than to actually collect needs assessment data.

Non-physicians in the local environment were less often consulted. Six of ten participants identified other members of their local organization (nurses, medical assistants, or clerical staff) as being affected; a smaller ratio (six of fourteen) actually used them as sources in the needs assessment. Even in cases where people who were not

physicians would have significant involvement in making the curriculum work, they were less often consulted in the needs assessment. When interviewed in the midst of conducting his needs assessment, Mike stated that he was including support staff almost as an afterthought: "And last, I'm gonna ask the office staff -- nurse practitioners and nursing staff- what they think...I didn't think of doing that until yesterday, but it occurred to me that I should...." Months later, Mike acknowledged that he did not see support staff as providing critical input:

> What I really did was take a second pass, hitting some of
> the people not interviewed in the first pass, because I
> didn't care what they thought then. These were people
> with no power to stop me, but I did the second pass
> because I wanted to make sure they'd be happy with what
> I'd come up with, before it's totally dropped on them as
> "this is something you have to do."

And finally, as described in finding #4, seven of ten identified patients as being affected, but none incorporated them into the needs assessment process. This is true even for more than half of the cases in which students and residents would be learning in the curriculum by practicing their skills on patients.

When considering stakeholders outside their own organization, participants continued to focus on the medical community. For instance, in Table 9, it is shown that of the four instances in which participants noted that members outside their own immediate organization would be affected, in only one instance did a participant mention something outside of the medical context: Eve listed "community."

When contacting sources, participants demonstrated an attitude that, for information to be useful, it needed to come from other members of the medical profession. When contacting people outside their own organization, only one participant contacted a non-physician. Another participant explained that there was a "genuine need" for her curriculum on parenting issues because "nobody is out there [working on this area]." She went on to add, "The stuff that is out there is not from physicians." Instead, the information was from nurses or social workers, and the participant did not perceive their work as applicable. Also, participants showed a tendency to contact other members of the medical community with whom they had the most in common. As seen in Table 10, five of the ten participants contacting people outside their own organization contacted medical faculty in similar positions at other medical institutions (marked with a "P," for "peer," rather than "E" for "expert" in the published literature).

Participants demonstrated the same trend of relying on sources most like themselves when searching the literature. With one exception (Alexis), all of the participants limited their searches to the medical literature (although several were working on psychology or sociology related topics). Participants also displayed a tendency to limit their searches of the medical literature to information listed within their particular specialty. Only one participant included articles from all three realms of pediatrics, internal medicine, and family medicine in his annotated bibliography. In more typical examples, a pediatrician expressed hesitation in looking at guidelines for pediatric training published by a family medicine organization

(both provide care for children), and a family medicine physician interested in geriatrics doubted the usefulness of a reference that had come from internal medicine (which also treats the elderly).

In summary, the participants recognized stakeholders and contacted sources that were most like themselves. Most often, peer faculty were consulted and collection of data from learners (soon-to-be physicians) was a new idea that was accepted by the participants. There was a reluctance to use sources in other specialties of medicine; also, there was almost no contact with sources outside the realm of medicine.

Finding #6: Data collection was focused on sources within the assessor's immediate context. A trend that appears to be interrelated with finding #5 is that participants also focused on collecting data from sources within their own departments.

Internal sources. Table 10 is subdivided to show that six of the nine sources consulted were in the local context. As discussed in the previous finding, every participant made an effort to contact peer faculty and current learners in the context. To a lesser degree, support staff in the local context were also consulted. And internal documents, if available, were consulted in all but one case. "Graduates" were on the borderline in terms of context. Most often, the graduates contacted were well known to the participant. However, participants spoke of the difficulty of reaching graduates by phone, and a very small sample (two or three) were contacted in most cases. All of the participants that contacted graduates were part of the group conducting more comprehensive needs assessments.

External sources. Three of the nine sources listed in Table 10 qualified as external. First, the literature review was comprised of articles with a national focus or, at the very narrowest, a report on activities at another institution. Once again, since the literature review was required, it is not known how many participants would have pursued this activity on their own, or how having the literature review be required affected participants' choices of other sources to consult. Second, external documents were lists of content and objectives for topical areas published by medical organizations. As shown in Table 10, six of the fourteen participants collected and referred to these external documents as part of their needs assessments. It is interesting to note that again, in four of these instances, the participants conducting the most comprehensive needs assessments were the ones to make the effort to collect these documents. In the other two cases, there was an element of coercion involved: Emma was repeatedly reminded by fellowship faculty that she should obtain external documents; Sam was given the documents by his boss and told to use them as a guide for his curriculum.

Third, as illustrated in Tables 8 and 10, ten of the fourteen participants contacted experts outside the immediate context. Although this activity was performed by a majority of the participants, they perceived it as different from the rest. Participants were initially uncomfortable with this activity and described it as more risk taking with less immediate feedback. They expressed anxiety that these experts would look down on them, or frustration that the experts were hard to reach or took a long time to respond. Also, this demonstration of outside contact appears to be artificially inflated as

participants still tended to seek out sources that were geographically or by job description, "close." Three participants contacted experts in curriculum, research, or funding within their own organization--but not in their department--looking for some form of help in completing their projects.[4] Eight of the participants contacted experts in the curriculum topic area at other institutions. In at least three cases, participants were urged to do this by fellowship faculty.[5] Even within the category of contacting experts, there appears to be a trend of contacting sources that are most like the needs assessors, as demonstrated by the number of participants contacting peer level faculty at other institutions in Table 10, as well as a tendency to look within the local organization first for "internal experts," as marked in Table 10.

In summary, participants most often collected data from sources within the immediate context. The reasons most often cited for not contacting sources outside the immediate context were difficulty in reaching those sources and concerns as to how they would be received. This finding seems to be interrelated with finding #5--in the majority of instances in which external sources were consulted, the sources had characteristics closely matching the assessors' themselves (i.e. faculty in similar positions in other institutions).

Finding #7: The purpose of the contact, and the data collection approach used, was dependent upon the type of source being contacted. Although not evident from the data presented in Tables 8

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[4]These three instances of contacting "internal experts" are marked with the letter "i."
[5]Marked with the letter "u."

through 10, participants indicated in both interviews and documents that they were not looking for the same type of information from all sources. Participants also showed a tendency to choose a more or less structured approach depending upon the source.

Formal documented methods were most often used with local sources most like the needs assessors. Written surveys were used with both faculty and students by eight of the ten participants that conducted surveys. In these cases, participants were most often looking for popular support for their curriculum, and slightly less often collecting content suggestions. As an example, Sue sent a survey to both faculty and learners asking three questions:

1.   Do you think there is a need for a community medicine curriculum/rotation for residents in our family practice program? Why?
2.   Would you be supportive of such a curriculum?
3.   What do you think should be included in a community medicine curriculum/rotation?

In the five instances in which data were collected from graduates, the formal approach of guided interviews was used. Therefore, most of the formal structured data collection and analysis was conducted on information obtained from peer faculty, current learners, and graduates.

More informal undocumented methods were more often used with sources less familiar to the assessors. In contrast, participants consulted local superiors for a different purpose and took a less structured approach. Ten of the fourteen participants included at least one local superior in the needs assessment. Examples were program directors, department chairs, and physicians with a higher

rank and more time in the organization than the participants. Superiors were often consulted during the needs assessment for political purposes rather than to actually supply needs assessment data. In about half of the cases, participants spoke of consulting local superiors "just to keep them informed." Participants also used a less structured approach with local superiors. None were given surveys to fill out. Rubin, who was conducting guided interviews, said that he did not go through his questions with his superiors as he had when interviewing peer faculty and learners because "they probably wouldn't sit still for it...so I need[ed] to do it in a different manner." He said he talked to them without paper or pencil in hand, then wrote down their answers after the meeting. Two other participants spontaneously mentioned difficulties in using a structured approach with local superiors.

Another source with which the purpose and approach of the needs assessment differed was support staff. In two of the six cases in which nurses, medical assistants, or clerical staff were consulted, a formal survey was used and they were asked the same questions as the rest of the respondents. In the remaining four instances, informal talks were conducted and there is no documentation of the purpose of consulting them. However, participants most often shared in interviews that they had talked to support staff to gather their opinions on the need for the curriculum and whether or not "they would be willing to go along with the change."

And finally, as mentioned under finding #3, with the exception of the literature search which was required as a formal structured activity, participants chose an informal approach to collect information

from both documents and people external to their own context. In participants' needs assessment reports and conversations, the literature was used to substantiate a need for their intended curriculum, and less often for content suggestions.

In summary, participants contacted various sources for different purposes. The major purposes were to assess <u>support</u> for the project and to collect input on <u>content</u>. To a lesser degree, <u>instructional strategies</u> were also solicited. Peer faculty were consulted for both support and content. Learners were consulted for support and, to a lesser extent, content suggestions. Other sources in positions less like the participants' were contacted for more political rather than data collection purposes: superiors to maintain their support for the project, support staff most often (almost as an afterthought) to secure their support by making them feel they had some input. The majority of formal written data collection and analysis was conducted with data collected from peer faculty, learners, and graduates.

WHAT FACTORS FACILITATE AND/OR HINDER THE NEEDS ASSESSMENT PROCESS?

The factors that facilitate and hinder the needs assessment process will be illustrated by describing and explaining phenomena that occurred on the level of 1) the individual needs assessor, 2) the fellowship program, and 3) the home organizations of the participants. The following eight findings were derived by comparing and contrasting the needs assessment experiences of the fourteen participants. Consistent patterns were found in which participants who expressed frustrations related to needs assessment were thinking and/or behaving differently than those who were not expressing as much frustration with the process. Furthermore, after these findings were derived, the investigator discovered that most often, the participants listed in the top half of Tables 8 and 10 had demonstrated facilitating factors, whereas those on the bottom half of Tables 8 and 10 had presented the majority of examples of hindering factors.

The Individual Needs Assessor

In findings eight through twelve, factors which facilitate or hinder needs assessment on the level of the individual needs assessor are described.

Finding #8: Needs assessments were hindered by the vagueness of the concept for beginners. The terminology and methods of needs assessment were new to the participants. When first learning about it, most expressed some form of confusion or anxiety about the process.

Bill's description of his early feelings about needs assessment is representative of what many participants expressed:

> At first it sounded to me - geez, this is a big thing. Will I be able to do it? I felt threatened; there were so many new terms....It turns out [needs assessment] is no more difficult than day-to-day activity, but at first I really wondered.

The early confusion over just what constituted "needs assessment" continued as the participants were attempting their own. In the phone interviews conducted while participants were in the midst of their needs assessments, several of the participants openly asked the investigator if they were doing it "right." May asked, "Just for my own peace of mind, am I on the right track?"

It wasn't until several months after the assignment was completed that participants spoke of understanding needs assessment. Many later described needs assessment as "common sense," something they already naturally used. This will be explored further in answering research question #3. Like Bill, above, they had not understood the concept because it was presented with new terminology and as something "different."

Finding #9: Needs assessments were hindered by unexpected time demands and delays. Several time considerations either facilitated or hindered participants' needs assessments. In general, needs assessments were facilitated by the investment of more hours and an early start. However, most participants also described

concerns related to time that hindered their needs assessments. Time on task, starting time, and time concerns are discussed below.

Time on task. There is a positive relationship between the amount of time spent on the needs assessment and the comprehensiveness of the needs assessment. In general, participants reporting spending more time on the needs assessment conducted a greater number of needs assessment activities, as listed in Table 8, and collected data from more sources as listed in Table 10. As mentioned earlier, participants are listed in Table 8 according to the number of activities performed, with close cases ordered according to the degree of effort given to each activity. In Table 10, "Sources Consulted," participants are listed according to the same criteria. After this ordering was completed, it was found to be closely related to the participants' own estimates of time spent on the needs assessment.

For both Tables 8 and 10, the same six participants occupy the first six rows, indicating that they conducted the most comprehensive needs assessments. These six participants estimated spending between 50 and 100 hours. Two participants estimating twenty hours, Emma and Bill, share the seventh and eighth rows in Tables 8 and 10. The four participants estimating between eight and fifteen hours of effort occupy the bottom rows of Tables 8 and 10.[6]

Self reported "time on task" appears to be a fairly sensitive measure of productivity, especially in cases where less time was spent

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[6]There were two exceptions of people reporting 50 or more hours and still having less comprehensive needs assessments than participants that had spent considerably less time. In both these instances (Alexis and Sue), their time estimates included significant periods for activities that were not directly related to needs assessment (such as meeting with people to get grant funding, or renegotiating work expectations).

on the needs assessment. There is an obvious difference in how comprehensive were the needs assessments of those spending fifteen or less hours, those spending twenty hours, and those spending fifty or more hours. However, differences were not readily apparent between participants within each of these groups. In other words, one hundred hours on task did not necessarily indicate a more comprehensive needs assessment than one in which fifty hours was spent.

Starting time. Assessors who conducted more comprehensive needs assessments also made early attempts to begin their work. The first six participants listed in Table 8 were observed doing some form of preparation or early needs assessment activity: they approached fellowship faculty to ask questions about the assignment before the needs assessment workshop and several left the on-campus session with completed drafts of their questionnaires. Most important, those assessors with more comprehensive needs assessments began collecting and analyzing data earlier than the rest.

The distinction between those who began earlier and those who accomplished little at the three week point established a pattern that continued to the end of the needs assessment period. Three weeks into the needs assessment period, those participants listed in the top half of Tables 8 and 10 reported substantial amounts of activity and time investment. They had distributed surveys, conducted most of their interviews, and read at least a portion of the literature they had collected. They had begun to look at their data and estimated that they were more than half way through the process. These six

participants estimated having spent between 24 and 80 hours (an average of 47 hours) on the needs assessment during the three weeks.

In contrast, participants who started later reported lower time investment, little or no data collection activity, no data analysis, and little or no reading. For example, Sam, Eve, Rachel, and Erin reported spending between 1.5 and ten hours (an average of 5 hours) on needs assessment. The two who had collected data reported conducting informal talks in which they had not documented responses. Three of the four estimated that most of their work was still ahead of them.

Time concerns. While conducting their needs assessments, the participants overwhelmingly identified time factors as their single largest concern or problem. They identified three ways in which time was hindering their needs assessments: 1) the needs assessment required more of their own time than they had expected, 2) it was difficult to schedule other people's time, and 3) there were unexpected time delays.

When participants indicated time was a concern is displayed in Table 11, "Time Concerns." Participants are listed in Table 11 in the same order they appear in Table 8. Those participants who conducted less comprehensive needs assessments anticipated fewer problems, but encountered more time problems. Before starting the fellowship, when questioned about concerns regarding obtaining resources or implementing their projects, five indicated they expected no problems at all.[7] However, when interviewed during the needs

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[7] Care should be taken when comparing the numbers of written responses with later spoken responses. The points are that 1) more than a third of the participants (mostly those conducting less comprehensive needs assessments) had expected no problems, and 2) when interviewed, more than two thirds experienced time problems.

Table 11

Time Concerns

	Before Starting Fellowship? (written)	While Doing the NA? (interview)
Max	X	✔✱
Joan	----------	
Mike	X	
Julie	X	✔✱
Rubin	✔	✔✱
May	"none"	
Emma	✔	✔✱
Bill	X	
Sue	"none"	✔✱
Alexis	X	✔
Sam	"none"	✔✱
Eve	"none"	✔✱
Rachel	X	✔✱
Erin	"none"	✔✱

KEY:

✔	Time concerns described (in written or spoken form) by participant
X	Concern other than time written by participant
"none"	Wrote down "expected no problems" (one left blank)
✱	First response when asked about problems or concerns
----------	Data not available

assessment period, ten of the fourteen described time problems. In fact, in interviews participants described time as the most important and often the only problem experienced. Julie's response, when asked what problems or concerns she was experiencing in the needs assessment, captured what most of the others also expressed:

> Put this in capital letters - TIME...it takes so long...I had not anticipated needs assessment would be so involved, nor had I anticipated how much start up time would be needed. It took me the better part of a WEEK just getting the surveys prepared and formatted so I could get them out....I had absolutely no idea needs assessment would be so involved.

Many of the participants spoke of being surprised by how much of their own time needs assessment took. They had estimated that it would take much less time to accomplish each activity. In particular, many of the participants spoke of how long it took to create questionnaires, and how much time they had spent on administrative tasks such as distributing the questionnaires or setting up interviews.

As described in finding #14 ("Balancing work and fellowship demands"), many participants also spoke of other work commitments making it difficult for them to devote time to the needs assessment. Three participants directly mentioned that their department was short one or more faculty; others spoke of work that had piled up while they attended the two week fellowship session. Several had worked on their needs assessments in the evenings and on weekends; one took a week's vacation time. Rubin described the balancing act that participants performed in devoting their time to the needs

assessment while fulfilling other work responsibilities: "When I work on this, something else gets put on the back burner."

About half of the participants also described situations in which lack of other people's time hindered the needs assessment. People did not have time to talk to assessors or complete questionnaires. Participants reported interviews being interrupted or canceled. This happened most often with superiors.

The third time concern was lag time. More than half of the participants described unanticipated time delays in the needs assessment. They had to wait for phone calls to be returned, for ordered materials to arrive, or for interview appointments. The most prevalent lag time was in the return of questionnaires. Most participants who used questionnaires described problems with getting them back in a timely manner. Although they had listed a return date on the questionnaire, many sent out a second round because few of the first round were returned, and three participants reported completed questionnaires had "appeared on their desks" months after the needs assessments were over.

In summary, in finding #9, the factors that facilitated and hindered the needs assessment related to time on task, start time, and participants' time concerns. First, needs assessments were, within limits, facilitated by greater time on task. Assessors reporting fifty or more hours on their needs assessments used more needs assessment methods and contacted a greater variety and number of sources. However, there appeared to be a limit to the benefits of increased time on task, as expenditures of close to a hundred hours did not necessarily result in more comprehensive needs assessments

than those in which 50 hours were spent. (See findings #11 and #15 for support of this finding.) Second, in cases in which needs assessments were started earlier, they were more comprehensive. Assessors who delayed the needs assessment spent less time on task, conducted less comprehensive needs assessments, and worried more about being able to complete their need assessments. Finally, participants reported three different types of concerns related to time which hindered their needs assessments. They were: 1) surprised by how much of their own time needs assessment activities required, 2) unprepared to balance needs assessment demands with other work demands, 3) hampered by limitations in other people's time, and 4) were slowed down by time delays. This finding on time is probably closely related to the following finding on the motivation level of the assessors.

Finding #10: Needs assessments were facilitated by assessors possessing moderately high expectations. One of the factors that differed between the participants on the top and bottom halves of Tables 8 and 10 was how much they expected the needs assessment to be useful. Examples of assessors possessing moderately high expectations were May and Julie, who planned on publishing their curricula and spoke of a "rigorous" needs assessment increasing their chances. However, expectations which were too high or low were related to decreased effectiveness. Alexis expressed very high expectations for everything she did. She made statements like "I want to do it right. It's got to be perfect." She experienced difficulty in bringing her needs assessment to completion. Participants with low

expectations also produced less comprehensive needs assessments. Sam, who often spoke of the intended curriculum as being his boss' idea and openly conceded that he didn't think the needs assessment would change anything, conducted one of the least comprehensive needs assessments. Assessors with extremely high or low expectations also began their needs assessments later than the rest--a factor that may be related to the previous finding.

In contrast to the extremely high and low expectation assessors, assessors with moderately high expectations monitored the effectiveness of each activity. They spoke of completing tasks to the best of their abilities, but allowing themselves to call an end to each task. For example, Rubin was troubled that he had not found much about his topic in the literature. But after several hours of searching, he decided that continued time spent searching would not be worth the return. And Max tempered his expectations as to how many former students he would reach for phone interviews as they were still working long hours and moving to new sites every month or two: "Realistically, if I reach five to ten, I'll be happy."

Assessors with lower expectations spent time thinking about possible future problems and did not use the needs assessment to collect data related to solving these problems. All the documented instances of participants expressing limitations to their final project were collected from participants as shown in the bottom portions of Tables 8 and 10. For example, Sam often questioned the feasibility of running small groups for more than one hundred students in a single day, but he did not ask sources for input on how to make small groups work or for suggestions on other ways to deliver the curriculum. At a

stage in which they had been instructed to open themselves to a variety of ideas and options from which they could later select, low expectation assessors began thinking very early about limitations that could occur when they implemented their curricula--and did not collect needs assessment data in these areas.

In contrast, assessors demonstrating higher expectations were motivated by discoveries that lower expectation assessors considered limiting. Many participants reported finding (from the needs assessment) that there was no existing curriculum similar to the one they wanted to create. Participants with higher expectations, such as May, found this encouraging: "I'm excited about doing it -- it's kind of exciting going into uncharted territory...I stand to be able to make a difference in a very important area." Many participants said the needs assessment validated a need for the curriculum and mentioned there being "a lot of interest" in their project, but little support. Although both the low and high expectation participants had learned they would have to complete the project without help from others, the low expectation participants spoke of this as a concern, even questioning whether they would be able to complete the project; whereas the high expectation participants spoke of the need to rely upon themselves when planning their strategy for accomplishing the project.

It is interesting to note that the participants' levels of expectation of the needs assessment as gauged by their actions was not in agreement with their stated value of needs assessment. When directly asked for their analysis of the importance of needs assessment (on a one to ten scale), all except one rated needs assessment very high. Eight of the fourteen gave needs assessment a full score of ten,

only two gave it a score lower than eight. In fact, the few scores of eight or lower were given by participants who had spent larger amounts of time on the needs assessment. (Everyone who spent fifteen or fewer hours gave it a ten.)

In summary, assessors expressing moderately high expectations of the usefulness of needs assessment conducted more comprehensive needs assessments than those with higher or lower expectations and perceived fewer hindrances to their needs assessments. Moderately high expectations were demonstrated by: 1) ceasing activities that were ineffective or unrealistic, 2) using the needs assessment to collect data to seek solutions to potential future problems (rather than avoiding collecting data on this area), and 3) seeing challenges unearthed from the needs assessment in a positive light.

Finding #11: Needs assessments were facilitated by the presence of key skills in the assessor. There was a clear differentiation in particular skill areas between needs assessors who described problems and frustrations during the needs assessment process and those who did not. Key skills which facilitated the needs assessment process were: time management, change agentry, and bias controls in data collection and analysis.[8] Each of these skill areas will be described in turn.

Time management. The impact of assessors' abilities in this area was already made evident in finding #9 in which time on task, start time, and time concerns were described. Although almost everyone

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[8] Time management and change agentry skills were ascribed to participants based on consistent patterns in behaviors and statements. The investigator suggests administering instruments measuring time management and change agentry skills to participants in future studies.

reported being surprised by how much time needs assessment took, those who demonstrated fewer time management skills reported the majority of problems in finding time to do the needs assessment. In general, those who demonstrated time management skills also reported more time on task, an earlier start, and fewer time management problems in relation to the needs assessment. In contrast, those who had spent significantly less time on the needs assessment reported almost all the instances of difficulties in finding time to do needs assessment.

This is not a surprising phenomenon. What is interesting is that time management skills made a significant difference in facilitating the needs assessment even in cases where <u>less</u> time was available. For example, both Emma and Alexis had similar difficulties in receiving release time during work hours to conduct their needs assessments. Emma, who demonstrated more skills in time management, went directly to work on her needs assessment with the time available, accomplishing small pieces where an hour or less was available. In contrast, Alexis was continually negotiating with her superior for larger protected blocks of time in which to work on her needs assessment. She did not use smaller periods that were already available to conduct her needs assessment.

Those skilled in time management nonchalantly reported conducting their needs assessments in the midst of their usual daily activities. Rubin interviewed his learners a few minutes at a time when they were "hanging around" in between seeing patients. Mike and May handed their surveys out at meetings at which most of the respondents were present.

The use of such time management skills often compensated for the extra efforts expended by the most motivated participants. For example, Julie was highly motivated and took a week's vacation time to complete her needs assessment. However, she spent a number of hours on administrative tasks such as distributing her surveys (twice) and keeping track of who had yet to return them. Mike and May spent less time away from work on their needs assessments. They had similar response rates on their surveys at substantially less time investment than Julie because of the time efficient way they chose to administer the surveys.

Change agentry. A number of assessors reported problems in their needs assessments that could be attributed to lack of knowledge and skills in promoting change, whereas other assessors almost unconsciously employing change strategies had fewer problems with their needs assessments. An excerpt from the investigator's reflection journal, written while participants were in the midst of conducting their needs assessments, illustrates how a comparison of cases led to this discovery:

> **TN** [10/13/92] : I have to be more rigorous in looking for this in notes, but this idea has been growing over the course of the day. It was probably what my note of Ng's study was also trying to get at. Needs analysis without knowledge of change agentry is a frustrating and perhaps even a (personally) dangerous thing. I'm thinking of Joan's experience where she had her curriculum group (for which she forced a meeting to be called) first identify what they thought were the things that should be taught in a FP [Family Practice] curriculum and assign percentages; then she showed them RRC [the national accrediting association] requirements, then produced the current noon conference schedule showing that what they were currently teaching was way out of line with their own expectations as well as guidelines. This wound up being

> frustrating for her because the people don't want to take
> the extra effort to change. She [aroused] discomfort
> without providing a way out of the discomfort (my analysis,
> not her statement).
>
> Or Alexis, who said she sat in an eight hour meeting with
> doctors with decades more experience than her who want
> to just go forward and put in a new curriculum (to get a 3.4
> mil grant) without doing a NA [needs assessment] or
> anything else. It's hard to get permission to do a NA. If
> you do one, you may come up with some surprising results
> that others don't like, or even perhaps that you don't like.
>
> [In contrast] Rubin continually emphasized going and
> talking to people, to "keep in touch" or "keep key people
> informed." This, to me, demonstrates use of NA
> techniques not so much to gather data, but to promote
> acceptance of the changes that emerge from the other
> portions of the NA.

The above entry describes how three participants' different levels of

understanding of change either hindered or facilitated their needs

assessments. Joan described many conflicts with others in her

organization rising out her needs assessment activities. These

conflicts could be attributed, at least in part, to her lack of knowledge

and skill in change agentry. In the above example, Joan made others

aware of the current deficiencies of the system THEY had created,

without also devising a graceful way for them to fix the problem

without embarrassment or too much additional effort. Joan expressed

surprise that committee members did not "jump at the chance to fix

the problem," and also said she was hurt that "Two of the people that

were in that meeting--it seems like they're avoiding me now." Alexis

recognized that needs assessments require the use of change

strategies, but did not know how to do this. She recognized a

potential for conflict, did not have change skills to call upon, and

opted not to act. In contrast, Rubin almost unconsciously

incorporated change strategies into his needs assessment process. He not only recognized that needs assessment implied change, he had change skills and naturally employed them as part of his needs assessment process. Rubin, as well as other participants who employed change strategies, reported fewer or no problems with other people resisting change.

Bias controls. All of the participants failed to follow one or more common procedures for bias control in data collection and analysis. In some instances, participants later learned that not having followed these procedures hindered the needs assessment process. And in many more cases, participants assumed the correctness of their conclusions, when experts would question their conclusions based upon the faulty data collection and analysis process. Instances in which bias was not controlled were most evident in the surveys, because this method was documented. Therefore, the following illustrations are drawn from the survey methods of the participants. Once again, participants on the lower portion of Tables 8 and 10 demonstrated fewer bias controls than those listed on the top half of the tables. Examples of data collection and analysis procedures which either hindered the process or would lead others to question the veracity of the conclusions were: 1) asking leading questions, 2) no review or pilot of instruments, 3) low response rates, and 4) reporting conclusions without presenting supporting data.

Leading questions. Participants sought information from respondents for a variety of purposes. Most often, they wanted to know if there was support for the intended curriculum. To a lesser degree, participants sought input on content and on teaching and

evaluation methods. When surveys were used to assess <u>support</u> for the intended curriculum, many of the participants phrased questions in ways which cued respondents that an affirmative answer was being sought. These questions were also stated in general terms which made it easy for respondents to answer in the affirmative. For example, Eve asked: "Does there need to be more education about community medicine/public health issues in the first two years of medical school? If so, please explain." Participants then interpreted a positive response to questions such as these as support for their intended curriculum.

Many of the participants also solicited <u>content</u> suggestions from survey respondents. However, the surveys were often constructed in a way that led respondents to confirm the content that had been preselected by the assessor, such as asking respondents to check off listed content areas that should be included in the curriculum. Julie was quite open about guiding the content selection process. Before the needs assessment, she was concerned that survey respondents would pick a curriculum content area in procedures in which she was not proficient. She told the investigator that she constructed the survey in a way that would prevent this problem from arising:

> How did I resolve that? I was kind of sneaky in making the
> survey. I asked what top 5 procedures should be included
> in the Family Practice curriculum instead of which one
> procedure was most important...it is likely to turn out the
> one thing I wanted to do would be in the list of top 5.

Less often, participants solicited suggestions on <u>how to teach and evaluate</u> the intended curriculum. In these cases, the questions

were often worded in a way for respondents to support the participant's preferred method. For example, Max's survey draft asked graduates, "Would a written notebook of core information and self study materials have been helpful? If so, please make any suggestions as to what information you would like to see included." He received mentor feedback that this question was leading. Mentors suggested rewriting the question to read, "What suggestions do you have about how information could be conveyed to you?" However, Max's revision still referred to his preferred method: "If a manual of core information and self study materials was made available, what information would you like to see included?"

No instrument review or pilot. In the needs assessment workshop, and in individual conversations with mentors, participants had been urged to have other people review questions and to pilot questionnaires to "work out the bugs" before wider dissemination. Approximately half of the participants had a fellowship mentor or colleague in their local organization review a draft of questions. However, the other half spoke of sitting down, "typing up a little questionnaire" and sending it out without review, often the same day. Participants who did not pilot questionnaires later reported more problems in getting them returned. Fellowship faculty suggested this happened because the questionnaires had been vague and hard for respondents to complete. In two instances, participants had such a low response that they sent out a revised version of the questionnaire.

Assessors who had not reviewed or piloted their questionnaires also experienced more problems in interpreting the results. Several participants reported respondents not giving answers in the way that

had been expected. As an example, Alexis, who did not pilot her questionnaire or have questions reviewed, spoke of difficulty in interpreting a particular question:

> I realized afterwards that it was a bad question. "Do you think this curriculum would enhance your medical education or ability to be an effective physician?" There is actually three questions in this question, which I didn't realize when I wrote it, but I realized when I got the answers back. One is would it enhance you, as in do you need to be more culturally sensitive? Two, would it make you a better physician? And three, is this curriculum important? I mean, that's really the three questions I'm asking in this question.

Low response rates. Several of the participants had low response rates on their questionnaires. Although fellowship faculty expressed concern that low response rates hindered the validity and reliability of the results of the needs assessment, this was not a concern of the participants. The only hindrance related to low response rates reported by participants was that they worried about not getting surveys back, and several were especially concerned about not having surveys returned in time to be included in the needs assessment report. However, none described a low response rate as a problem that would hinder the ultimate accuracy and value of their needs assessment results.

For example, Eve was one of many participants who was concerned about not getting surveys returned. However, she did not connect the implications of a low response rate to her needs assessment conclusions. Eve received seventeen completed surveys out of 44 distributed. Of the 39% responding, a portion felt there was not a need for Eve's intended curriculum. In her report, Eve

interpreted the following from the surveys: "The majority of faculty felt there was a definite need for more education in teaching about different cultural groups and students on clinical rotations echoed the need for more instruction." Fellowship faculty expressed concerns that Eve's curriculum might later be hindered by lack of support as the opinions of 61% of those surveyed were not known, and a portion of those responding expressed reservations.

It is interesting to note that even participants who stressed the need for a high response rate seemed to do so for reasons other than the needs assessment itself. Both Julie and May spoke often of wanting to get a response rate of 80% or higher. Yet, often in the same sentence, the reason given was for the data to be "publishable." The investigator at no time heard either one say that they would then feel they had an accurate understanding of what the stakeholders thought.

Reporting conclusions without supporting data. Participants rarely reported their needs assessment process and data in a way that allowed readers to determine for themselves whether or not the conclusions were valid. Although the assignment included a specific checklist of what to include in the written report, and a "model" report from a previous fellow was provided, participants most often reported their conclusions without presenting supporting data. Participants often did not describe sources contacted and methods used in sufficient detail for readers to follow their process. Even more often, "Gestalt" conclusions were reported without data to back them up. The majority of participants did not report quantifiable

information such as numbers of sources consulted or tabulated responses on written surveys.

Many participants presented general conclusions without reporting on the process of analysis or the support for each of the ideas. For example, Mike stated, "The results of the needs assessment demonstrated a consensus of opinion among the respondents that the priority for curricular improvement should focus on developing clearly stated goals and objectives for the various obstetric training experiences," without describing the questions asked, the sources, or how many gave this answer.

Moreover, it appears that participants often wrote up their conclusions with little reference to the written data. Although an analysis worksheet was available in the assignment handouts, no participant spoke of having used it. In conversations before and after the participants wrote their reports, they rarely spoke of looking at their data. They used words which suggested a less rigorous approach to analysis: Mike spoke of "collecting impressions" and Rachel spoke of "synthesizing" the data, saying there wasn't "a one-to-one correspondence between the questions and the answers."

Even in cases where the participants were forthright in presenting the data, their conclusions were not clearly connected to the results. For example, Julie started her needs assessment with the belief that poor training and documentation of competency was preventing graduates from obtaining hospital privileges to perform procedures. She discovered in the needs assessment that:

> None of the graduates had difficulty obtaining privileges
> because the current evaluation system was

inadequate....[and] graduates unable to obtain privileges
were denied solely because they were family practitioners.

Nevertheless, one of her conclusions was to incorporate a better
documentation system into the new curriculum on the grounds that
the new documentation system "may enable family practitioners to
obtain privileges in areas where they are currently unable to do so."

In several other instances, the assessor concluded that a
curriculum was needed in spite of data to the contrary. For example,
Max discovered:

> "evaluations from the past year revealed an overwhelmingly
> positive response to this portion of the clerkship,"

and

> "when questioned as to the weakness of the ambulatory
> rotation at the [name], the only responses other than
> 'none' were that students wished this segment of the
> rotation could have been longer."

However, after reporting these results, Max concluded that further
improvements could be made to this already good curriculum.

In summary, assessors demonstrating behaviors which suggested
fewer skills in three areas experienced more problems in conducting
their needs assessments. These areas were time management, change
agentry, and bias controls. Assessors demonstrating poorer time
management skills experienced more difficulty in finding time to
work on their needs assessments and in conducting the needs
assessment in ways that maximized the time available. The
description of three participants' change experiences illustrated how
needs assessments were facilitated by assessors who not only

recognized the relationship between needs assessment and change, but also were equipped to employ change agentry strategies during the course of the needs assessment. Finally, failure to employ bias controls on the data collection and analysis process hindered the needs assessments from the perspective of the fellowship faculty, if not also from the perspective of the participants.

Finding #12: Needs assessments were hindered by a too wide or too narrow focus. Participants who expressed the least difficulty with the needs assessment process started with a somewhat broad area in which to ask questions, and progressively narrowed their focus over the course of the needs assessment. In contrast, assessors who described more frustrations with the needs assessment process did not narrow their focus, or began with too narrow a focus. Each of these three patterns will be described in turn.

A progressively narrowing focus. Experienced fellowship faculty said that every year the majority of fellows begin the fellowship with too large a project in mind. For those on the curriculum track, the project becomes smaller and more specific as they learn about what is involved in creating a curriculum and conducting the needs assessment. For example, Julie began the fellowship with the intention of creating a month-long rotation in which 13 procedures would be taught. After two weeks of training, she realized she could only teach "about half a dozen" procedures. Over the course of her needs assessment, she selected one procedure and collected suggestions on content and how to teach that one procedure.

Too broad a focus. Assessors who did not progressively narrow their focus experienced difficulty in drawing their needs assessments to a close. For example, Erin, Rachel, and Alexis collected many more (a hundred or more) articles than required, saying they did not want to "miss anything" in the literature. These three participants still had very large projects and had not developed a few specific implementable conclusions after completing their needs assessments.

Rather than periodically reviewing the data already collected, and basing decisions as to next steps of the needs assessment upon this data, assessors who did not narrow their focus continued to expend energy in areas that were not likely to yield new information. Max, who spent the largest number of hours on his needs assessment, later spoke of the limited value of his time investment:

> I worked fairly hard on it - I would say more than was justified. Now that I can look back on it, I would have preferred to have put more time into specific aspects of creating the curriculum instead....I search for facts to back up my hunch, and I try to do too many things to make sure...I didn't need to do so many things....

Like Max, other assessors, who kept checking for additional data in an area where they already had substantive data, expressed frustration with the needs assessment.

Focusing was a major problem for Alexis in particular. She began the fellowship wanting to do two major projects: develop a curriculum and write a major grant to get funding for the curriculum. She later wanted to develop both the curriculum and the training for facilitators of the curriculum. Months later, Alexis described how she had

conducted her needs assessment in the same way that she approached other tasks in life:

> I have real difficulty in focusing because I see endless possibilities. And [in the needs assessment] I didn't trust myself to decide what was important, what was nice to know, and what was fluff....I didn't know what I was looking for. I kept asking myself, "How am I ever going to know - did I pick the right things to look at?"

In these cases, the needs assessments were hindered by the assessors' inability to 1) determine that sufficient data had been collected, 2) make a decision based on the available data, and 3) proceed on to the next phase of the needs assessment.

Too narrow a focus. In contrast, other assessors began the needs assessment with such a fixed notion of the problem and solution that they did not collect data on other options. For example, Emma experienced difficulty in recognizing sources other than herself and her learners that were stakeholders in her curriculum on the normal newborn nursery. She saw herself as the person who was solely responsible for the curriculum; she didn't see how she might get good input from other people in the hospital who interacted with her learners on a regular basis during the month long rotation, such as the nurses who tended to the babies in the nursery.

An interesting phenomenon was the ability of participants who had a very narrow focus in their own needs assessment to ask broad questions in other participants' needs assessments. For example, Emma was concerned that learners were not seeing as many babies as they could be, because time was taken away from the curriculum for a morning conference at a different hospital. This also created extra

work for Emma, as she then had to tend to the babies herself. Emma described how her needs assessment had "empowered" her to tell learners in the future that on the one or two days a month when the nursery was particularly busy, they should skip the regularly scheduled morning conference so they could care for more of the babies. Sam, who had a very narrow focus in his own needs assessment, asked questions that challenged Emma's perception of the problem and her proposed solution. Sam questioned whether the conference was actually the reason why learners weren't seeing many babies. He suggested if the concern was that the learners were not seeing enough babies--perhaps the curriculum could include a minimum number of babies to be seen over the course of a month. He also proposed more sweeping changes, such as questioning whether the conferences had to be attended at all.

Another interesting discovery was that participants could exhibit both a too-broad and a too-narrow focus in different aspects of the same needs assessment. As described above, Max had difficulty narrowing his needs assessment in the area of establishing what the current state of the curriculum was. However, as described in the previous finding under bias controls, he also demonstrated too narrow a focus when he persisted in asking a leading question about a solution he had already decided to use in his curriculum.

In summary, assessors who began with a broader focus, then periodically reviewed their data and made decisions as to how to further narrow their focus of inquiry, experienced fewer problems during the needs assessment. Needs assessments were hindered by an inability to focus over the course of time; opportunities to perceive

new and useful ideas were missed in cases in which the focus was already narrow at the beginning of the assessment.

The Fellowship Program

The context of the fellowship also presented factors which facilitated or hindered the participants' needs assessments. Most of these factors, which may limit the transferability of the findings, were outlined in Chapter IV. However, aspects of the particular context described in finding #13 have implications for other contexts.

Finding #13: Needs assessments were facilitated by timely access to helpful materials and human resources. With one exception, participants were learning about needs assessment for the first time at the fellowship.[9] Therefore, the methods by which needs assessment concepts were taught, and the circumstances under which this learning occurred, had a large impact upon how well participants were likely to learn and be ready to apply needs assessment concepts. Four aspects of the fellowship which either contributed to or hindered participants' understanding of, conducting of, and reporting of their first needs assessments are reported below.

First, the **timing of the workshop** hindered the participants' understanding of needs assessment. As described in Chapter IV, many participants reported being frustrated by how late the needs assessment workshop occurred in the two-week session. They felt they could have had the workshop earlier, then apply what they

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[9] Joan had learned about needs assessment as part of a two-and-half day workshop on curriculum design and implementation. As this brief overview of needs assessment was taught by a fellowship faculty member using materials from the fellowship, the concepts Joan was exposed to would not conflict with those taught in the fellowship.

learned in the workshop to other experiences in the session, resulting in better developed needs assessment plans to take back to their home organizations. In finding #8, we saw how the concept of needs assessment was difficult for beginners to grasp. As Rubin describes, this problem was exacerbated by the timing of the workshop (emphasis added):

> The method is made a mystery...I know they want me to be successful in my project, and they want me to do it as easily as possible...so there ought to be a way to have the needs assessment almost cookbook...this is what you need to do and how you do it...*somewhere way up front we need a quick and dirty definition of needs assessment and a general outline of how one is done.*

Also, the workshop happened to occur at the emotional and mental nadir of the fellowship. Approximately half of the fellows were off task during the workshop. Several were unable to plan a needs assessment because they were in the midst of realizing they could not do their original project; others were "burned out" and unable to attend to the material at the time of the workshop. Obviously, learning any material is hindered by timing issues such as these.

Ready access to fellowship faculty facilitated participants' understanding and application of needs assessment concepts. This access was available to participants: 1) at the point of learning about needs assessment, 2) after a period for reflection, and 3) while they were in the midst of conducting their needs assessments. First, all fellowship faculty who were mentors to participants attended the workshop and were available to answer questions and discuss individual participants' concerns. Time was built into the workshop to

encourage these interactions. However, many of the participants still left the workshop with questions about needs assessment. To allow participants to discuss their needs assessment plans after they had had a period of time to reflect, all participants had a private meeting scheduled with their mentors the following day. One of the objectives of this meeting was to make sure the participant had a clear idea of how to conduct the needs assessment. Finally, fellowship faculty were available during the six-week period in which participants were at their home organizations conducting their needs assessments. Participants called with questions and faxed drafts of questionnaires to be reviewed by faculty. Most often, participants received feedback the same day it was solicited. Participants remarked that timely feedback was important in these interactions, as they were already encountering numerous other forms of delay in conducting their needs assessments (as described in finding # 9).

Many of the participants described **handouts** as facilitating the needs assessment. The handouts included: 1) a workshop package describing each of the steps of the needs assessment process and worksheets for participants to plan their own, 2) an example report written by a previous fellow, and 3) a description of the assignment and a list of the criteria by which the written report would be judged (see Appendix G). The great advantage was that participants could refer to these handouts at their leisure, and at any time in which they were ready for a particular piece of information.

Participants most frequently referred to the workshop package as being useful. Although the workshop package was discussed page-by-page during the workshop, participants remarked on its usefulness

later when they were working on their needs assessments at home. In particular, even though participants had begun completing worksheets from the package during the workshop, they found it useful to complete them later. Julie said "Just following that [the NA worksheets] - I was able to plan out all the stuff I was going to do." And May said, "It was a very helpful series of structured exercises." Even Rachel, who became known for not using available resources, made use of the workshop package: "[The other worksheets] wasn't stuff I could use...but this one [holding up the Needs Assessment Planning Worksheet] helped me define what I was looking for."

A smaller number of participants spontaneously described referring to the example and assignment criteria list to help them complete the assignment. Some said the example gave them a better idea of what they were "aiming for." Others were confused by portions of the example, as demonstrated by a few participants contacting their mentors to ask whether wording or information specific to the example report also needed to be incorporated into their own. Most of the participants reported reviewing the list of criteria prior to writing up their own report.

The timeliness and ways in which these handouts facilitated the needs assessments can be contrasted with participants' **difficulties in locating and interpreting the literature**. Almost every participant spontaneously described problems with the literature search. Although they had been taught in the fellowship how to search for literature electronically, more than half described trouble locating references. Rubin characterized the participants' quandary when he said: "I arrived at the conclusion, in working with Grateful Med [a

computerized literature search program], that either I wasn't doing it the right way, or there was not a lot out there." And also, the located materials were often not as helpful as they had appeared they would be from their titles and abstracts. In describing the literature search, Max said, "This probably has been the least helpful part. It seems that what I need is stuff that's not published. Anything, if it is published, is vague and general...." In contrast to the handouts, which quickly provided help when referred to, participants described spending large amounts of time with a small return when searching the literature. In addition, as described in finding #12, the literature search sometimes diverted energy from other needs assessment activity; spending time reviewing handouts or completing worksheets was never described this way.

In summary, four factors related to the fellowship impacted the needs assessments of the participants. The participants' needs assessments were hindered by the timing of the workshop, in which they were first exposed to needs assessment concepts, and by participants directing too much effort to the related literature review assignment. The participants' needs assessments were facilitated by having access to faculty to clear up questions as they were learning about and conducting their first needs assessments, and by being able to refer to handouts which included structured exercises.

The Home Organization

The home organization was the third area around which findings related to how needs assessment can be facilitated or hindered may be clustered. Information from interviews revealed that there were

similar constraints and challenges in many of the participants' home organizations. As described below, participants reported work piling up in their absence, being asked to take on additional duties, and discovering that some aspect of their needs assessment was not practicable. What was different was how each of the participants perceived and managed these challenges. The following two findings will describe how the needs assessments were facilitated or hindered--more by how the participant responded to a given situation than by the actual severity of the constraints in the home organization.

Finding #14: Assessors demonstrating a belief in internal control perceived fewer difficulties in conducting the needs assessment.[10]
Many of the constraints described were present in the home organization of almost every participant. However, over time, a pattern emerged in which some assessors described hindering circumstances in the home organization as being issues beyond their control. In these instances, participants were locating responsibility for failures outside of themselves (or demonstrating "external control"). In contrast, other participants described how their own actions brought about the desired event, in spite of similar organizational constraints. These participants were demonstrating "internal control." They described these same organizational constraints as factors they had to take into account when planning how to accomplish their needs assessments. Often, the participants

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[10] Over time, participants consistently displayed behaviors and made attributions that identified a perspective which has been labeled "internal control" or "external control." However, as an instrument measuring locus of control or attribution was not administered, participants could not be described as possessing an internal or external locus of control. Others wishing to pursue research in this area may want to consider using some measure of attribution with participants.

demonstrating internal control did not even mention these constraints; the investigator discovered them when conducting member checks.

External control. Eve and Sam most often displayed behaviors indicating external control. Each independently suggested that his or her own type of curriculum was more difficult to create than the types of curricula selected by the other participants. These two also had the lowest response rates on surveys. They distributed the surveys in ways which were heavily reliant upon others. For example, Sam sent five copies of his survey to two different department chairs and asked the chairs to distribute the surveys "to interested faculty." In contrast to other participants who were not getting surveys returned in a timely manner, neither Sam nor Eve followed up with respondents to urge them to complete the surveys. Eve spoke of having called a person for her needs assessment weeks earlier and not having heard from the person yet. She had no plans to place a follow-up phone call or write a letter. Both Sam and Eve spoke of feeling let down by how little interest others displayed in their curricula. Eve was surprised that people were not returning her surveys. Sam spoke often of having to work on the curriculum himself and not feeling supported by other faculty. When reporting on the needs assessment, he said, "We had these meetings. Nobody said to me 'Boy I really think you should teach this!'"

Joan and Alexis also displayed behaviors indicating external control. They both spoke of people in their organization "getting in the way of their performing." Joan described three different conflicts with individuals over the course of conducting her needs assessment.

Alexis coined a phrase that describes her negative expectations. She spoke of "hitting the wall of no" when she had contacted people for information during her needs assessment:

> "Who am I, little, small, insignificant me, calling these people, taking up their valuable time....and I sort of got that response from [name]...maybe she was busy, but her responses were very short and clipped. It confirmed the "wall of no" for me...."

Alexis said that, after making this call, she was loathe to contact others.

As described in finding #11, assessors demonstrating poorer time management skills experienced more difficulty in finding time to work on their needs assessments and in conducting the needs assessment in ways that maximized the use of time. However, assessors experiencing time management problems focused the blame on either the needs assessment task itself, or on constraints within the organization and, with only one exception, did not perceive their own time management skills as a hindering factor.[11]

Internal control. In contrast, other participants demonstrated internal control by adjusting their activities to bring about the result they desired. May and Julie were concerned about response rates on their surveys, and were more active in making sure they got them back. May handed the surveys out at a meeting and literally blocked the exit to ask people to return the survey before leaving the room. Max assumed that it would take time for an organization to find and

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[11] Sam, who had been a physician in private practice for over ten years before coming into academic medicine, was the only one to directly address his lack of time management skills: "One of my big troubles is organizing time, because I've never had to. I was always just seeing patients before."

mail him the information he wanted, so he called to request the materials his first day back on the job.

Balancing work and fellowship demands. As described in Chapter IV, the participants had demanding work lives. Even though they were supposed to receive between 10 and 20% release time to work on fellowship tasks, including the needs assessment, this rarely happened. They had work responsibilities to catch up on, were often returning to short staffed departments, and had to cope with unexpected crises.

Instead of having some work time available to begin their needs assessments when they returned from the fellowship two-week on-campus session, participants were confronted with paperwork, overbooked patient care schedules, and office hours and lectures owed colleagues who had covered for them in their absence. Many of the participants described playing "catch up" for the two weeks following the fellowship.

The difference lay in whether participants spontaneously described these situations to the investigator as reasons why the needs assessment was not being conducted or whether the investigator had to draw out these circumstances as something with which the participants were dealing. For example, when asked about the effort she had put into the needs assessment, Rachel immediately responded: "You've got to keep in mind that I have a full time job without the fellowship. When I get back, I owe them for covering my clinic for me...." In contrast, participants demonstrating internal control tended only to mention organizational constraints as part of an explanation of why they had chosen a particular action. Sue was

responsible for seeing patients and teaching in the hospital for two weeks following the fellowship session. Hospital duty is very demanding, and includes night calls. Sue mentioned this circumstance to the investigator only in the context of describing why she had elected to do a survey as part of her needs assessment. She said she knew she'd be very busy for two weeks, so she had distributed a survey that others could return for her to look at after the two weeks were over.

Participants displayed similar approaches to other constraints, such as dealing with extra work and handling unexpected crises. Three of the participants spoke of their departments being short staffed and, therefore, having to take on additional work responsibilities while they were also trying to conduct their needs assessments. There was a difference, however, in whether participants perceived these additional work responsibilities as precluding needs assessment activity or whether they were simply conditions to take into account when planning to accomplish the needs assessment.

Participants demonstrating external control spent more time telling the investigator about work crises and emphasized how these crises had kept them from spending time on their needs assessments. Alexis described how a student's complaint about an evaluation she had given had occupied more than a week's time at work. In contrast, participants displaying more internal control rarely mentioned crises to the investigator and, when they did, also talked about what they had done to compensate. For example, the investigator learned from

someone else that one of Emma's patients had died of SIDS.[12] When the investigator brought this up, Emma said, "That was a day when I had no commitments scheduled because I was supposed to be working on this [fellowship], but I wound up using the whole day going to the ER [emergency room] and taking care of that." She then spoke of how she had made up the time at a later date.

Coping with a superior's expectations. In several instances, participants were experiencing pressure from a direct superior to create a certain type of curriculum. Once again, how the participants handled the situation could be understood according to where they located responsibility for success and failure--internally or externally. Sam spoke often of the content and teaching methods of the curriculum being his superior's idea. He openly questioned the feasibility of some of his superior's ideas, but did not talk to his superior about his concerns or use the needs assessment to seek out alternatives. He described himself as "being stuck with" carrying out his superior's ideas. In contrast, Mike was undisturbed that his superior was not supportive of his curriculum:

> My boss isn't crazy about what I'm doing; he'd rather I was
> doing something else, but I'm doing it anyway.

And Sue, upon discovering that the curriculum her superior wished her to create was not feasible, changed her topic against her superior's expressed wishes.

This is not to suggest that participants demonstrating internal control experienced no problems or concerns whatsoever, but that

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[12] Sudden Infant Death Syndrome

they perceived the needs assessment as something that must be accomplished along with other responsibilities. Emma described this balancing act between work and fellowship responsibilities (emphasis added):

> I need a chunk of protected time to do this...**it's a major struggle to put aside patient care issues...or saying no to covering other people's clinics**...my protected time is decent, but it's not what is outlined in the fellowship, it's not that good.

And some organizational factors really were beyond the assessors' control, such as when Bill discovered the local library was closed indefinitely because the workers were on strike. But, as described in the next finding, there was a difference in how the participants reacted to each of these problems.

In summary, assessors demonstrating internal control found ways to overcome organizational barriers such as increased work demands, crises, and pressure from superiors. In contrast, assessors demonstrating external control gave these same constraints as reasons why the needs assessment was delayed or not done well.

Finding #15: Assessors who were flexible experienced fewer difficulties in conducting the needs assessment. Every participant described one or more unexpected concerns which arose after they returned to their home organization and began to implement the needs assessment plan they had developed. Assessors who adjusted their needs assessment plans to accommodate unexpected constraints in the local organization expressed fewer hindrances to their needs

assessments. For example, for the constraints listed in the previous finding, Emma negotiated to get a few of her protected days moved in order to make the most of her limited time available, and Bill had articles faxed to him from another site.

Assessors who took a flexible approach spoke of adjusting their plans to accomplish the spirit of the needs assessment. For example, when Max discovered how difficult it would be to reach graduates, he reduced the number he planned to contact. Rubin and Mike realized that superiors would not be willing to "sit still for" structured interviews or to complete surveys, so they questioned these people orally and later completed the form for them. Bill learned during the needs assessment that one member of his "multidisciplinary team" would not be available for some months and decided the curriculum could work without this one team member. May found a way to work around the restriction on discussing birth control in government-funded health care centers.

As shown in findings #9 and #11, time was a key area in which flexibility was required. In finding #9 we saw how participants were surprised by unexpected time demands and delays in the needs assessment. Participants effectively managing time (finding #11) also were demonstrating flexibility. Whereas Alexis fought with supervisors for more protected time, Emma made the best of the time available. Erin spoke of not having had a block of time to sit down and read all of his articles, and Rubin conducted his literature search in small blocks of time one night while he was on call in the hospital.

In summary, the assessors' abilities to adjust initial plans when faced with constraints in the organization greatly facilitated the needs

assessment. This finding on flexibility is closely related to the previous finding on perception of control. Those participants who demonstrated internal control also described more instances in which they had been flexible; those who felt the organization was preventing them from doing something often did not seem to realize that they could accomplish the same goal through a different avenue.

WHAT DO PARTICIPANTS LEARN ABOUT THE PROCESS AND PRODUCTS OF NEEDS ASSESSMENT?

What participants learned about needs assessment will be presented in the following five findings. This question is answered by looking at: 1) what participants learned about the **process** of needs assessment, including the circumstances under which they would voluntarily elect to conduct needs assessment again; and 2) the **products** of needs assessment, as expressed by changes to the participants' curricula as a result of having conducted the needs assessment. Individual participants' responses in these areas may be seen in Tables 12, 13 and 14.

Process

Finding #16: Needs assessment concepts were clearer after assessors experienced the process. In finding #8, we saw how the concept of needs assessment was initially vague for the participants. However, after going through the process, participants developed a clear personal understanding of needs assessment that included a definition, the uses of needs assessment, and the circumstances under which they would conduct one again.

Participants gave definitions of need assessment without hesitation. Their definitions usually described needs assessment as a "common sense" process for collecting pertinent information in order

to better understand a situation prior to making a decision. Emma's definition is representative of many of the participants':

> This whole thing is about needs assessment providing a bigger view. It is just a description of a logical process of figuring out what the problem is and getting information from sources.

As shown in the second column, Table 12, for eight participants this definition included a perception of needs assessment as an ongoing process, one that did not end with the assignment. For example, Sue said, "And in terms of this project, the deadline for the needs assessment was artificial. It's kind of an ongoing process. I will keep working on it as I progress on my project." (This phenomenon is also described in finding #1).

Also, participants arrived at an understanding of needs assessment, even in cases where they had not been rigorous in conducting their own. When defining needs assessment, three participants acknowledged that their own had not fulfilled this description. They said their needs assessments had been weak; that this had made later stages of the project more difficult. For example, Eve said:

> In general, needs assessment is a very important step to maximize effectiveness....reflecting back, I think I could have done more....It is important to do as thorough a needs assessment as you can....I learned your survey needs to be well planned with adequate sample size. And that takes a lot of time....So much of what I found out was after the needs assessment.

Table 12

Learning from the PROCESS of Needs Assessment

	Defined NA	Use a variety of sources		Plans for future use	
		For ideas	To gain support	For unfamiliar areas	Make simpler
Max	O	✔	✔	✔	✔
Joan	O	✔	✔	✔	✔
Mike	O			✔	✔
Julie		✔	✔	✔	
Rubin	O	✔	✔	✔	✔
May		✔	✔	✔	✔
Emma	O	✔			
Bill		✔	✔	✔	
Sue	O	✔	✔	✔	
Alexis	W				
Sam	W		✔	✔	
Eve	W	✔	✔	✔	
Rachel	O		✔	✔	
Erin	O	✔	✔	✔	

"✔" - Explicitly mentioned
"O" - Described NA as "ongoing process"
"W" - Acknowledged weak at NA

When asked, "Does anything stand out as something you learned from needs assessment?" participants had ready answers. Most often, these answers began with describing how important they now believed needs assessment to be. Joan said, "I learned how important this is before you do anything, anything." Mike said, "Whenever you design anything, its from your needs assessment. I can't see how you can't do some kind of needs assessment to decide things." Several acknowledged being skeptical about the usefulness of needs assessment when given the assignment, but buying in as they went through the process. Many said they realized they had been doing pieces of needs assessment, without calling it that, for some time.

However, this does not mean every participant developed a definition of needs assessment that was similar to that taught in the workshop. Most participants defined needs assessment as a process for better understanding the problem and designing a solution. A few participants developed more limited views after completing the process. Erin conceived of needs assessment as "talking to others" and made no reference to other data collection methods, or ways of analyzing the data. Alexis saw needs assessment as a tool to market ideas that had already been decided upon. Months later she said:

> Now I'm looking at throwing my whole needs assessment
> away, because I know its really important; but it depends
> on the spin of the readers [of the journal I wish to publish
> in]. My needs assessment should tell me what will sell to
> the journal and my Dean....

In summary, this finding showed that participants had a much clearer understanding of needs assessment after having gone through

the process. They readily defined needs assessment and perceived
the process as useful. As described in the following two findings,
participants also had ideas as to the uses of needs assessment and
could clearly state the conditions under which they would voluntarily
do a needs assessment again.

Finding #17: Participants perceived two key benefits from
conducting a needs assessment. Participants felt that needs
assessments were useful for 1) collecting ideas and 2) gaining support.
Both of these benefits resulted from contacting a variety of sources
during the needs assessment. Participants repeatedly cited these
themes as something they were discovering in the midst of
conducting their first needs assessments, as well as months later
when they looked back at the benefits of having performed a needs
assessment. The frequency with which participants cited each of
these benefits is displayed in the third and fourth columns of Table 12.

Collecting ideas. Ten of the fourteen participants described how
collecting information from a variety of sources had given them better
ideas for their projects. They spoke of having simply sat down alone
to plan a curriculum in the past; the idea of collecting information
from others was a novel concept they had latched on to in the needs
assessment workshop. Sue captured the perspective of many on the
benefits of contacting a variety of sources: "It's a good idea to include
their ideas. It makes you broaden your view of the world - other
people bring a different perspective to it."

Participants told stories in which they received conflicting
information from different sources. They spoke of learning things

they never would have known if they hadn't talked to these sources. Joan learned that the director's conception of how a curriculum was running in his department was very different from how it was described by the actual developers. And all participants who contacted graduates described how important it had been to get the perspective of former learners who were now practicing what they had been taught.

Participants felt that contacting sources was an efficient way to begin the project. They said that spending some time up front collecting input on the idea and identifying resources would speed the later stages of the curriculum development effort. In Max's words:

> In terms of contacting people, there's no point in trying to do this if its been done before. Just looking at the literature told me how much time it takes to do a curriculum. So it's to my benefit to see if I can adapt what they have done....

In contrast, Sam, who did not collect ideas from a variety of sources during his needs assessment, later described having to make many revisions in his curriculum:

> When I was hired for this job, they told me 'You're the expert, do whatever you want.' But as I go along, I'm finding I need their input--that's why my goals and objectives need work, why they're still being modified. As we go along, more input is coming in.

Gaining support. As shown in the fourth column, Table 12, eleven of the participants learned that needs assessment was a way to

gain support for a new idea or change.[13] These participants reported being surprised by how much enthusiasm there was for their project from the people they interviewed or to whom they distributed surveys. The following two comments are illustrative of the participants' discovery of how involving other people in the needs assessment leads to a better product and also makes acceptance more likely:

> Erin: I would have never thought this before - writing a curriculum involves so many different people, they are the curriculum, they are the ones who make it work or make it fail. You could just go ahead and write a curriculum, your own by yourself, but it will be a useless curriculum.

> Sue: One thing I realized, when we're developing things, we don't do it. We never find out whether other people think this is a good idea or not...it was a useful process to do....[If you don't do a needs assessment] you're making assumptions about what is important. If there's no contact with the organization, if you're the only one, you're wasting your time. Because people will not receive it well.

Months after the needs assessment was completed, these eleven participants described how people they contacted during their needs assessment were helping ensure that the new curriculum would be successfully implemented. As Rubin put it, "Needs assessment also has that coalition-building component built into it. That's a subtle use of it, as a tool to enlist other people."

In summary, participants learned that contacting a variety of sources during the needs assessment had two benefits. First, they perceived the ideas they collected from these sources as making their curricula better. Second, they discovered that by asking people for

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[13] The investigator believes Mike also recognized needs assessment's usefulness in promoting change. Although his comments and activities alluded to this assumption, he is not included in this tabulation because he never directly wrote or spoke about needs assessment as facilitating change.

ideas, they gained support, making their curricula <u>more likely to</u> <u>succeed</u>. In addition, it appears that collecting ideas from a variety of sources early simplifies the later stages of development and implementation.

<u>Finding #18: Participants clearly defined conditions under which</u> <u>they would perform needs assessments in the future</u>. All participants indicated that now that they knew how to do needs assessments and what the benefits were, they would do them in the future. As illustrated in finding #17, they spoke of planning to do a needs assessment when they wanted to gather other peoples' ideas, and especially when they wanted to gain support. In addition, they emphasized the usefulness of conducting a needs assessment prior to beginning a project in an unfamiliar area, and identified ways they would simplify the process. An excerpt from a conversation with May illustrates these four issues:

> Investigator: Would you do a needs assessment again?
>
> May: Oh yeah. Before I started any new project. For
> example, right now I'm thinking of starting a women in
> medicine group. And I'll do a mini-needs assessment.
> If I'm going to put all that time and energy into setting
> it up, and then it turns out people don't want it, it is a
> waste of my time. Before I start any new major thing
> that requires my effort, I would do a needs assessment.
> Or for things I'm really wrapped up in. You know how it
> is. You tend to think you know how it should be
> organized. And that might not be true, you're too
> close....
>
> I: You said you'd do a mini-needs assessment. What parts
> would you keep or not use?

> May: Like for this group [women in medicine], I'm thinking of doing a real short questionnaire. Something people can do quickly. Not a long one like I had for this [fellowship project], but just one with say four or five questions on it. And it would be going to the first year class of medical students so I could see if there was any interest in my starting this group. I would send it out for myself. I wouldn't write up a formal report like we had to do for our projects, this is just for my information.

For ideas and to gain support. As described in finding #17, participants perceived two major benefits of doing a needs assessment: to collect information to improve their ideas and to gain support. These reasons were again cited when participants talked about why they would do needs assessments in the future. However, there was a shift in emphasis. Although participants had said that needs assessment had helped them collect good ideas, they more often mentioned (and emphasized) doing a needs assessment to gain support. Participants used phrases like "getting people to buy in" when they talked about why they would do a needs assessment again. Julie acknowledged she would consider doing a needs assessment for the sole purpose of gaining support: "I would do a mini-version before a major project of any kind, if only for the reason of getting people's support."

For unfamiliar areas. All of the participants said that they had learned that needs assessment was an important activity. Like Erin, many also said it would be useful in a variety of situations beyond curriculum development: "Oh yeah [I'd do a needs assessment again]. Any time we need to plan a new project - not only for a curriculum, for other things too." However, most participants qualified a future needs

assessment to a particular condition. As indicated in the fifth column, Table 12, twelve of the fourteen participants said they would do needs assessments when beginning projects in areas that were new to them.

Participants said that needs assessment was not that useful in areas in which they already had a lot of experience and knowledge, but it would be useful as a way to begin in unfamiliar areas. The following statements illustrate this attitude:

> Eve: My project was something that I'm not an expert in. I wouldn't feel I'd need a needs assessment for something in clinical medicine, that's my bread and butter; I know it like the back of my hand. But for this topic, the needs assessment provided a ground.

> Max: But I would definitely do one if I didn't even know where to start, if it was something I didn't know anything about or was completely new to me. But as it was with the clerkship, I had been doing it a while, so I had kind of done most of those [needs assessment] things informally, and we had talked about it as a group.

> Mike: When you're dealing with something where you have no idea of what's important or what's not, a needs assessment is very useful. But I know my stuff in OB [Obstetrics].

Make simpler in future. Finally, five of the participants said that they would conduct much simpler needs assessments in the future. They spoke of not needing to use as many methods or needing to collect data from as many sources. They had preferred talking to people over conducting surveys and would not write up a formal report in the future. Three used the term "mini-needs assessment" when describing how they would conduct a needs assessment.

It is interesting that these comments came from five of the six assessors that had conducted the most comprehensive needs

assessments. They tied this desire to simplify the process with the fact that they already knew something about the area in which they were conducting a needs assessment. As they already had a good sense of the problem and a solution in mind, they would not expend time and energy in this area. Instead, they would use needs assessment to determine the next steps in accomplishing their preferred solution. Rubin's statement captures this spirit:

> ...I would rarely do it as formally as we had to do for [the fellowship]. I would always start with my best guess and decide how much time I have and the quickest way to get the information I need. That is, how much information I need to move forward.

In summary, participants said they would conduct needs assessments in the future. However, they defined conditions which limited the circumstances under which they would choose to do a needs assessment. They said they would do needs assessments in situations in which they needed to establish or assess support for an idea, and in areas that were new to them. Participants felt that needs assessments were less useful in areas in which they already had expertise. They further indicated that in the future they would not expend as much time and energy on defining the problem and identifying a solution. Instead, they would use the needs assessment to determine how to implement their "best guess."

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<u>Product</u>

Finding #19: There were few changes to the curricula as a result of the needs assessment. In Table 13, we can see the changes made to the participants' curricula as a result of conducting the needs assessment. This table was constructed by examining documents for the presence of changes between before and after the needs assessment was conducted. A draft form of this table was then shared with participants in member checks. Each of three types of potential changes will be discussed in turn: changes to the curricular topic, changes in content, and changes in the instructional format.

Topics did not change. In the second column, Table 13, it is apparent that eleven of the fourteen participants did not change their curricular topics as a result of the needs assessment. This was confirmed by an examination of documents written by the participants both before and after the needs assessment. In two instances, participants used the needs assessment to collect input to narrow the topic. As described earlier, both Julie and Eve distributed surveys that asked respondents to rate the importance of several areas. They then weighed these responses when selecting the specific area on which to focus in their curricula.[14]

In only one instance did a participant report finding information in the needs assessment that caused him to change his topic. Erin had intended to develop an evaluation system for his entire program. He reported discovering during the needs assessment that there was a

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[14] However, in finding #11 we saw how Julie designed the survey in a way that allowed her to pick the topic she had originally preferred. It also described how Eve based her needs assessment conclusions on a very low response rate.

Table 13

Effect of Needs Assessment on PRODUCT

	Did Topic Change?	Select and/or Refine Content	Select and/or Refine Instruction
Max	No	✔	✔
Joan	No	✔	✔
Mike	No	✔	✔
Julie	Narrowed	✔	✔
Rubin	No	✔	
May	No	✔	✔
Emma	No		✔
Bill	No		✔
Sue	No	✔	✔
Alexis	No	✔	
Sam	No		
Eve	Narrowed		
Rachel	No	✔	
Erin	Yes	✔	

KEY:

✔	=	Evidence of change
No	=	Evidence of no change in topic
Narrowed	=	Participant belief that topic was narrowed corroborated by documentation

much more pressing need for a particular curriculum. However, it was relatively easy for Erin to switch topics as 1) he was one of the participants who was least invested in a project idea prior to beginning the fellowship and 2) he was one of three participants who began the fellowship planning to construct an evaluation system that discovered this was not feasible. He described the needs assessment as impressing the magnitude of the problem upon him, rather than helping him discover the problem: "I knew we didn't have a curriculum. But it didn't seem important until I talked to people."

Content underwent minor modifications. In the third column, Table 13, we can see that ten of the fourteen participants used the needs assessment to help them select content for the intended curriculum. Joan talked about the needs assessment "molding" her content and, along similar lines, Mike said that during the needs assessment he had discovered a "new philosophy" that guided content selection. May's comment illustrates how the needs assessment usually led to relatively minor changes in content [emphasis added]:

> I definitely had some clear ideas about what I thought
> should be included. But when I talked to people, a couple
> of residents or the graduates clearly said 'no' or
> emphasized other things. They definitely emphasized
> some other things. And that made me feel good. It was
> like I was truly being open minded, that I could
> incorporate what they were telling me. **But there weren't
> many major shifts. It was more like small but significant
> stuff.**

Participants also considered articles discovered in their review of the literature which they incorporated into the students' reading list to qualify as changes in content.

Instructional formats rarely changed. Eight of the fourteen participants used the needs assessment to help them select or refine ideas on how to teach and/or evaluate the curriculum (Table 13). As had happened with content, in most of these instances the needs assessment led to minor modifications rather than new ideas.

Often participants had entered the fellowship with an idea of how the curriculum was to be taught. In their earliest interactions with the investigator, participants were talking about how they wanted to teach their curricula. Examples include Julie and Alexis both talking about pre- and post-tests, and Joan planning to deliver her curriculum in a conference series. Participants' comments about changes to instruction due to the needs assessment was mostly things like making "minor modifications," or that the needs assessment had "confirmed what I thought would be helpful."

In one instance, a participant perceived the needs assessment as resulting in large changes to the instructional format. Emma said, "I had hardly thought about this before," and described how much she had learned about putting together the materials into an organized curriculum. However, the investigator's field notes indicate that prior to conducting the needs assessment, Emma had talked about wanting to design a "modular curriculum" with units that learners could do on their own. This is the structure upon which her instruction was later based.

Participants had not realized that their projects had changed little. Participants were presented with a draft version of Table 13 in individual interviews. Participants had been responding to questions and other tables without hesitation. But when they saw Table 13,

almost every single participant hesitated for several seconds. This hesitation, combined with comments like "that's depressing," led the investigator to believe that participants had not realized how little their projects had changed. A few contested the markings, making arguments for how the needs assessment had helped them narrow the topic, or declaring that they had had no idea of what content to include prior to doing the literature search. In instances where none of the data contradicted the participant's assertion, the table was modified. However, after a few moments reflection, most of the participants conceded that they had made few <u>changes</u> to their projects as a result of the needs assessment. They spoke instead of <u>refinements</u> coming out of the needs assessment.

In summary, the product, as defined by the major project, underwent only minor changes as a result of the needs assessment. In all but one case, the topic of the curriculum did not change. And although changes were made in content and, to a lesser degree to instructional format, in the majority of cases these were minor refinements rather than new ideas. In addition, it appears that participants had not realized how few changes they had actually made to their products as a result of the needs assessment. The next, and final, finding presents an explanation of why so few changes were made.

<u>Finding #20: Assessors had decided upon the problem and solution before beginning the needs assessment</u>. By the time they began the fellowship, most of the participants had decided upon the type of curriculum they wanted to create. They had chosen an area

(such as teaching procedures or ambulatory pediatrics), had decided what the final curriculum would look like (perhaps a block rotation or a conference series), and had some ideas about what content to include and how to teach the curriculum. It appears that participants had arrived at this solution, at least in part, by a process that might be considered an "informal needs assessment."

The solution had been determined prior to the needs assessment. This is substantiated by Table 14 in which the participants' intended projects over time are presented. The statements listed in the table were written by participants before and after the needs assessment. A close examination of this table reveals that 1) there was only one instance of a topic changing between before and after the needs assessment and 2) the majority of participants had selected a topical area, from which they did not deviate, months before they entered the fellowship and began the needs assessment. May said:

> I'll be honest with you, [the needs assessment report is]
> just a document. I already had a good idea of what I
> needed. There are only a few areas where I have found
> things that were not expected.

Evidence suggests early fellowship assignments documented the naturally occurring thought processes of participants, rather than actually forcing participants to come up with solutions prior to conducting a formal needs assessment. Participants listed potential project topics in their applications in the spring, filled out a worksheet, met with fellowship faculty to begin talking about their projects during the summer, and handed in a draft of what they

Table 14

Changes to Project Topic Over Time

TIME	Application for Fellowship Spring 1992		Prior to Fellowship Summer 1992	After Needs Assessment November 1992
	Decided on curriculum project yet?	Major project idea specific yet? (Application Q4#)	Overall Goal (Project Worksheet Q#2)	Overall Goal (Project Contract Q#1)
Max	Yes	Yes, Clerkship in Ambulatory Pediatrics	"Develop and implement a 2 week ambulatory general pediatric rotation for 3rd year medical students as part of their 8 week pediatric clerkship)"	"To develop and implement a curriculum for a two week general pediatric ambulatory clerkship for 3rd year medical students from [Name]."
Joan	Yes	Yes	(From Application: "A curriculum project encompassing a biopsychosocial approach to pediatrics education in the Family Practice Residency Program...")	"Residents graduating from the [Name] Family Medicine Residency Program will practice a Family Medicine Mode of Ambulatory Pediatrics."
Mike	Yes	Yes, Evaluation of Residency Curriculum	***Narrowed Topic*** "Develop specifics for new Ob/Peds rotation. Develop improved evaluation process for procedural skills. Improve rotational experience for residents."	"Develop overall obstetric experience for FP residents. Define specifics of content, instruction, and evaluation. Utilize FP role modes as much as possible."
Julie	Yes	Yes, Family Practice Outpatient Rotation	"To complete a curriculum development project that would provide a means of standardizing and improving the instruction our resident physicians receive when completing their Family Practice Outpatient (FPO) rotations in our residency program. The efficacy of the curriculum would be determined by having the residents complete a pre- and post-rotation survey and exam. The curriculum will be universally applicable to any family practice procedure training."	"The overall goal of this project is to complete a curriculum for the procedural training portion of the Family Practice Outpatient (FPO) rotation with the [Name] Family Practice Residency Program. The curriculum will standardize and improve the training in procedures that the residents receive and will provide a method of evaluation that will prove useful in assessing the residents' competency in procedural skills."
Ruben	Yes (sort of)	Yes, Further develop and implement curriculum in Outpatient Family Practice through a research or grant project	"Develop our introduction to Family Medicine block rotation so that it better reflects the knowledge and skills needed for office family practice. Specifically develop a small group interactive teaching module ("MegaClinic") which demonstrates a typical office day for a family physician. This module would incorporate clinical care, practice management and administrative aspects of patient care and attempt to demonstrate the dynamic process that occurs in seeing a group of patients in an office setting."	"New first year family practice residents will understand and practice an integrative routine for: - Care of Individual Patients - Working in the Office Setting"
May	--------	Yes, Women's Health Care Rotation	"To develop a curriculum in Women's Health aimed at Internal Medicine residents."	"To create and evaluate a curriculum in Women's Health"
Emma	--------	--------	"Refine curriculum for residents rotating through the newborn nursery rotation."	"The overall goal of this project is to create a curriculum for the pediatric residents at [name] to use during their one month normal newborn nursery rotation."
Bill	Yes	No	"To implement a Geriatrics Evaluation Unit as part of the Family Medicine Residency curriculum in a community hospital."	[withdrew from fellowship due to job change] "...but Nov. statement of problem, goals & objectives indicated no changes from Summer 1992"

Table 14 (cont'd)

TIME	Application for Fellowship Spring 1992 (Application Q#4)		Prior to Fellowship Summer 1992 Overall Goal (Project Contract Q#2)	After Needs Assessment November 1992 Overall Goal (Project Contract Q#1)
	Decided on curriculum project yet?	Major project idea specific yet?		
Sue	Yes	Yes Community Health Rotation	***CHANGED*** "To develop a system for evaluating residents when they are learning procedures. To ensure that residents learn procedures needed to be FP and that program has a record of what procedures they can do."	***RETURN to original idea*** "To develop a curriculum for the instruction of community health to the residents in our family practice program."
Alexis	No	3 Research Ideas: 1) Questionnaire on student attitudes toward diversity 2) Cholesterol study (data partially collected) 3) Hematology study	"To create a workshop on sensitivity training/cultural diversity for students that will enable participants to develop better coping strategies with respect to their behavior or attitudes and which contains objectives and measurable components to assess effectiveness." "To write a grant proposal to develop this workshop or develop the objective measures."	"To teach students strategies to use when they interact with culturally diverse people (inclusive of patients)."
Sam	Yes	Yes Medical School Curriculum in Substance Abuse	"The goal of the project is to develop a component of an integrated four year substance use disorders curriculum at [name]."	"[Name] is in the progress of developing a longitudinal integrated four-year curriculum in Substance Use Disorders. The goal of this project is to develop the M-1 component for this curriculum"
Eve	No	No 3 Ideas: **Grant:** health care for low income teens **Curriculum development:** violence education seminar **Research** - questionnaire on cultural group's perception on doctor-patient relationship	***Decision for CD*** [Filled out during site visit after discussion with fellowship faculty, had a number of ideas at that time] ***Decision on Project Topic by 9/M92 [Major Project Draft]*** "Teach medical students about underserved population - Hopefully improve communication skills with underserved, stimulate interest in primary care."	"The project's goal is to show students the importance of acknowledging when a patient's culture and health beliefs may impact on the doctor-patient relationship, the medical care the patient receives, and the patient's illness."
Rachel	------	------	Two possibilities listed. However, option "a" was crossed out on the worksheet: "a) Develop/coordinate a Sports Med rotation possible evolution to develop a fellowship." "b) Develop an evaluation system for our new competency-based curriculum."	"To develop a more objective and consistent evaluation model for the Family Medicine rotation, which can hopefully be then applied to other rotations."
Erin	No	No specifics	[Had several ideas for research and evaluation at site visit - this was based in late] "To develop a reliable and valid tool for evaluating residents of Family Practice."	***CHANGED*** Now developing pediatric curriculum in growth and development: "The overall goal for the Family Practice Outpatient Experience will be a... graduates who will be skilled in the practice of outpatient family medicine."

thought they would do for their project the first day of fellowship. Each of these written documents provided evidence of choices made early and persisting through the needs assessment later conducted in the fall.

Fellowship faculty identified a number of instances in which participants had made firm decisions about their curricula the summer before starting the fellowship. One faculty member described May as having "locked onto" her topic in April or May (four to five months before beginning the fellowship). Rubin was described by a faculty member as using the needs assessment to gain support for what he already wanted to do:

> I did the site visit and from day one he has had a form of summative evaluation in mind...he wants to run simulated patients through the clinic....has he been working backwards from his evaluation?...watch out for that.

The two participants that the investigator visited a month before the beginning of the fellowship had already selected a curricular topic and described detailed methods for teaching the curriculum.

Needs assessments substantiate the preexisting idea or solution. In reviewing written documents and interviews generated by the participants over an eight-month period beginning with application to the fellowship program through reporting on needs assessment results, many of the participants repeatedly cited a favored theme. In some cases, the participant had a preferred technique in mind: Max spoke of teaching students the twenty most common problems encountered in pediatric office visits, Alexis wanted to pre- and

post-test her students, Bill wanted to use an interdisciplinary approach to teaching geriatrics, and so forth.

Several of the participants displayed a conceptual orientation which was represented by key words that constantly appeared in their writing and conversations. Often these concepts dealt with better organizing an already existing curriculum. Julie often wrote and spoke of needing to "standardize" the curriculum, Mike wanted to make the existing curriculum more "objective," Emma described the learning in the current curriculum as "arbitrary."

In each instance where participants had a particular technique or concept in mind prior to performing the formal needs assessment, the needs assessment report also called for the use of the technique or established the desirability of the concept. This is substantiated by comments made by the participants. For example, Bill said:

> When I got into the fellowship, I already had several ideas.
> And it was shared by many people. I did the needs
> assessment because I already had the idea -- but I found
> out it was shared in the needs assessment.

As described in Chapter IV, all but one of the participants (Erin) wrote and/or spoke of the curriculum addressing a personal interest area. In the final member checks, these same thirteen participants said that their needs assessment had confirmed the belief they had held prior to conducting the needs assessment.

People naturally conduct informal needs assessments. As illustrated in Chapter II needs assessment has much in common with everyday decision making activity. In finding #1, needs assessment is described as an activity that does not have a clear cut beginning and

end. It was illustrated that at least ten of the participants conducted some form of needs assessment prior to beginning the fellowship. Participants described talking to peers and collecting related articles as part of thinking about what type of project would be most useful to their organization. The investigator feels that participants were acting with "common sense" in conducting what amounts to an informal needs assessment prior to beginning the fellowship. As Mike describes, he had been performing needs assessment-like activities for some time. When asked how much time he spent on the needs assessment assignment, he responded [emphasis added]:

> It went quick. My perspective on my job is to trouble
> shoot -- to look at the future. **It almost was all done
> already in my head. I'm always doing it**. For my job, I
> meet almost once a week with someone to go over
> something about the curriculum. For example, before I
> came here, I distributed a portion of my curriculum
> document to [the division directors] asking them to review
> the content. When I get back, they will have returned it to
> me with written feedback and I'll talk to some of them
> about it.

In summary, as further substantiated by finding #19, the needs assessment did not _find_ a solution. Rather, participants had done what could be considered an "informal needs assessment" to decide upon which problem to work and its solution prior to entering the fellowship. The needs assessment did not result in changes to participants' decisions. Rather, the needs assessment confirmed and refined these decisions.

SUMMARY

In this chapter the investigator presented twenty findings that emerged from analyzing data collected through observing, interviewing, and examining documents of fourteen participants as they became familiar with, implemented, and learned from performing a needs assessment. The findings are summarized here under each of the three research questions. The following twenty findings, developed through the method of constant comparison and illustrated with quotes and descriptions, summarize the needs assessments of these individuals.

Summary of research question #1: What do the participants do in conducting a needs assessment?

How the fourteen participants conducted their needs assessments was described and explained by examining the methods they used and the sources they consulted.

> Finding #1: Needs assessment did not have a clear beginning and ending.
> Finding #2: Taking a block of time to plan was the most effective way to begin the needs assessment.
> Finding #3: Assessors used informal and less structured activities more often than formal structured activities when conducting needs assessments.
> Finding #4: Assessors did not involve representatives of every stakeholder group in the needs assessment.
> Finding #5: Data collection was focused on sources most like the assessors themselves.
> Finding #6: Data collection was focused on sources within the assessor's immediate context.
> Finding #7: The purpose of the contact, and the data collection approach used, was dependent upon the type of source being contacted.

Summary of research question #2: What factors facilitate and/or hinder the needs assessment process?

The factors that facilitate and hinder the needs assessment process were illustrated by describing and explaining phenomena that occurred on the level of 1) the individual needs assessor, 2) the fellowship program, and 3) the home organizations of the participants.

The Individual Needs Assessor

Finding #8:   Needs assessments were hindered by the vagueness of the concept for beginners.

Finding #9:   Needs assessments were hindered by unexpected time demands and delays.

Finding #10:   Needs assessments were facilitated by assessors possessing moderately high expectations.

Finding #11:   Needs assessments were facilitated by the presence of key skills in the assessor.

Finding #12:   Needs assessments were hindered by a too wide or too narrow focus.

The Fellowship Program

Finding #13:   Needs assessments were facilitated by timely access to helpful materials and human resources.

The Home Organization

Finding #14:   Assessors demonstrating a belief in internal control perceived fewer difficulties in conducting the needs assessment.

Finding #15:   Assessors who were flexible experienced fewer difficulties in conducting the needs assessment.

Summary of research question #3: What do participants learn about the process and products of needs assessment?

What participants learned about needs assessment was answered by looking at : 1) what participants learned about the **process** of needs assessment and 2) the **products** of needs assessment, as expressed by changes to the participants' curricula as a result of having conducted the needs assessment.

Finding #16:   Needs assessment concepts were clearer after assessors experienced the process.

Finding #17:   Participants perceived two key benefits from conducting a needs assessment.

Finding #18:   Participants clearly defined conditions under which they would perform needs assessments in the future.

Finding #19:   There were few changes to the curricula as a result of the needs assessment.

Finding #20:   Assessors had decided upon the problem and solution before beginning the needs assessment.

The final chapter presents a conceptual framework for interpreting these findings, the major conclusions of the study, and implications.

CHAPTER VI

CONCLUSIONS AND DISCUSSION

INTRODUCTION

The purpose of this study was to describe and explain how individuals, given similar training, implement and learn from a needs assessment. The three research questions were answered through the presentation of twenty findings in the previous chapter. Although needs assessment is described as an important early component of any systematic problem solving process, very little research has been conducted on needs assessment to substantiate its effectiveness or validate a particular model (Chapter II, "Review of the Literature"). Therefore, the present study was designed to describe how needs assessments are conducted by people newly exposed to needs assessment concepts and explain the resultant outcomes.

The context was a 10-month-long fellowship in medical education, in which primary care physicians from across the US and Puerto Rico were to develop their skills in teaching, research, curriculum development, and administration. The subjects of this study were fourteen physicians conducting needs assessments in preparation for creating a medical curriculum. Fellowship faculty presented a workshop on needs assessment concepts and techniques. Participants then had six weeks to conduct a needs assessment in their work environment and

develop written and oral reports on the needs assessment process and results.

This was a qualitative study in which data were collected through observations, interviews, and by examining documents generated by the participants before, during, and after they received training for and conducted their first needs assessments. An inductive approach was used for analyzing the data and the results were reported in case study format.

Four areas are addressed in this final chapter: 1) the conceptual framework used to interpret the findings; 2) the limitations of the study; 3) the major conclusions, supported by arguments derived from relating the findings to the conceptual framework; and 4) the implications of this study for a) assessors and those training them, b) the specific context of the present study, c) the use of this methodology and conceptual framework in Performance Technology, and d) further research.

A CONCEPTUAL FRAMEWORK FOR UNDERSTANDING NEEDS ASSESSMENT: THEORY INTO PRACTICE

> *Learning a theory of action so as to become competent in professional practice does not consist of learning to recite the theory; the theory of action has not been learned in the most important sense unless it can be put into practice.*
> *(Argyris & Schön, 1974, p.12)*

About Theory

A conceptual framework is useful for organizing a study's findings into a comprehensible structure. The conceptual framework works in tandem with the research questions to describe and explain the phenomenon of interest. In the present study, the conceptual framework was taken from the work of Argyris & Schön's Theory into Practice (1974), and Organizational Learning (1978). (See Appendix A for an explanation of how the conceptual framework was selected.)

It is important to have a common definition of the term "theory" before proceeding. According to Kerlinger (1973):

> A theory is a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena.
> (p. 9)

Therefore, the purpose of theory is to explain or predict--sometimes with the intent of controlling the phenomenon of interest.

This study has dealt with the concept of "theory" in three ways. First, the review of the literature on needs assessment has shown that there are many conflicting theories of needs assessment, as represented

by models and disagreements over terminology, that remain unproven because they have not been researched. As such, it is not known to what degree they are effective at actually explaining the needs assessment process, or predicting a positive outcome. Second, the conceptual framework focuses on the difference between espoused theories and theories-in-use. This study has looked at the data in an attempt to understand these two different kinds of theories as they apply to needs assessment. Third, the purpose of this study essentially was to generate a theory which described how needs assessments are practiced. Glaser & Strauss (1967) describe qualitative research as "theory-building," as its aim is to describe and explain the phenomenon of interest in the study. Therefore, the present aim was to study a small number of needs assessments to begin to build a theory that described and explained how a certain type of needs assessment was actually conducted. In the interest of promoting more effective and competent practice of needs assessment in the future, the study also aimed to describe and explain what facilitated and hindered these needs assessments and what were the outcomes of having performed a needs assessment.

The Conceptual Framework

In _Theory into Practice_ (1974), Argyris and Schön address the practice and education of professionals. They have studied the interpersonal interactions of professionals such as physicians, social workers, and city planners to develop a theory of how people can become more competent and effective. They have applied and honed the theory in learning seminars and one-on-one consultations. Argyris and Schön (1974) describe a conceptual framework in which humans behave

according to theories of action, which are divided into espoused theories and theories-in-use. They further describe a process by which these theories are maintained or modified through single-loop and double-loop learning and present two models for human interactions. Argyris and Schön's later work, Organizational Learning (1978) applies the same conceptual framework to describe how organizations learn and maintain effectiveness. Each of the key components of the conceptual framework is described below.

Theory of action. Argyris and Schön describe how people are continually confronted with novel situations in which they are required to respond in novel ways. Human cognitive processing limits peoples' abilities to consider all the available options and consequences in each new situation so, instead, humans develop rules about human behavior, a sense of cause and effect, that simplify decision making. These "theories of action" are defined by Argyris (1991) as "a set of rules that individuals use to design and implement their own behavior as well as to understand the behavior of others" (p. 103). Argyris and Schön (1978) point out that these theories of action are useful for control as well as prediction of human behavior. A person essentially uses a theory of action to make decisions that control his/her behavior, and others can use that theory of action to predict or explain that person's behavior.

Espoused theory and theory-in-use. Argyris and Schön (1974) distinguish between two types of theory of action: espoused theory and theory-in-use. An espoused theory is the set of rules that people will state if you ask them about their rules for conduct. A theory-in-use is how people actually behave, which may be discovered only through observing people's behavior. This is because people often are not

conscious of their theory-in-use. It is important to note that these two theories of action are not necessarily in agreement with each other.

Argyris and Schön draw an analogy to grammar and speech as an example of the two theories of action and how they may relate. The rules of grammar are similar to an espoused theory of action, as they are an explicit set of rules that purport to explain a language and predict how it will be spoken and written. On the other hand, everyday speech is similar to a theory-in-use as the rules governing speech are often implicit, even to the point that the speaker cannot tell you the rules s/he regularly uses. As in the example of grammar and speech, in which the rules of grammar do not account for all the nuances of speech, and speakers may violate the rules of grammar when speaking, people may not be aware of the conflict between their espoused theory and theory-in-use.

Governing variables. Theories-in-use include what Argyris and Schön call "governing variables" (the person's goals), and also contain the action strategies that the person employs to keep the governing variables in balance. Examples of governing variables are "energy expended, anxiety, and time spent with others" (1974, p. 15). According to Argyris and Schön, each individual is interested in particular governing variables and applies a theory-in-use to maintain these variables within an acceptable range. As an example, a person may have a governing variable such as "spending time with family" and wish to maintain that variable in the "high" range that includes dinner at home every evening and weekends together. The person will then have a theory-in-use that contains action strategies for maintaining that governing variable within the desired range. The resulting work-related behaviors may include

skipping lunch hours to get work done by quitting time, bringing work home to do after the family is in bed, or avoiding demanding jobs.

In this way, a theory-in-use maintains a person's view of the world. It not only guides a person's behavior (acting in ways that allow for more time with family), it also provides a system for understanding the behaviors of others (thinking a boss that asks you to work late on your daughter's birthday is unfair).

Because each person has many governing variables, at times the variables will conflict. For instance, if the person with the governing variable of "spending time with family" also has a "fast-paced career" governing variable, prevailing wisdom says that one governing variable can only be maintained at the expense of the other. Thus, a person is constantly trying to keep many governing variables within a range that feels acceptable.

Theories-in-use create "behavioral worlds." Argyris and Schön assert that theories-in-use often act as self-fulfilling prophesies because behaving according to a theory-in-use often brings about the intended consequence. They call this process "self-sealing." Because people behave, as well as interpret, the behaviors of others according to their theory-in-use, this essentially shapes the world in which they live. As an example, a person with a theory-in-use that includes the governing variable "others cannot be trusted" will behave in ways that others interpret as distrustful. That person will give others few opportunities to act on trust, and will interpret others' actions with the intent of proving that they should not be trusted. People react to feeling distrusted. In this way, a "behavioral world" in which others are not trusted is created.

A theory-in-use affects ability to learn and change. Argyris and Schön contend that, for several reasons, it is important to be able to explicitly state theories-in-use. First, what people believe they are doing (espoused theory) does not always correspond with their actual behavior (theory-in-use). People must first become aware of their theories-in-use before they can see the difference between their stated beliefs and actual behaviors. This leads to the second reason. Theories-in-use are closely linked to the "behavioral world" of people. If people are unhappy with their behavioral world, they need to understand how it has been created through their theory-in-use before they can begin to change it. Finally, in cases in which governing variables are in conflict, two or more action strategies for achieving these governing variables are often working against each other. These action strategies, which are an integral part of the theory-in-use, have to be known before they can be modified. In other words, all three reasons are examples of how a theory-in-use has to become conscious before a person or organization can take steps to learn and change behavior.

Single-loop and double-loop learning. According to Argyris and Schön, a key point is how the individual or organization reacts when governing variables go out of the acceptable range. They assert "learning involves the detection and correction of error" (1978, p.2) and describe two types of learning which may occur. In single-loop learning, an error is detected and corrected to permit the same governing variables to return to their original ranges. In double-loop learning, the correction of errors involves the modification of the governing variables and/or their ranges.

Argyris and Schön use the analogy of a household thermostat to highlight the difference between single and double-loop learning. Most often, a thermostat detects when the temperature has exceeded the pre-specified range and takes action to bring the temperature back into that range. This is what happens in single-loop learning where a person or organization takes action to "get things back to normal" without altering established norms. An example of single-loop learning is an organization adjusting marketing strategy to keep product sales volume high. However, it is also possible to question the prespecified temperature and adjust the thermostat. This is what happens in double-loop learning in which the status quo is questioned. Continuing the organizational example, in double-loop learning, the organization may determine that sales are slumping because of changing market trends and decide to invest in new products rather than continue to push the old one.

Both types of learning are necessary. Single-loop learning is useful for day-to-day adjustments; double-loop learning is used in more fundamental changes and is essential for maintaining long-term effectiveness. For example, imagine that the above mentioned organization had persisted in working to maintain a high sales volume of its product, eight track tapes (single-loop learning), rather than rethinking the product itself (double-loop learning).

For both individuals and organizations, their effectiveness and, perhaps, even their survival is threatened when they fail to learn and change. Even in cases where the system is running quite well, outside forces create the need for some change, just as when the weather gets particularly cold, the thermostat must be turned up. Without double-loop learning, it is not possible to change governing variables and

theories of action in significant ways. Instead, the individual or organization persists in current patterns of behavior, is unable to change the behavioral world it created, and becomes progressively less effective.

Model I and Model II theories-in-use. Argyris and Schön complete the conceptual framework with two models of theories-in-use. They constructed Model I from case studies in which they observed and interacted with professionals in one-to-one interactions and learning seminars. As such, Model I represents the general theory-in-use by which these people behaved (see Table 15). According to Argyris and Schön, Model I is a theory-in-use which describes the governing variables that many people hold, and the action strategies they implement, to maintain the governing variables. In Model I, actors seek to control others without being influenced in turn. The governing variables result in a highly defensive behavioral world with decreased effectiveness and little opportunity for learning. There is little change until the situation reaches crisis proportions and an enormous change, often of revolutionary proportions, results.

Argyris and Schön posit that this "dysfunctional model of behavior" (1974, p. 82) represented by the Model I theory-in-use persists because it is self-sealing. People may be very unhappy with the behavioral world that they have created and wish to change; but without action strategies that allow them to obtain honest feedback and accurate information to publicly test assumptions, they are unable to implement double-loop learning that would generate the needed changes.

Argyris and Schön then propose a Model II theory-in-use which improves capacity for learning and effectiveness and would lead to a more positive behavioral world with improved human interactions (see

Table 15

Model I Theory-in-use

Governing Variables	Action Strategies	Consequences for the behavioral world	Consequences for Learning	Effectiveness
1. Define goals and try to achieve them.	1. *Design and manage the environment unilaterally* (be persuasive, appeal to larger goals).	1. Actor seen as defensive, inconsistent, incongruent, competitive, controlling, fearful of being vulnerable, manipulative, withholding of feelings, overly concerned about self and others or unconcerned about others.	1. Self-sealing.	1. Decreased effectiveness.
2. Maximize winning and minimize losing.	2. *Own and control the task* (claim ownership of the task, be guardian of definition and execution of task).	2. Defensive interpersonal and group relationship (dependence upon actor, little additivity, little helping others).	2. Single-loop learning.	2. Decreased effectiveness.
3. Minimize generating or expressing negative feelings.	3. *Unilaterally protect yourself* (speak with inferred categories accompanied by little or no directly observable behavior, be blind to impact on others and to the incongruity by defensive actions such as blaming, stereotyping, suppressing feelings, intellectualizing).	3. Defensive norms (mistrust, lack of risk-taking, conformity, external commitment, emphasis on diplomacy, power-centered competition, and rivalry).	3. Little testing of theories publicly. Much testing of theories privately.	3. Decreased effectiveness.
4. Be rational.	4. *Unilaterally protect others from being hurt* (withhold information, create rules to censor information and behavior, hold private meetings).	4. Low freedom of choice, internal commitment, and risk-taking.		4. Decreased effectiveness. (Argyris and Schön, 1974, pp. 68-9)

Table 16). Argyris and Schön acknowledge that Model II is more a goal than a reality: "Model II is an attempt to make operational some governing variables that are broadly espoused, though infrequently realized, in our society" (1974, p.85). The most important characteristic of the Model II theory-in-use is that it is not self-sealing. It allows for the pubic testing of assumptions with honest feedback so that double-loop learning can occur.

Implications of the Conceptual Framework for the Present Study

Argyris and Schön apply their conceptual framework to propose how people may transform their behavior from Model I to Model II and describe cases in which people attempted to change their behaviors. But the most important features of this conceptual framework to the present study are the following:

1) What people think they do (espoused theory) can differ markedly from what they actually do (theory-in-use) without their being aware of the conflict.

2) People's behavior can be described by a model (theory-in-use) which includes a system of constructs (governing variables and action strategies) to bring about the consequences they desire (maintaining governing variables).

3) There are at least two kinds of learning and changing: one which maintains and refines the status quo (single-loop) and one which establishes new norms (double-loop).

4) People's assumptions and behaviors may be predicted and explained by models (theories-in-use). There are two different models, one which increases and another which decreases people's capacity for learning and effectiveness.

Table 16

Model II Theory-in-use

Governing Variables	Action Strategies	Consequences for the Behavioral World	Consequences for Learning	Consequences for Quality of Life	Effectiveness
1. Valid information.	1. *Design situations or environments where participants can be origins and can experience high personal causation* (psychological success, confirmation, essentiality).	1. *Actor experienced as minimally defensive* (facilitator, collaborator, choice creator).	1. Disconfirmable processes.	1. *Quality of life will be more positive than negative* (high authenticity and high freedom of choice).	1. Increased long-run effectiveness.
2. Free and informed choice.	2. *Task is controlled jointly.*	2. *Minimally defensive interpersonal relations and group dynamics.*	2. Double-loop learning.	2. *Effectiveness of problem solving and decision making will be great, especially for difficult problems.*	1. Increased long-run effectiveness.
3. Internal commitment to the choice and constant monitoring of its implementation.	3. *Protection of self is a joint enterprise and oriented toward growth* (speak in directly observable categories, seek to reduce blindness about own inconsistency and incongruity). 4. *Bilateral protection of others.*	3. *Learning-oriented norms* (trust, individuality, open confrontation on difficult issues).	3. Public testing of theories.		1. Increased long-run effectiveness.

(Argyris and Schön, 1974, p. 87)

The conceptual framework was applied to interpret the findings in the present study. The review of the literature in Chapter II made it clear that needs assessment is poorly understood and unevenly practiced. This study attempts to use Argyris and Schön's conceptual framework to provide a more accurate understanding of needs assessment and to suggest how to design more effective needs assessment practices.

Argyris and Schön (1974) hypothesize that there are several potential problems in professional education. First, they mention "incongruities between espoused theories and theories-in-use" (p. 174). They present the profession of education as a prime example of the theory being taught (an espoused theory) diverging widely from the reality of practice (the theory-in-use). Argyris and Schön then go on to say that in order to begin to resolve differences between espoused theory and theory-in-use, the theory-in-use must be explicitly stated. They say that since people often are not aware of this conflict and will state their espoused theories when asked, the only way to develop a theory-in-use is by directly observing behavior. This is what the present study did.

LIMITATIONS

As described in Chapter III, under "Establishing the Trustworthiness of Research," qualitative studies aim for transferability rather than generalizability. Detailed descriptions of the participants, context, and data to substantiate the findings have been presented in this study for readers to determine credibility of the findings and conclusions and the extent of transferability to their own setting and population. In addition, assumptions of the investigator were presented so that readers might determine to what extent the investigator biased the study. Key factors are listed below so readers can keep them in mind when determining credibility and transferability of the findings and conclusions. These factors have been grouped into the three areas of 1) the investigator, 2) the fellowship, and 3) the participants. Each is described in turn.

The investigator. In Chapter I, the investigator described her background and assumptions prior to beginning the study. It is possible that these assumptions affected the investigator's data collection and analysis. There are two reasons that these assumptions may not have unduly influenced the study.

First, many bias controls were implemented to prevent the researcher's assumptions from influencing the study (Chapter III). Many controls were used, such as collecting data from all 14 sources in three ways (observations, interviews, and documents) over a period of ten months, the use of a peer informant, triangulating data, and searching for negative cases before substantiating findings. A comparison of the original assumptions to the findings and final conclusions revealed that

the investigator did not discover what she had expected. Even in cases where assumptions were substantiated, this occurred by a very different mechanism than originally expected.

Second, substantial changes were made to the study in response to discoveries from the data. The inductive approach, in which analysis of data led to adjustments in later steps of the research process, resulted in changing the conceptual framework and rewriting the research questions. As further described in Appendix A, the study was designed with another conceptual framework in mind, one that placed much more emphasis upon the role of the individual assessor. It posited that there would be a relationship between personality traits of the assessor and the needs assessment methods selected and type of results obtained. It quickly became evident in analyzing early data that the original conceptual framework did not account for the data. The conceptual framework described earlier in this chapter was located much later in the study. A description of how analysis of early data also caused the research questions to be changed was described in Appendix A.

The fellowship. The second group of factors that may affect the transferability of findings and conclusions relates to the fellowship itself. The characteristics described principally in Chapter IV relate to the fact that this was a training situation. As shown in Table 17, several fellowship factors must be considered when determining transferability. However, many of these factors also provide useful information on teaching about needs assessment amidst factors present in existing environments.

Table 17

Fellowship Factors Affecting Transferability

Factor	**Examples**
1) *The needs assessments studied were performed as a required, guided assignment.*	☛ Participants had to conduct a needs assessment, regardless of their own desire or motivation level. ☛ Participants were furnished with information on how to conduct the needs assessment, as well as guidelines on how to construct their oral and written reports.
2) *Some phenomena may be particular to the fellowship setting and/or this iteration.*	☛ Seven different faculty interacted with the participants. Faculty advice on needs assessment may have affected participants in different ways. ☛ The workshop in which participants were exposed to needs assessment did not "go off well." Many participants were tired and/or off task during the workshop. ☛ In the midst of trying to learn about needs assessment, participants were also attempting new tasks in an unfamiliar environment. Ex: The peer informant described participants as unused to doing so much writing. Participants spoke of the sudden change in stature. ☛ If participants were to remain in the curriculum track of the fellowship, they had to develop a training intervention.

The participants. The third and final group of characteristics are those of the participants. These characteristics were described in Chapter IV. The three factors under which many of the more detailed characteristics may be grouped are listed in Table 18.

The three participant factors listed in Table 18 are likely to be present in many other situations in which needs assessments are performed. Transferability should be the widest with 1) people with similar amounts of knowledge and skill (i.e. SMEs and novices) and in 2) contexts in which people are learning about and doing their first needs

Table 18

Participant Factors Affecting Transferability

Factor	**Examples**
1) *Most of the participants were subject matter experts (SMEs) in the area in which they were to create a curriculum.*	☛ Most participants had a personal interest in the curricular area.
2) *The participants were novices to needs assessment.*	☛ This was a "first iteration" in which participants encountered many problems which they would not be likely to encounter in future needs assessments. For example, participants would expect greater time demands and be better prepared for time delays in future needs assessments.
3) *The participants functioned as "internal consultants" (they were part of the organization for which they were performing the needs assessment).*	☛ Participants were conducting needs assessments in the midst of carrying out other job responsibilities. ☛ Participants were influenced by local politics and pressures. An example is needing to cope with superiors' expectations.

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assessments. As such, the findings and conclusions are likely to be transferable into actual settings where needs assessments are performed.

In particular, two "real-world" aspects observed in the present study should enhance the transferability of the findings. First, needs assessment was treated as one part of a series of activities leading to a product to be used in an authentic setting. Other studies on needs assessment may have been biased in that they focused upon needs assessment alone. By documenting the process and products of needs assessment that occurred as part of a larger process for an actual product, the present study is more likely to be an accurate description of how needs assessment occurs in real-life settings. Second, as described in Chapter IV, the participants had to conduct needs assessments amidst already demanding jobs and busy personal lives. This circumstance also is more likely to match the conditions of actual situations in which needs assessments are conducted. Few people may be able to "drop everything" to do a needs assessment.

In addition, there were at least two benefits to studying novices. First, unlike experts who would have been more likely to give less information because they were able to "chunk" information, novices were able to describe processes and problems in detail. Second, as novices, participants encountered problems others are likely to encounter in first or early needs assessments. Novices provided data useful for preparing other novice assessors in what to expect, and determining what to teach them so they might experience less difficulty in performing their first needs assessments.

A final factor, not listed on Table 18, is whether the study findings are severely limited due to the participants' profession or if they are

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applicable beyond the topic of needs assessment as a concrete example of a much larger phenomenon. There is research suggesting either of these possibilities. In the first viewpoint, as the participants were practicing physicians, the study findings may be limited because the needs assessment process of the participants may have been heavily influenced by their customary process of diagnosing patients. Elstein, Shulman, & Sprafka (1978; 1990) describe how physicians diagnosing patients commonly generate a limited number of hypotheses from a limited amount of information, and that these hypotheses guide later data collection. This description of the process of diagnosis is similar to the process of needs assessment described in the findings. It is possible that this diagnosis process influenced the way this particular group of participants approached the needs assessment process.

In the second viewpoint, it is also possible that this study of needs assessment may serve as a particular example within the much larger arena of decision making. Langer (1989) and many others have contributed to the interdisciplinary field of decision science which has established that individuals do not arrive at decisions through purely rational calculations. This study may serve as one example of how people actually arrive at a decision. To resolve the concern over the potential limitation, further research needs to be done with non-physicians to substantiate that the needs assessment process described in the present study applies to professions outside of medicine. To determine whether the present study on needs assessment is related to the study of decision science will require an in-depth review of the literature in that area followed by additional research.

The key characteristics of the investigator, context, and participants of the present study were presented in this section. Readers should consider these characteristics as they determine the credibility of the findings and conclusions and transferability to their own context and population.

CONCLUSIONS

The major conclusions of the study were derived by interpreting the twenty findings according to the conceptual framework. The conclusions for each of the research questions are presented in Table 19.

Table 19

Study Research Questions and Conclusions

Research Question	Conclusion
1. What do the participants do in conducting a needs assessment?	1. The needs assessment procedures prescribed in the literature are different from how they were actually carried out in the real world.
2. What factors facilitate and/or hinder the needs assessment process?	2. The literature and formal training of needs assessment concentrated on the ideal, rather than a comprehensive set of practical procedures that could be used to cope with constraints in real settings.
3. What do participants learn in doing a needs assessment? a. about the process b. about the products	3a. The benefits of needs assessment perceived by the participants differed from those described in the literature. 3b. The results of the needs assessments were not as far reaching and change stimulating as suggested in the literature.

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DISCUSSION

The following four arguments support and explain the conclusions, drawing from the findings and the conceptual framework. In Arguments One and Two the differences between the espoused theory and theory-in-use for needs assessment are described. These arguments support Conclusion 1, which states that the needs assessment procedures prescribed in the literature (the espoused theory) are different from how they were actually carried out in the real world (the theory-in-use of needs assessment),. As described in Argument Three, Conclusion 2 states that the espoused theory of needs assessment presented in the literature, by the fellowship, and by participants focuses on the ideal; whereas the theory-in-use of needs assessment, as observed in participants' behaviors, is, by necessity, much more practical. In Argument Three, evidence is also presented to show how this conflict is detrimental. Not only did the participants perceive fewer and less important benefits from conducting a needs assessment (Conclusion 3a), but the results of the needs assessments in the present study were not as far reaching and change stimulating as suggested in the literature (Conclusion 3b). The fourth and final argument suggests how the espoused theory and theory-in-use of needs assessment could be brought into agreement.

Argument One:

An espoused theory of needs assessment is described in the literature, and by the fellowship and participants.

An espoused theory of needs assessment is described in the literature. According to the criteria presented by Argyris and Schön, the goals, models and techniques for conducting need assessment as described in the literature represent an espoused theory of needs assessment. It fits the criteria by being a set of rules people state about needs assessment that is not based on observation or verified by empirical research. Two of the tenets of the espoused theory of needs assessment are:

1) Needs assessment is conducted in order to arrive at the priority problem and an appropriate solution.

2) A needs assessment is to be conducted with the intent of better serving society as a whole (Alpha needs assessment).

These tenets are to be accomplished through the strategies presented in the literature. Example strategies include: (most often) using a discrepancy approach to identify needs, distinguishing needs from wants, collecting data from a variety of stakeholders, and so forth.

The fellowship also presented an espoused theory of needs assessment in formal sessions and materials. The fellowship's espoused theory of needs assessment is closely related to the theory espoused in the literature. Examples include claims of the benefits and importance of needs assessment. The espoused theory was evident in fellowship faculty's public references to needs assessment as an important early

step in a systematic curriculum development process, and in the needs assessment workshop handout (see Appendix G).

Participants also possessed an espoused theory of needs assessment. On the individual level, in this study, the participants also described what amounted to their own espoused theory of needs assessment. This espoused theory was evident in formal documents, public presentations and in statements in interviews. As described in finding #17, in most cases the participants stated an espoused theory that closely matched that described in the literature. As an example of what their espoused theory included (finding #18), participants described how it was important to contact a variety of sources in their needs assessments.

The espoused theory of needs assessment approximates Model II. Needs assessment, as espoused in the literature, the fellowship, and by the participants, assumes the three governing variables Argyris and Schön describe in Model II. As in the first governing variable in Model II, the intent of needs assessment is to collect valid information. This is accomplished through involving stakeholders in the data collection and prioritizing process. Similar to the second governing variable in Model II, needs assessment is designed to involve others on the basis of their own free and informed choice. The hope is that by being involved in deciding what is the priority problem and the solution, people will want to continue to work on creating and implementing the solution. This leads to the third governing variable in Model II. Needs assessment, as espoused, contains the belief that by being involved in the process, stakeholders will be committed to the decisions that come out of the

needs assessment; they will monitor the solution's progress, as they have a vested interest in its successful implementation.

The espoused theory of needs assessment is aimed at achieving double loop learning. Model II illustrates how the three governing variables lead to double loop learning (fundamental changes in the existing norms). Double loop learning is also the aim of needs assessment. In the literature, needs assessment is described as the initial stage of any planning effort which lays the groundwork for effecting lasting and positive change. It is to be used as a planning tool by questioning the status quo and proactively designing new systems and strategies that will bring substantial improvements (or at least prevent future difficulties).

In summary, the theory of needs assessment espoused by the literature, fellowship, and participants has been described in Argument One. This espoused theory assumes the governing variables in Argyris and Schön's Model II, which lead to double loop learning.

Argument Two:

Needs assessment as practiced by the participants is a theory-in-use.

A theory-in-use of needs assessment was constructed by observing participants' behaviors. The theory of needs assessment, as espoused in the literature, the fellowship, and by study participants, was not in agreement with the theory-in-use employed by the participants when they actually conducted needs assessments. As described below, the theory-in-use for needs assessment operates according to a different

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model, contains different governing variables, and results in a different outcome for learning and change.

The theory-in-use of needs assessment approximates Model I. The theory-in-use for needs assessments more closely ascribes to the governing variables of Model I than Model II. This is illustrated by findings that lead to each of the governing variables.

The first governing variable of Model I is *"Define goals and try to achieve them."* This governing variable assumes individuals will construct their own goals and avoid being influenced by others. Several of the findings support this governing variable. First, in finding #20, we were provided with a description of how the participants had already decided upon the priority problem and the solution prior to beginning the fellowship prescribed needs assessment. In finding #19, we saw that there were few changes to the final product as a result of the needs assessment. Thus, the needs assessment substantiated the participants' own original ideas.

Second, a combination of findings made it unlikely that the participants would be confronted with data that would contradict their own ideas. In findings #3 through #7, descriptions of methods used and sources contacted by the participants in the needs assessment were presented. These findings showed that assessors collected data from sources most like themselves (#5) and completely ignored a particular stakeholder group (#4). Assessors also focused data collection on sources within their own immediate environment (#6). By limiting their exposure to sources in different roles that might have a different perception of the problem, or in different contexts that might have

alternate approaches to solving the problem, the assessors were less likely to hear opinions that were very different from their own.

A further layer of protection was added through differences in data collection methods. As described in findings # 3 and #7, assessors used structured methods that documented responses with sources that were most like the assessors and/or within the assessors' own contexts--they used less structured, undocumented methods with sources less like themselves and from other contexts. Thus, when assessors analyzed the data, they were less likely to be confronted with written data that would conflict with their own ideas.

These findings suggest that assessors, perhaps unconsciously, directed the needs assessment in a way that would help them achieve their own goals.

The second governing variable in Model I is "*Maximize winning and minimize losing*." Argyris and Schön said that "[p]articipants felt that once they had decided on their goals, changing them would be a sign of weakness" (1974, pp. 66-67). Thus "winning" consisted of ensuring that their original goals would be accepted. In the present study, participants employed behaviors that made it more likely that they would "win." The findings listed under the first governing variable illustrate how the assessors ultimately "won" in the sense that the needs assessment validated their preferred solution.

However, the findings also suggest that the needs assessment was conducted in more subtle ways that favored the assessor. An example is the lack of bias controls described in finding #11. By asking leading questions and accepting a low response rate on questionnaires, participants were biasing data in their favor. Also, by not presenting

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hard data in the needs assessment reports, participants were not allowing others to question how their conclusions had been determined.

The third and fourth governing variables of Model I are "*Minimize generating or expressing negative feelings*" and "*Be rational.*" These governing variables assume it is better to avoid areas of possible conflict than to uncover painful emotions, even if they are closely associated with accurate and pertinent information. These variables require assessors to hold back their own feelings and avoid areas in which others may have strong feelings. In the present study, participants gave many examples of behaviors that could be accounted for by these governing variables. These behaviors were often related to the "political" purposes of needs assessment. For example, in findings #5 & #11 we saw how Mike and Rubin collected data they never intended to use for the sole purpose of making sure these sources would not be hurt (and, going back to the second variable, so they wouldn't oppose the participants' intended solution).[1]

Comparing the espoused theory and theory-in-use of needs assessment. This contrast between the espoused theory and theory-in-use of needs assessment results in Conclusion 1: The needs assessment procedures prescribed in the literature are different from how they were actually carried out in the real world. The difference between the major tenets of the espoused theory and those of the theory-in-use of needs assessment are illustrated in Table 20.

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[1] This suggests that change strategies were used to accomplish the governing variables of model I (i.e. getting others to come around to own thinking). However, change strategies also could be used according to model II: ex: make people comfortable and safe so they can respond honestly, etc.

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Table 20

Sample Comparison of Espoused Theory and Theory-in-use

of Needs Assessment

Theory Espoused in Literature and by Fellowship and Participants	Theory-in-use Displayed in Behavior of Participants
Needs assessment is conducted in order to arrive at the priority problem and an appropriate solution.	Participants had already decided upon the priority problem and the solution prior to beginning the prescribed fellowship needs assessment. (Finding #20) The prescribed fellowship needs assessment did not result in significant changes to the assessor's original problem and solution. (Finding #19) The needs assessment was conducted in a way to avoid the assessor being confronted with contrary data. (Findings #3,4,5,6,7)
A needs assessment is to be conducted with the intent of better serving society as a whole (Alpha needs assessment).	The needs assessment substantiated the assessor's personal idea. (Findings #19, 20) The needs assessment was focused almost exclusively within the immediate context and upon sources similar to the assessor. (Findings #3,4,5,6,7)

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The theory-in-use of needs assessment prevents double loop learning. Argyris and Schön's conceptual framework describes how fundamental changes that are necessary to long run effectiveness grow out of changes in the governing variables and existing norms. They call these changes "double loop learning." The findings describing participants' behavior result in a process which inhibits double loop learning. As stated in Conclusion 3b, needs assessment did not accomplish what was claimed in the literature.

In the present study, needs assessments resulted in single loop rather than double loop learning. Assessors in this study began with a particular problem in mind and had a preferred solution. As assessors had developed these ideas 1) without following a systematic process, and 2) with the existing organizational norms and personal preferences in mind, they were not likely to make large adjustments to the existing situation. This is substantiated by finding #12 regarding assessors' focus. The situation in which Emma was using the needs assessment to justify small adjustments to the existing conference attendance policy, rather than questioning whether the conference had to be attended at all, is an example of this phenomenon. Assessors then conducted their needs assessments in ways that were less likely to reveal other problems or lead to new or unusual solutions. Assessor choices as to how data were collected, the sources from which data were collected, and the ways the data were analyzed made it likely that only small adjustments, also known as single loop learning, would occur.

In summarizing Argument Two, participants practiced a theory-in-use that was different from their espoused theory of needs assessment (leading to Conclusion 1). Their theory-in-use approximated the

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governing variables present in Argyris and Schön's Model I, and was likely to result only in minor modification to the status quo, or single loop learning (leading to Conclusion 3b). Unfortunately, the disparity between the espoused theory and theory-in-use of needs assessment creates conflicts and inhibits effectiveness. This concern is discussed in Arguments Three and Four to explain Conclusions 2 and 3a.

Argument Three:

Differences between the espoused theory and theory-in-use of needs assessment create conflict.

Argyris and Schön assert that inconsistencies between espoused theory and theory-in-use lead to conflict. People are not aware of, and consequently not able to detect, discrepancies between what they think they are doing and their actual behavior. Therefore, when intended outcomes do not occur, they are unable to accurately pinpoint the problem and cannot make improvements. By applying the conceptual framework to the study findings, the conflicts between the espoused theory and the theory-in-use of needs assessment are made apparent and can be explained.

The current theory-in-use of needs assessment is self sealing. In the conceptual framework, Argyris and Schön describe how the Model I theory-in-use acts as a self fulfilling prophesy, or is "self-sealing." As long as people behave according to the governing variables in the Model I theory-in-use, they will continue to confirm their own ideas and maintain Model I governing variables.

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Even when participants were made aware of the conflict between their espoused theory and theory-in-use of needs assessment, they did not address the conflict. A particularly salient example occurred the last two days the investigator was in contact with all the participants. As described in finding #19, the investigator showed individual participants Tables 13 and 14 documenting the lack of changes to curricula. Participants were visibly surprised when shown concrete examples of how their projects had changed little as a result of the needs assessment.[2] The conceptual framework suggests participants were surprised because they had been confronted with evidence of their theory-in-use being in conflict with their espoused theory. However, in these private conversations, after expressing surprise, the participants acknowledged that there had been no change in their topic and, at most, minor adjustments to content and instructional methods were made as a result of performing the needs assessment.

Nevertheless, in the same two-day period, participants also presented their curricula in a public forum and made claims about needs assessment that contradicted this discovery. The participants presented their curricula in ten minute presentations at a conference. Thirteen of the fourteen participants used a portion of their ten minutes to talk about needs assessment.[3] In each of these thirteen instances, participants described their needs assessment process and said that it had helped them discover the problem and design an appropriate solution. In other words, participants acknowledged their theory-in-use

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[2] Reported in Finding 19, summarized in Table 13.

[3] The fourteenth participant, Rachel, said she had not talked about needs assessment in her presentation only because she had forgotten to make a visual to accompany it.

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of needs assessment in private discussions, but presented the differing idealized espoused theory of needs assessment publicly.

The conceptual framework suggests that ignoring this disparity was expedient and, in the short term, useful for the participants. As described in Argument Two, they had conducted needs assessment according to their theory-in-use, which had allowed them to confirm their original ideas. Yet, participants appealed to the espoused theory of needs assessment to give their needs assessment results and, by extension, their curricula, legitimacy.[4]

Another example of how participants' theory-in-use of needs assessment is self-sealing was illustrated in finding #18. When describing the conditions under which they would conduct needs assessments again, the participants who had conducted the most comprehensive needs assessments stipulated that, in the future, they would not use as many data collection methods, contact as many sources, or formally analyze and write up the data. By further restricting the data collection, analysis methods, and the range of sources contacted in future needs assessments, participants would be even less likely to discover problems or solutions that differed from their own ideas.

In Table 21, other instances in which the data revealed conflicts in participants' espoused theory and theory-in-use are presented. In each of these instances, the participants were unwilling or unable to acknowledge the possibility of conflict.

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[4] It could be argued that participants who learned about the discrepancy just minutes before they were to present at the conference could not change what they had planned to say on such short notice. However, the investigator did not observe any less sweeping statements as to the usefulness of needs assessment from participants who had learned of this discrepancy 24 hours before presenting.

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Table 21

Examples of Participants' Espoused Theory vs. Theory-in-use Conflicting

Finding(s)	Example of Conflict
#10	Participants' level of expectation of needs assessment as demonstrated by their behavior (TIU) was not consistent with their rating of the importance of needs assessment (ET).
#11	Participants striving for a high response rate on their questionnaires were doing so in order to increase the likelihood that their curriculum would be publishable (TIU), not to improve the quality of the data they obtained in the needs assessment (ET).
#16	Participants gave definitions of needs assessment that matched the espoused theory of needs assessment, not the theory-in-use. In particular, in finding #1, Rachel said that she had no time to do more needs assessment after the assignment was handed in (TIU). However, she later described needs assessment as an "ongoing activity" (ET).
#16 & #17	Although participants had espoused in finding #16 that the needs assessment had been useful for collecting others' ideas, in finding #17, they revealed their theory-in-use in which they would do needs assessment again primarily to get others' support, rather than to collect ideas.
#19	When confronted with evidence that their topics had not changed, Julie and Eve insisted their topics had changed as a result of the needs assessment (ET). They cited what they had discovered in their surveys as support for these changes, even though Julie had earlier told the investigator how she had used the surveys to confirm her own ideas, and Eve had acknowledged that she had not done her survey well (TIU).
#19	When confronted with evidence that her instructional format had not changed (TIU), Emma continued to insist that large changes had been made in her instructional format as a result of the needs assessment (ET).

The problems with needs assessment described in the literature can be attributed to conflicts between espoused theory and theory-in-use. Problems outlined in Chapter II included 1) focusing on needs of the individual or organization rather than on what would benefit society as a whole (Roth, 1978; Witkin, 1984; Kaufman, 1977a, 1977b, 1989), and 2) failure of the assessor to define "need" (Roth, 1977,1978; Sleezer, 1992). The conceptual framework suggests an explanation for why these problems exist.

These "problem" areas are actually points at which the espoused theory and theory-in-use of needs assessment conflict. The espoused theory of needs assessment claims to discover needs that benefit society as a whole. However, as documented in the present study, the theory-in-use of needs assessment allows assessors to focus on the needs of an individual or the organization.

It is even possible that some of these "problems" continue to exist because resolving them would highlight conflicts between the espoused theory and theory-in-use of needs assessment and force changes. For example, conducting needs assessment according to a clear operational definition of "need" would make the present theory-in-use impracticable. A clear definition of "need" would include whose needs were being considered and the criteria by which needs were to be prioritized. This would necessitate the inclusion of stakeholders regardless of whether or not that population's opinions were likely to be in agreement with the assessor's. Actually measuring need according to a particular approach, discrepancy based for example, would mean that other needs might be prioritized above the need on which the assessor prefers to work. Thus, conducting a needs assessment according to a clear definition of need

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would make it difficult for assessors to substantiate their own ideas. However, as long as the disparity between the espoused theory and theory-in-use continues, assessors will be able to use the needs assessment to validate their preferred solution, yet still appeal to the espoused theory to claim higher ideals.

In addition, the conceptual framework accounts for many of the other shortcomings of needs assessment described in the literature. For example, reliance upon poorly designed surveys (Witkin, 1984; Roth, 1978) was documented in finding #11 and, according to the conceptual framework, fulfills a purpose. As described earlier, by relying upon surveys that ask leading questions and tolerating low response rates, assessors are biasing the results in the direction of their preferred solution.

Also, the conceptual framework provides an explanation of why there are disagreements over terminology and so many divergent models of needs assessment exist. The multitude of terms and models may be endemic to this conflict between espoused theory and theory-in-use. For example, Kaufman's (1985; & Valentine, 1989) insistence over the difference between "needs assessment" (which he describes as problem identification and prioritization) and "needs analysis" (which he describes as the search for causes and solutions), can be seen as his attempt to distinguish between espoused theory (needs assessment identifies problems) and theory-in-use (needs analysis begins with a given problem).

The conflict between espoused theory and theory-in-use was also evident in the fellowship teaching of needs assessment. As stated in Conclusion 2, the formal training on needs assessment (as represented

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by public statements made by faculty in formal sessions and the written fellowship materials) concentrated on the ideal, or espoused theory of needs assessment. In contrast, individual faculty members' theory-in-use for needs assessment was evident in more private comments to individual participants and other faculty. Participants received conflicting messages between the formal training situations in which the espoused theory was presented, and private conversations which addressed more practical considerations for carrying out a needs assessment. The learning process was further complicated as the conflicting statements were often coming from the same person/s (each participant's mentor/s).

Conflicts between the espoused and theory-in-use for needs assessment would account for fellowship faculty behaviors. As described in finding #20, participants began the needs assessment with a specific problem and solution in mind. After years of working in the fellowship, it is likely that the faculty recognized this and had adjusted their theory-in-use accordingly. In Chapter IV it was mentioned that at least four of the faculty made statements or acted in ways suggesting that needs assessment was not as important as other processes. The possibility that faculty knew, on an implicit level, that the theory-in-use of needs assessment was different from what they were espousing is also substantiated by the fact that they were not surprised by the findings. Through years of conducting their own needs assessments, and watching fellows conduct them, faculty had consistently seen how little change in curricula had occurred. Although they, too, continued to talk about the espoused theory of needs assessment, they could not help subtly

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communicating different expectations derived from their understanding of the theory-in-use of needs assessment.

This conflict between espoused theory and theory-in-use limits the effectiveness of needs assessment. Although, in the short term, it is "easier" to ignore conflicts between espoused theory and theory-in-use, effectiveness is greatly diminished in the long term. One may ask, if needs assessment, as currently practiced, results in few changes to the original idea, is it any wonder that needs assessment is often skipped? On some level, didn't each of the assessors at the conference know that the needs assessment had been used to *legitimize or refine* rather than *discover* the problem and solution? This conflict appears to have 1) complicated the teaching of needs assessment, 2) made it more difficult to conduct a needs assessment (especially as a novice), and 3) brought needs assessment results into question.

The limited effectiveness of needs assessment is evident in Conclusion 3a, which states that the benefits of needs assessment perceived by the participants differed from those described in the literature. Although participants espoused benefits of needs assessment in finding #17 that more closely matched the theory espoused in the literature (needs assessments are useful for collecting ideas and gaining support), in finding #18, the participants' contrasting theory-in-use for the benefits of needs assessment was evident. Participants stressed the usefulness of needs assessment for gaining support far over collecting ideas. They did not perceive problem finding or solution identification to be a benefit of needs assessment, except in situations in which they were unfamiliar with the content. And even in cases in which they would choose to do a needs assessment in the future, their desire to simplify

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the process by using fewer methods and contacting fewer sources suggests they did not perceive that the benefits of needs assessment justify much effort.

Ultimately, failure to resolve these conflicts substantially weakens needs assessment and the rest of the Performance Technology process. As described in finding #20, participants had a preferred problem and solution in mind, which changed little over the course of the needs assessment. As stated in Conclusion 3b: the results of the needs assessments in the present study were not as far reaching and change stimulating as suggested in the literature. The participants who expressed the most disappointment with the outcomes of needs assessment were those who had put the most time and energy into the process. They were frustrated when the process did not deliver what the espoused theory had promised. Max, who spent the greatest amount of time on his needs assessment, spoke openly with the investigator about his disappointment. As quoted in finding #12, Max felt that the benefits had not justified the energy he had invested in the needs assessment. The field notes capture what transpired later in the same conversation:

> Max leaned forward, and gestured, rhythmically pointing his index finger to the table as he spoke the following with emphasis. "Like for me, before I order any test, I ask myself, 'Could I learn something from this that would make me change my mind?' And if my answer is 'No,' I don't order it."
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> I said, "That sounds like the same philosophy as you had about needs assessment. It isn't that useful to you because you didn't change much because of it."
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> Max: "Yes. Exactly."

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In summary, a case is made in Argument Three for how the existing theory-in-use of needs assessment is self-sealing. Evidence shows that assessors find it expedient to overlook the existing conflict between espoused theory and theory-in-use. This conflict may also account for many of the problems with needs assessment as cited in the literature and complicate the teaching of needs assessment. Ultimately, this conflict greatly decreases the effectiveness of needs assessment.

In effect, Conclusion 1, as supported by Arguments One and Two, states that there is a conflict between the espoused theory and theory-in-use of needs assessment. As stated in Conclusion 2, the espoused theory of needs assessment presented in the literature, by the formal sessions and materials in the fellowship, and by participants focuses on the ideal, whereas the theory-in-use of needs assessment as observed in participants' behaviors is by necessity much more practical. In Argument Three, evidence was presented to show how this conflict is detrimental. Not only did the participants perceive fewer and less important benefits from conducting a needs assessment (Conclusion 3a), but the results of the needs assessments in the present study were not as far reaching and change stimulating as suggested in the literature (Conclusion 3b). The fourth and final argument will suggest how espoused theory and theory-in-use may be brought into agreement.

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Argument Four:

There may be a way to bring the espoused theory and theory-in-use of needs assessment into agreement.

The espoused theory of needs assessment is well documented in the literature. This study has made a start in documenting the theory-in-use of needs assessment. Recommendations from Argyris and Schön's experience may provide the next steps in working to bring the espoused theory and theory-in-use of needs assessment into agreement so that the effectiveness of needs assessment can be enhanced.

Argyris and Schön (1974) propose how to redesign professional education. Their suggestions include clarifying the areas of crisis by documenting the conflicts between espoused theory and theory-in-use, and working on transforming theories-in-use to more closely approximate Model II. How needs assessment is taught and practiced may be reformed by Argyris and Schön's recommendations on how to make transitions between the two models. They assert that two key factors in making this transition are 1) repeatedly examining the theory-in-use through publicly testing assumptions and 2) being open to changing behavior.

However, we should not automatically assume that all the changes must be made in the theory-in-use of needs assessment. It is also possible that adjustments should be made to the espoused theory to make it more practicable in "real world" settings. For example, needs assessment, as currently espoused, describes a process for problem and solution <u>finding</u>. It completely ignores that, at least in the cases documented in the present study, assessors do not approach the task as

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a "tabula rasa." Similar to Simon's (1945) description of administrative decision making, before beginning the prescribed fellowship needs assessment, assessors did their own form of needs assessment. They thought about the situation, perhaps conducted some exploratory questioning, and began to employ their own assumptions. An espoused theory of needs assessment needs to take these aspects of human nature into account. In considering the prior knowledge and decision making of the assessor, the needs assessment process might, under certain circumstances, be better used for problem and solution <u>refining</u>.

In addition, the present study's findings on helping and hindering factors suggest other barriers to successfully conducting a needs assessment in actual situations. Argyris and Schön acknowledge that Model II is difficult to implement in existing settings. They contend that "organizations tend to create learning systems that inhibit double-loop learning that calls into question their norms, objectives, and basic policies" (1978, p.4). It would be especially difficult for unprepared assessors to deal with this resistance. Issues such as perception of self efficacy, the fact that change implied by needs assessment may be threatening to others, and that the assessor may have little personal power in the organization must be addressed in an espoused theory. For example, in the present study, what was the influence of the fact that the average time on the job for the participants was just two years? Was it coincidental or significant that the participant expressing the least concern with resistance to change and pressures from superiors was the one with the longest tenure (five years)?

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And finally, Argyris and Schön admit that Model II is more a goal than a reality. To be effective, an espoused theory of needs assessment also must be achievable.

Some inroads in bringing the espoused theory and theory-in-use into agreement were made in this study. First, the potential usefulness of the conceptual framework to interpreting the current state of needs assessment has been identified. Second, an initial documentation of the theory-in-use of needs assessment has been made. Although more studies need to be conducted to verify and further define this theory-in-use, it provides an initial understanding of key areas of conflict between the espoused theory and theory-in-use of needs assessment--therefore pointing to areas that should be given priority attention. Finally, the findings related to the second research question may be used to design future instruction on needs assessment that prevents or ameliorates some of the hindering factors, and begins to create guidelines for periodically checking for conflicts between espoused theory and theory-in-use.

Summary of Arguments and Conclusions

In Arguments One and Two the differences between the espoused theory and theory-in-use for needs assessment were described. These arguments support Conclusions 1 and 3b, which state that the needs assessment procedures prescribed in the literature (the espoused theory) are different from how they were actually carried out in the real world (the theory-in-use of needs assessment), and that the needs assessments carried out by the participants of the present study did not accomplish what is claimed in the literature. As described in Argument Three,

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Conclusion 2 states that the espoused theory of needs assessment presented in the literature, by the fellowship, and by participants focuses on the ideal; whereas the theory-in-use of needs assessment, as observed in participants' behaviors, is, by necessity, much more practical. Evidence was also presented in Argument Three to show how this conflict is detrimental. Not only did the participants perceive fewer and less important benefits from conducting a needs assessment (Conclusion 3a), but the results of the needs assessments in the present study were not as far reaching and change stimulating as suggested in the literature (Conclusion 3b). The fourth and final argument suggested how espoused theory and theory-in-use could be brought into agreement.

The following implications of the study and suggestions for further research represent how findings from the present study may be used to begin to bring the espoused theory and theory-in-use of needs assessment into agreement to enhance effectiveness.

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IMPLICATIONS OF THE STUDY

Recommendations

Discoveries from the present study suggest recommendations in four areas: 1) for assessors and those training them, 2) for the specific context of the present study, 3) for the use of this methodology and conceptual framework in Performance Technology, and 4) for further research. Each will be described in turn.

General recommendations for assessors and those training them.

As described in Conclusion 2, needs assessment, as currently taught, does not adequately prepare the assessor to effectively and efficiently perform needs assessments. According to the conceptual framework, this is because the espoused theory of needs assessment is what is taught, and assessors are not presented with strategies to become aware of their theory-in-use of needs assessment and to monitor the two theories for conflict. The conflict is essentially between the ideal, as captured in the espoused theory, and the practical, as demonstrated in the theory-in-use of needs assessment. Both viewpoints must be considered if the effectiveness of needs assessment is to be improved.

The general recommendations listed in Table 22 address two central themes in an effort to bring the espoused theory and theory-in-use of needs assessment into agreement. First, needs assessment must be designed and taught in a way that works in real-life situations which contain a variety of constraints and necessitate sudden changes in strategy. Examples of these constraints include limited time available,

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delays, and unexpected problems. And second, needs assessment training must also equip assessors with other essential skills. Essential skills described in the present study include time management, knowledge of change agentry, and bias control in data collection.

Table 22 is a compilation of suggestions from the study findings which demonstrate how we can better prepare practitioners to effectively and efficiently conduct needs assessments on their own. All of the findings have contributed to these recommendations. In particular, however, the second research question in the present study: "What factors facilitate and/or hinder the needs assessment process?" suggests ways to improve the teaching and practice of needs assessment.

Recommendations for the specific context of the present study. Many of the recommendations listed in Table 22 have already been incorporated into the fellowship. In the year following the study, adjustments were made so that the espoused theory of needs assessment more accurately prepared novice assessors for conducting one in an actual situation. Components also were added that required more rigorous examination of assessors' theories-in-use of needs assessment. Changes were made in the needs assessment handout, workshop content, and assignment. Examples of changes included: 1) stressing the need to acknowledge that assessors had already begun to think about the situation and were likely to have a problem and preferred solution in mind, which they needed to document and control; 2) warnings to expect time delays and tips on how previous fellows had handled time constraints; 3) a change in workshop exercises from fellows receiving input on their needs assessment plans from mentors, to that of

Table 22

General Recommendations for the Teaching and Practice of

Needs Assessment

Finding #	Recommendation
2	☛ Take a block of time to plan NA (then can do flexibly in small pieces as time allows.--finding #11)
3,4,5,6,7	☛ Check for biases between sources and data collection methods ☛ Seek diversity in sources as to: similarity to assessor's role and both inside and out of immediate context
8, 16	☛ Acknowledge concept may be difficult, will learn by doing ☛ Point out that NA is not that different from everyday problem solving/decision making
9	☛ Prepare novices for time demands, to expect and plan for delay
10	☛ Check motivation level, too high, too invested, too low, don't care (be aware of how motivation level influences NA)
11	☛ Teach key skills along with NA: time management, change agentry, data collection, and analysis bias controls
12	☛ Teach how to start wide and gradually focus (for folks who have trouble narrowing) ☛ Urge to periodically share needs assessment discoveries with a person from outside the context (they will broaden focus)
13	☛ Create readily available resources that can be referred to in stages (Handouts work well, but also need a person to consult not just while learning about NA, but as doing own. This could possibly be same as person suggested just above.)
14,15	☛ Acknowledge organizational constraints and show how to overcome with creative thinking (internal control) and flexibility
17	☛ Show how contacting multiple sources has two, not just one, benefits/purposes, be clear on which you are doing with each source
18	☛ NAs may be conducted for different purposes, if SME, not to discover problem, but to verify and refine ☛ Whether SME or novice, need to document WHY doing NA
1,19,20	☛ Acknowledge that assessors have already thought about the problem and its solution, and design ways to document this so that it can be controlled (as simple as writing down before begin, i.e. document preexisting ideas before beginning) ☛ Devise a method to see where and if changes occur as a result of needs assessment. For example, in curricula, in topic (big), in content, in instruction? And how big changes were.

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peers listening and advising each other with mentor faculty listening in; and 4) changes in the assignment criteria to specifically require detailed reporting of data collection and analysis methods.

In addition, changes were made to the fellowship schedule in response to the participants' concern that the needs assessment workshop had occurred quite late in the two-week session. Although it was offered on the same day as in the previous year, related workshops followed the needs assessment workshop, or workshop content was slightly altered so that fellows were no longer hearing statements such as "Of course, you would need to do a needs assessment first, then you would start working on what we'll be doing today...."

Although the subsequent year was not a part of the study, data from these fellows were not analyzed, and anecdotal information was probably tainted by researcher bias, it is interesting to note that almost every single piece of information suggests the changes had a positive effect. Indications that these changes to the workshop content and scheduling were beneficial include another faculty member who led a related workshop (which now followed the needs assessment workshop) making the unsolicited comment that fellows' questions and comments had been much more concrete and task oriented this year. In addition, fellows' written and verbal evaluations of the needs assessment workshop were fewer and more positive. All respondents either agreed or strongly agreed that the workshop had prepared them to conduct a needs assessment at their home institution and only one commented on the desire to have the workshop occur earlier in the fellowship session.

In addition, a faculty member who had been with the program since its inception sixteen years earlier made a point of approaching the

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investigator and another workshop presenter to tell them how pleased he was with the changes: At the end of the revised needs assessment workshop, he had a sense that fellows had a clear idea of what needs assessment was and a plan in mind for how they were to carry out their own. His own mentees had asked detailed questions that suggested a better understanding of the process and its purpose than had the participants studied in the previous year.

Recommendations for the use of this conceptual framework and methodology in Performance Technology. Both the conceptual framework and methodology employed in the present study should be useful in future research in Performance Technology. Argyris and Schön have applied their framework to numerous professions. The present study demonstrates the usefulness of the framework to improving the area of needs assessment. In addition, as Performance Technology is a profession in which theory must be applied in practice, there are numerous areas that would benefit from documenting espoused theory and theory-in-use to reduce conflict and enhance effectiveness.

The qualitative approach would be useful in further studies using the present conceptual framework, but also would stand to make significant contributions to the understanding and effectiveness of Performance Technology in other research studies. As theories-in-use can only be documented by directly observing behavior, qualitative methodologies would be useful in documenting theories-in-use regardless of the context or phenomena of interest. However, methodologies similar to those employed in the present study are likely to be applicable in an even wider range of research within Performance Technology (Shrock,

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1984). As suggested in Chapter III, qualitative studies are particularly appropriate when 1) wishing to study a phenomenon for which quantifiable variables have not been defined, 2) for understanding process, and 3) for studying phenomena in the natural setting. Each of these characteristics is especially conducive to research on Performance Technology as 1) the field is relatively "young" and, in many areas, little previous research exists from which variables and hypotheses can be drawn for quantitative studies; 2) Performance Technology is, itself, a process; and 3) as the ultimate aim is to improve human performance in the work setting, this is where research could and should be conducted.

Recommendations for further research. This was an exploratory study in a particular setting with a specific population. If needs assessment is to be made more effective, further research must be conducted both to document the transferability of findings to other settings and subjects and to further refine the theory that has been started in the present study. Questions related to each of these of two aims will be listed in turn.

First, research needs to be conducted to determine whether the findings and conclusions in the present study are applicable to diverse settings and populations. In particular, research could be conducted to determine the degree to which the findings and conclusions in the present study apply to:

1) Assessors who are not subject matter experts (but may have to work with them in the needs assessment).

2) Assessors who are experts rather than novices to needs assessment.

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3)   Assessors who function as external consultants.

4)   Needs assessments not conducted in supervised training settings.

5)   Needs assessments conducted in areas other than medical education, even away from the field of education as a whole.

In this way, the present conclusions and findings would be supported, refuted, and refined through research.

Second, the theory that has been initiated in the present study can be further refined and tested in future research on needs assessment. Example questions include:

1)   What is the current theory-in-use of needs assessment? (Across a variety of contexts and populations)

2)   How is it possible to bring the espoused theory and theory-in-use of needs assessment into agreement?

   a)   Do guidelines like those suggested under recommendations for the teaching and practice of needs assessment help?

   b)   How might changes from Model I to a Model II theory-in-use for needs assessment be promoted?

   c)   Does promoting a change to a Model II theory-in-use actually promote agreement between espoused theory and theory-in-use?

3)   Is there actually more than one type of needs assessment?

4)   Does the conceptual framework (and suggestions derived from it) apply to both genders?

5)   How do key skills and perceptions of the assessor affect the needs assessment process and products? (Investigators may wish to administer instruments measuring areas highlighted in the present study, such as change agentry, time management, and attribution or locus of control.)

Research based on such questions should lead to discoveries that will promote the effectiveness and efficiency of needs assessment.

Finally, the topic of needs assessment could benefit from a better understanding of how it relates to the discoveries in decision science. It is possible that, to the degree that needs assessment can be demonstrated to have close ties to particular decision making processes, existing research in decision science may have valuable pointers for revising the espoused theory and understanding the theories-in-use of needs assessment. This study has documented conflicts between an idealized representation and the practical application of a process. As such, needs assessment may both be informed by and, in turn, inform the wider area of human decision making.

SUMMARY

Conclusions and supporting arguments discussing the twenty findings of the study were presented in this chapter. First, Argyris & Schön's (1974, 1978) conceptual framework for theories of action was described. Next, with the limitations described, the conceptual framework was used to interpret the findings to derive the major conclusions in answer to the three research questions of the study. These conclusions were:

Conclusion #1:	The needs assessment procedures prescribed in the literature are different from how they were actually carried out in the real world.
Conclusion #2:	The literature and formal training of needs assessment concentrated on the ideal, rather than a comprehensive set of practical procedures that could be used to cope with constraints in real settings.
Conclusion #3a:	The benefits of needs assessment perceived by the participants differed from those described in the literature.
Conclusion #3b:	The results of the needs assessments were not as far reaching and change stimulating as suggested in the literature.

Finally, in the section, "Implications of the Study," the investigator presented implications for: 1) the future teaching and practice of needs assessment, 2) the specific context of the present study, 3) the use of a qualitative approach and the conceptual framework in research on Performance Technology, and 4) suggestions for future research. The purpose of this study was to describe and explain how individuals who are first exposed to needs assessment concepts implement and learn from the process.

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A QUALITATIVE STUDY OF NEEDS ASSESSMENT: THE GULF BETWEEN THEORY AND PRACTICE

Volume II

By

Josephine Marie Csete

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Counseling, Educational Psychology
and Special Education

1994

APPENDICES

APPENDIX A

Changes to the Study:
The Conceptual Framework and Research Questions

Changes to the Study:
The Conceptual Framework and Research Questions

In research, a conceptual framework works in concert with the research questions to describe and explain the phenomenon of interest. The research questions focus attention on the areas of interest, and the conceptual framework organizes a study's findings into a comprehensible structure. In the present study, the conceptual framework was taken from the work of Argyris & Schön's (1974) Theory into Practice, which is described in Chapter VI, "Conclusions and Discussion." The research questions as outlined in Chapter I, "Introduction to the Study," were designed to describe and explain how people conduct needs assessments and what they learn from doing them.

It is important to note that the study did not begin with this conceptual framework or set of research questions. In fact, the study was originally designed with a conceptual framework on decision making patterns that used the Myers-Briggs Type Inventory (MBTI). The MBTI is a validated instrument known for indicating people's preferred style of interaction and methods for obtaining information and acting on it.[1] A review of the literature on the topic of needs assessment combined with theories from cognitive science and decision making strongly suggested

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[1]The scores are reported for four continua: Extraversion/Introversion, INtuition/Sensation, Thinking/Feeling, and Judging/Perceiving. For introductory information on the Myers Briggs Type Inventory, consult the following texts:
   Myers, I. B. (1980). Gifts differing. Palo Alto, CA: Consulting Psychologists Press.
   Keirsey, D. & Bates, M. (1978). Please understand me: Character & temperament types. Del Mar, CA: Prometheus Nemesis Book Company.

that the needs assessment process was heavily influenced by the decisions and values of the individuals conducting needs assessments. The Myers-Briggs Type Indicator was to be used to look for patterns between the analyst's personality type and the manner in which the needs assessment was conducted and the type of results obtained.

However, even before the MBTI was administered, the investigator had questioned its usefulness to the study. Data collected and analyzed prior to the time the MBTI was administered indicated that the original focus upon the individual analyst was not encompassing what was happening during the needs assessment process. Although the analyst was a key player, the data supported a perspective on needs assessment that paid greater attention to the interaction of the analyst with the environment. In addition, in the present study, the MBTI results were called into serious question. The investigator met with an expert in the use of the MBTI in medical settings who was also familiar with the participants. The expert seriously questioned the accuracy of at least three of the fourteen participants' scores, "I think they answered the way they'd like to be rather than how they really are."

Despite questions as to the usefulness, and even the accuracy of the MBTI results, the investigator examined the MBTI scores for trends. No links were found between personality type, as indicated by the MBTI, and data collected through other sources that either supported or contradicted the emerging findings. Finally, the only use made of the scores was to further describe the study participants. MBTI scores for each participant are presented in Chapter IV, "The Participants and

APPENDIX A

Setting," to give readers additional information on each participant; some information may be gleaned from the group's scores when compared to nationwide scores of the past. For example, it is interesting to note that, as a group, half of the participants (7 of 14) had an "NT" temperament (which can be described as being very concerned about competency). In the wider population, only 12% would have an "NT" temperament.

This lack of fit between the data and the conceptual framework meant that the research questions were also inappropriate, as they were focused solely upon the role of the analyst in the needs assessment process. The original research questions were designed to work in tandem with the conceptual framework to describe and explain how people conduct needs assessments. At the beginning of the study, the broad research question to be examined was stated as: **What is the relationship between the individual conducting the needs assessment and the needs assessment process and results?** The following specific questions were proposed as initial guides to the study:

1. How do individuals conduct a needs assessment?
    a. What are the steps they take?
    b. What do they think about during the process and when?

2. What are the points in the needs assessment process at which value-based decisions are made?
    a. What are the decisions?
    b. What are the values in the decisions?

3. What patterns emerge as to the series of decisions individuals make in guiding the needs assessment process?

4. Is there a linkage between the decisions, needs assessment results, and more general behavioral indices such as personality traits?

APPENDIX A

These original questions were intended to strike a balance between being specific enough to provide a focus for the study while being general enough to allow for adjustments during the course of the study. Both the conceptual framework and research questions were constructed after a comprehensive review of the literature and extensive conversations with people familiar with needs assessment. However, as the study progressed through several cycles of data collection and analysis, it became apparent that the original research questions were not adequately answered and did not accommodate the emerging findings.

Several types of problems were occurring with the research questions. First, a number of questions could not be appropriately answered. For example, although data were gathered from a variety of sources and over a period of time, it was not possible to construct a reliable answer to question 1b. : "What do [the participants] think about during the process and when?" Second, other questions would have relied too heavily upon the investigator's own interpretation. Participants had difficulty in identifying their own decisions during the process, and the data were not comprehensive enough for the decisions to be reliably extracted. But most important, the research questions needed to be changed because they did not focus on areas that the initial data analysis indicated was important. Much more attention needed to be focused on needs assessment as a negotiation process between the analyst and the environment (other people and organizational

constraints) rather than as a product of the internal processes of the analyst alone.

One strength of qualitative research is that the employment of an inductive approach allows for changes to the study according to what is found in the data. Several months of data collection and analysis indicated that the original conceptual framework and research questions would not accurately represent what was going on in the setting. The investigator then began to revise the research questions and search for a conceptual framework that would be helpful in interpreting the data.

Thoughtful revision of the research questions (based on the data) eventually resulted in the research questions listed in Chapter I. The investigator conducted another review of the literature and consulted a number of experts on qualitative research in education, explaining her emerging findings and asking for leads on potential conceptual frameworks. Through this process, she discovered Argyris & Schön's work. The conceptual framework taken from Argyris & Schön (1974, 1978) was then adopted and tested in later phases of data collection and analysis. It was found that the conceptual framework not only accommodated the data and emerging findings, but also provided a structure to show the relationships among the findings and make the study results more comprehensible.

Thus, the original research questions and conceptual framework for the study were changed because the collected data did not support them. Because qualitative research allows for an inductive approach, the data were used to generate appropriate research questions. The

APPENDIX A

conceptual framework was selected because it allowed for an accurate description and explanation of the phenomenon of interest. Another review of the literature was performed in the process of revising the research questions and conceptual framework. Through continuing cycles of data collection and analysis, a gradual understanding developed that theories of needs assessment, as espoused by experts and the participants in the study, did not correspond with the theory-in-use that participants applied when conducting actual needs assessments.

APPENDIX B

Comparison of Four Major Discrepancy Models

APPENDIX B

Comparison of Four Major Discrepancy Models

The four most popular discrepancy models, those of Harless,

Mager, Rossett, and Kaufman are briefly described and contrasted below.

All of the following four models stress the need to make decisions on the

basis of data, and not to assume all problems can be solved by

instruction. However, they differ in emphasis and degree of detail.

Harless (1975) calls his model "front-end analysis." It is used

primarily in business and industry and contains the following six steps:[2]

I. FRONT-END ANALYSIS
  A. Narrow the problem area.
     1. Gather indicators, symptoms, effects.
     2. Group by similarity.
  B. Describe the problem.
     1. Define *mastery*. Define *actual.*
     2. Compare the two.
     3. Describe the deviation. ("deficiency," "problem")
  C. Hypothesize causes.
     1. Lack of skills/knowledges.
     2. Environmental deficiency.
     3. Motivational-Incentive deficiency.
  D. Test each hypothesis.
     1. Gather evidence for/against each.
     2. Describe the causes (or combination).
  E. Determine solution alternatives.
     1. Come to us.
     2. Go to them.
     3. Some combination of 1 and 2.
  F. Select best alternative.
     1. Define assumptions.
     2. Define decision-making factors.
     3. Determine weights of each factor.
     4. Determine value scale.
     5. Compare each alternative to each factor.
     6. Rank by weighted score.

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[2] This list is taken verbatim from Harless, J. H. (1975). An ounce of analysis is worth a pound of objectives. Newnan, GA: Harless Performance Guild, page 69.

APPENDIX B

His model defines the rest of the performance technology process as follows:[2]

II. PREPARE OBJECTIVES

    A. Terminal and en route outcomes.
    B. Criteria (measurement standards) and conditions.
    C. Givens and limits.

III. ANALYZE THE OBJECTIVES

IV. PREPARE THE REMEDY

V. TEST THE REMEDY

VI. IMPLEMENT

VII. FOLLOW UP

APPENDIX B

Mager & Pipe (1984) and Mager (1988) term their model "performance analysis" and present it in flowchart form:[3]

Figure 5.4

Performance Analysis Flowchart
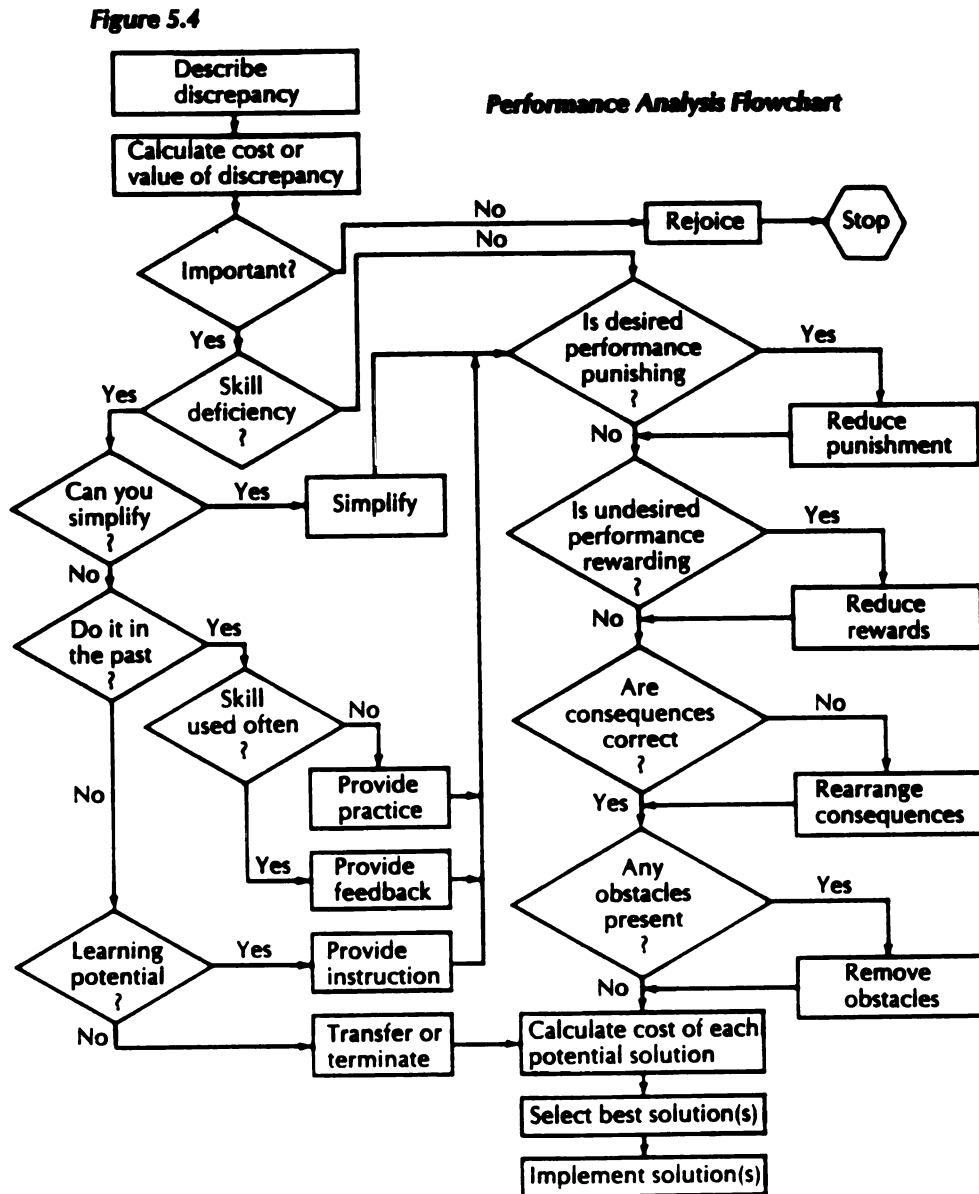
Figure 5

Mager's Performance Analysis Flowchart

[3] This flowchart is taken from Mager, R.F. (1988). Making instruction work: or Skillbloomers. Belmont, CA: Lake Publishing, page 39.

APPENDIX B

Both Harless' and Mager's models involve data collection and analysis to describe the problem or discrepancy, decide upon the cause, and select a solution. They differ slightly in the types of causes they describe and the amount of emphasis and detail in each step. They also assume that a single needs assessor can reliably complete the process.

Rossett's model emphasizes that comprehensive needs assessments collect and consider data for five different purposes. She is also more detailed about how to select appropriate methods for carrying out needs assessments. Rossett calls her model "training needs assessment" ("TNA"), reserving the term "needs assessment" for one of three TNA techniques. However, all three techniques comprise "needs assessment" according to the definition for this study. The relationship between the three techniques, the tools that can be used to accomplish the techniques, and the purposes for which training needs assessments are conducted are shown in Figure 6.[4]

TECHNIQUES	TOOLS	PURPOSES
Extant data analysis Needs Assessment Subject Matter Analysis	Interviews Observations Groups Surveys	Optimals Actuals Causes Feelings Solutions
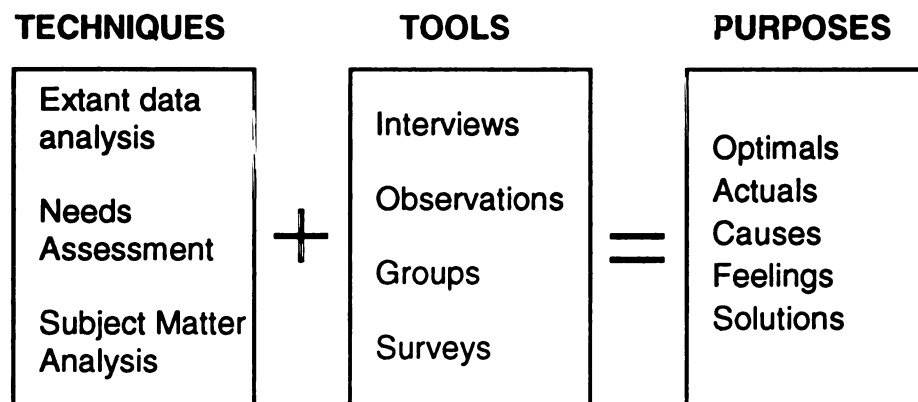
Figure 6

Rossett's Model of Needs Assessment

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[4] Figure 6 is taken from Rossett, A. (1987). Training needs assessment. Englewood Cliffs, NJ: Educational Technology Publications, page 24.

APPENDIX B

Rossett's process of training needs assessment consists of six

steps:[5]

I.   Assess the Context

     A.   Who does or doesn't want problem solved.
     B.   Existing performance problem or innovation.
     C.   Sources and resources available in organization.
     D.   Who must be kept informed of TNA.

II.   Determine Purposes

     A.   Optimal performance
     B.   Actual performance
     C.   Key sources' feelings about
          1.   The topic
          2.   Training on the topic
          3.   Priority of the topic
          4.   Confidence surrounding the topic
     D.   Causes
          1.   Lack of skill or knowledge
          2.   Environmental barriers
          3.   No, few, improper incentives
          4.   Lack of motivation
              a.)   Value
              b.)   Confidence
     E.   Solutions
          based on identified causes

Causes	Solutions
Lack of skill or knowledge	Training Job aids Selection
Flawed environment	Improved tools Improved forms Workplace and workstation redesign Job redesign
Improper incentives	Improved policies Better supervision Improved incentives
Unmotivated employees	Training Information Coaching Better supervision

---

[5] This list is a composite from several of Rossett's works. It is most heavily reliant upon Training needs assessment (1987) and "Needs assessment" in Instructional technology: Past, present, and future (1991).

APPENDIX B

III. Select Techniques and Tools

    A. Techniques - influenced by purposes
       1. Extant data analysis
       2. Needs assessment
       3. Subject matter analysis and task analysis
    B. Tools - influenced by context
       1. Interviews
       2. Observations
       3. Group meetings
       4. Questionnaires

IV. Develop a TNA Plan

    A. A guide of whole process that remains open to change
    B. Based on context and purposes

V. Develop Stage Planner(s)

    A. The detailed plans for each stage of inquiry
    B. Each stage developed AFTER previous stage completed
       (depends on what was learned in previous stage)

VI. Communicate Results

    A. During TNA
       1. Who must be kept informed?
       2. Maintaining positive public relations
    B. After the TNA
       1. To provide information on results of purposes
       2. To promote support for results/intended solution
       3. To clear up errors
       4. To create a history of the TNA

Rossett's model pays more attention to the politics of conducting a needs assessment within a particular organization. Like Harless and Mager's, this model assumes the needs assessment is most often conducted by a single individual; however, Rossett's model places greater emphasis on involving others in the process, gathering information from stakeholders, and keeping those in power informed.

APPENDIX B

In contrast to the other three models, Kaufman's model distinctly separates needs assessment (which he defines as the process of identifying and prioritizing needs) from needs analysis(which he defines as identifying the causes and potential solutions of the prioritized need). Kaufman's model also places greater emphasis on the involvement of others in the process. At least six of the ten steps involve the active participation of "partners." Kaufman's model also places the greatest amount of emphasis upon the purpose of the needs assessment. His "Organization Elements Model" identifies three levels at which planning can be conducted: the individual, the organization, and society; he strongly urges that needs assessments be conducted at the level which contributes to society as a whole. Kaufman's model is the only one that requires the needs assessor to consider for whom the needs assessment is being conducted (see Step II).

Kaufman's model of needs assessment consists of 10 steps:[6]

I.   Decide to plan using needs assessment data

II.   Select needs assessment and planning level
    A. Micro-individual (lacks integration)
    B. Macro-common organizational goals (integrated but org. may have questionable goals)
    C. Mega-society (unites individuals in pursuing org. goal that also contributes to society)

III. Identify needs assessment partners
    A.   Implementers
    B.   Recipients
    C.   Society
    D.   Have a representative group

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[6] This list is taken primarily from Kaufman, R. (1986). Assessing needs. In M. E. Smith (Ed.), Introduction to performance technology, Vol. 1 (pp. 25-59). Washington, DC: National Society for Performance and Instruction.

APPENDIX B

IV. Obtain participation of partners

V. Obtain acceptance of needs assessment and planning level

VI. Collect needs data
A. Internal and external

Internal	External
Referent is existing goals of organization	Referent is success (survival and contribution) of "product" outside the organization
Beta needs assessment	Alpha needs assessment to determine needs and utility
Most often done	Rarely done
Results in perpetuation of status quo	

B. Sensed needs and hard data
C. Collect data in appropriate areas of Organizational Elements Model (OEM) (quasi-needs assessment=1&2, internal na=3&4, external=5)
   1. Inputs - available resources: people, time, money, etc.
   2. Processes - procedures, methods, means
   3. Products - intermediate results within organization
   4. Outputs - products to outside world
   5. Outcomes - impact on society

VII. List identified and documented needs

VIII. Place needs in priority order
   A. Consider cost of reducing/eliminating need & cost to ignore need
   B. Cost in terms of $ and quality of life

IX. Reconcile disagreements

X. List problems (selected needs to be resolved) and obtain agreement of partners

APPENDIX C

Sample Fellowship Schedules

APPENDIX C

Michigan State University

PRIMARY CARE FACULTY DEVELOPMENT FELLOWSHIP PROGRAM
September 8-18, 1992

Monday 7	Tuesday 8	Wednesday 9	Thursday 10	Friday 11
Labor Day	8:00-9:00 a.m. Orientation Breakfast 9:00-12:00 noon Lessons Learned from Effective Teachers E-4 Fee Hall	8:30-11:30 a.m. Research Mentor Group Meetings A213 & 216 / Curriculum Dev. Mentor Group Meetings E2 & E4 11:45-1:30 p.m. Faculty Lunch A216	8:30-9:30 a.m. Anatomy of An Article E-4 Fee Hall 9:45-12:00 noon Clinical Evaluation E-4 Fee Hall	8:30-11:30 a.m. Teaching Psychomotor Skills E-4 Fee Hall
Labor Day	1:00-5:00 p.m. Lessons Learned from Effective Teachers E-4 Fee Hall 6:00 p.m. Fellowship Picnic Lake Lansing	1:30-4:30 p.m. Clinical Teaching in the Ambulatory Setting E-4 Fee Hall	1:00-4:00 p.m. Clinical Evaluation E-4 Fee Hall 4:30-5:00 p.m. Searching the Medical Literature	12:00-3:00 p.m. Teaching Psychomotor Skills E-4 Fee Hall 3:00-4:00 p.m. Evaluation & Debriefing

Monday 14	Tuesday 15	Wednesday 16	Thursday 17	Friday 18
8:30-11:30 a.m. Presentation Skills E-4 Fee Hall 12:00-1:00 p.m. Survey Workshop A216	8:30-12:00 noon Developing Medical Curricula E-4 Fee Hall	8:30-11:30 a.m. Research Mentor Group Meeting A213 & A216 Curriculum Dev. Needs Assessment E2 & E4	8:30-11:30 a.m. Providing Constructive Feedback E-4 Fee Hall 11:45-12:45 p.m. Faculty Lunch	8:30-11:30 a.m. Practice Teaching Assignment E-4 Fee Hall
1:00-4:00 p.m. Creating Visual Materials E-4 Fee Hall 4:00-7:00 p.m. Visual Preparation Laboratory	1:00-2:00 p.m. Study Design Alguire 2:15-4:00 p.m. Project Management E-4 Fee Hall 4:00-7:00 p.m. Searching the Medical Literature - Lab	1:00-4:00 p.m. Teaching Rounds. Morning Report and Group Discussion E-4 Fee Hall 4:15-5:00 p.m. Electronic Mail Workshop	1:00-4:00 p.m. Individual Meeting with Mentor Teaching Assignment Preparation Laboratory E-4	12:15-2:00 p.m. Practice Teaching Assignment E-4 Fee Hall 2:00-3:00 p.m. Evaluation & Debriefing

APPENDIX C

Michigan State University

PRIMARY CARE FACULTY DEVELOPMENT FELLOWSHIP PROGRAM

November 2-6, 1992

Monday 2	Tuesday 3	Wednesday 4	Thursday 5	Friday 6
8:30-9:00 a.m. Overview E-4 Fee Hall	**8:30-9:30 a.m.** Instruments & Measurements E-4 Fee Hall	**8:30-11:30 a.m.** *Research* Mentor Groups A213 & A216 East Fee Hall	**8:30-9:30 a.m.** Interpretation of Results E-4 Fee Hall	**8:30-9:30 a.m.** Risk Assessment E-4 Fee Hall
9:00-11:30 a.m. *Research* Assignment Review A216 & A213 East Fee Hall *Curriculum Dev.* Assignment Review E-2 & E-4 Fee Hall	**9:45-12:00 noon** *Research* Designing Instruments A216 East Fee Hall *Curriculum Dev.* Instructional Objectives & Enabling Content E-4 Fee Hall	*Curriculum Dev.* Selecting Evaluation Strategies E-4 Fee Hall	**9:45-12:00 noon** Major Project Report Prep Lab A216 Fee Hall Individual Meetings with Mentors **12:15-1:30 p.m.** Faculty Lunch A216 Fee Hall	**9:45-12:00 noon** Major Project Reports A216, E-2 & E-4 Fee Hall
1:00-4:00 p.m. *Research* Subjects A216 East Fee Hall *Curriculum Dev.* Determining Curr. Goals & Content E-4 Fee Hall	**1:00-4:00 p.m.** *Research* Planning Data Analysis A216 East Fee Hall *Curriculum Dev.* Selecting Instructional Strategies E-4 Fee Hall **6:00 p.m.** Group Dinner	**1:15-4:30 p.m.** Introduction to Statistics Part I E-4 Fee Hall	**1:15-4:30 p.m.** Introduction to Statistics Part II E-4 Fee Hall **4:30-5:30 p.m.** Statistical Software Packages for Macintosh & IBM	**12:30-2:00 p.m.** Major Project Reports A216, E-2 & E-4 Fee Hall **2:00-3:00 p.m.** Evaluation/ Debriefing E-4 Fee Hall

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APPENDIX C

tentative 1/20/93

Michigan State University

PRIMARY CARE FACULTY DEVELOPMENT FELLOWSHIP PROGRAM

February 1-5, 1993

Monday 1	Tuesday 2	Wednesday 3	Thursday 4	Friday 5
8:30-11:30 a.m. Administration and Management Skills for Academic Physicians E-4 Fee Hall	**8:30-11:30 a.m.** Administration and Management Skills for Academic Physicians E-4 Fee Hall	**8:30-11:30 a.m.** Approaching the Problem Trainee E-4 Fee Hall	**8:30-11:30 a.m.** Grant Writing Skills E-4 Fee Hall	**8:30-9:30 a.m.** Working With Tests E-4 Fee Hall **9:45-12:15 p.m.** Presenting a Scientific Paper E-4 Fee Hall

Monday 1	Tuesday 2	Wednesday 3	Thursday 4	Friday 5
1:00-4:00 p.m. Administration and Management Skills for Academic Physicians E-4 Fee Hall	**1:00-4:00 p.m.** Administration and Management Skills for Academic Physicians E-4 Fee Hall	**1:00-4:00 p.m.** Writing for Publication Part I _Curriculum Development Group_ E-2, E-4 & A217 Fee Hall _Research Groups_ Mentor Groups A213 & A216 **6:00 p.m.** Group Dinner	**1:00-4:00 p.m.** _Curriculum Development Group_ Developing Curr. Implementation and Evaluation Plans E-4 Fee Hall _Research Group_ Individual Meeting A213 & A216 **4:15-6:00 p.m.** Individual Meeting (Curr. Dev. Group only) E-2 & E-4 Fee Hall	**12:30-1:45 p.m.** Presenting Scientific Posters E-4 Fee Hall **1:45-3:00 p.m.** Evaluation/ Debriefing E-4 Fee Hall

APPENDIX C

————— Michigan State University

PRIMARY CARE FACULTY DEVELOPMENT FELLOWSHIP PROGRAM

June 7-11, 1993

Tuesday 8	Wednesday 9	Thursday 10	Friday 11
8:30-8:45 a.m. Announcements E-4 Fee Hall **8:45-11:30 a.m.** Round Table Discussions Session I E-2, E-4, A-216 Fee	**8:30-11:30 a.m.** Organizational Diagnosis and Career Planning E-4 Fee Hall **11:30-1:30 p.m.** Former Fellows Panel & Luncheon E-2 & E-4 Fee Hall	**8:30-11:30 a.m.** Round Table Discussions Session II E-2, E-4, A-216 Fee Hall	**8:30-12:15 p.m.** Primary Care Research and Development Conference Kellogg Center **12:15-2:00 p.m.** Luncheon Keynote Address	**8:30-12:15 p.m.** Primary Care Research and Development Conference Kellogg Center **12:15-2:00 p.m.** Luncheon Keynote Address Graduation
12:30-4:00 p.m. Conference Presentation Practice E-2, E-4, A-216 Fee **6:00 p.m.** Regional Cuisine Picnic	**1:30-4:00 p.m.** Leadership Principles E-4 Fee Hall	**1:00-4:00 p.m.** Academic Physician Stress and Burnout E-4 Fee Hall	**2:00-4:00 p.m.** Writing for Publication Part II Vista Room Kellogg Center	**2:00-3:30 p.m.** Evaluation/Debriefing Vista Room Kellogg Center

APPENDIX D

Consent Forms

APPENDIX D

Consent Form

I agree to participate in this qualitative research study on needs assessment. I understand that this research is partial fulfillment of Josephine Csete's doctoral degree from the College of Education at Michigan State University. The purpose, procedures and potential risks and benefits have been explained to me, and I understand that I have agreed to do the following:

1. Allow the researcher to observe me during on-campus sessions of the fellowship.

2. Allow the researcher to collect documents generated by or about me for the fellowship. These include my application materials, written assignments, and copies of workshop exercises.

3. Allow the researcher to collect data in the form of informal and formal interviews with me.

4. Permit the researcher to audio tape formal interviews and selected observation periods with my knowledge.

I also understand that:

1. My participation in this study is voluntary and not required for successful completion of the fellowship.

2. With the exception of a limited number of formal interviews, my participation in this study involves little or no extra time commitment on my part.

3. After I have had the opportunity to review my results on the Myers-Briggs Type Inventory, the researcher will be requesting my written consent to use my results as data in the study.

4. Potential benefits to me from participating in the project include the opportunity to gain insights into my own thinking and practice and how they impact tasks I undertake (specifically, needs assessment).

And finally, I understand that:

1. Data collected will be used in Ms. Csete's dissertation and may also be used in articles, presentations or instruction.

2. All data collected will be kept confidential and reported without individual identification.

3. I can choose not to answer any question or discontinue my participation in the study at any time.

Signature_____ **Date**_____

APPENDIX D

Consent Form

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1. Allow the researcher to observe me during on-campus sessions of the fellowship.

I also understand that:

1. I am not one of the primary subjects (who are in the curriculum track of the fellowship). My participation has been requested because my interactions with the primary subjects can contribute to understanding the context of the observations.

2. My participation in this study is voluntary and not required for successful completion of the fellowship.

3. My participation in this study involves little or no extra time commitment on my part.

4. I have the right to request any data already recorded about me to be removed from the study's records.

And finally, I understand that:

1. Data collected will be used in Ms. Csete's dissertation and may also be used in articles, presentations or instruction.

2. All data collected will be kept confidential and reported without individual identification.

3. I can choose not to answer any question or discontinue my participation in the study at any time.

Signature_____   **Date**_____

APPENDIX D

Consent Form : Use of MBTI Results

In September of 1992 I agreed to participate in Josephine Csete's qualitative research study on needs assessment. I have had the opportunity to review my results on the Myers-Briggs Type Inventory. I understand that, as she had indicated at the start of the study, Ms. Csete is now requesting my written permission to view my results on the Myers-Briggs Type Inventory, and may use my results as data in her study.

I also understand that:

1. My participation in this study is voluntary and not required for successful completion of the fellowship.

2. Data collected will be used in Ms. Csete's dissertation and may also be used in articles, presentations or instruction.

3. All data collected will be kept confidential and reported without individual identification.

4. I can choose not to answer any question or discontinue my participation in the study at any time.

Signature_____**Date**_____

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2. Data collected will be used in Ms. Csete's dissertation and may also be used in articles, presentations or instruction.

3. All data collected will be kept confidential and reported without individual identification.

4. I can choose not to answer any question or discontinue my participation in the study at any time.

__Signature_____ __Date_____

APPENDIX E

Interview Guides

APPENDIX E

To: *Name Here*
From: Josie Csete

Phone Interview about Needs Assessment

Dear *Name*,

Thanks once again for helping me out with my study of Needs Assessment. On the next page you will find the questions you can think about and jot answers to in preparation for **our phone conversation at *time and date.***

Please keep in mind that your responses will remain confidential, and your honest and candid answers will greatly enhance the quality of the study's results and (I hope) the implications for how needs assessment is taught and practiced in the future.

- ❑   This interview should take no more than 30 minutes of your time (15 - 20 minutes is more likely).

- ❑   In order to avoid "contamination" of the study, I will refrain from making suggestions or comments on your needs assessment during the time you are responding to the questions.

- ❑   But, you may solicit my thoughts or assistance after the interview has been completed.

In addition to helping me, I hope that your participation also provides you with an opportunity for reflection on where you are and want to go next in your project.

Feel free to contact me if you would like my assistance with your needs assessment or project...after all, I owe you one! I can be reached at my OMERAD office (517) 353-9400, or at home (313) 229-8457.

I'll be talking to you soon,

APPENDIX E

Thoughts on needs assessment...

Name: *Name* , M.D.   Date:_____

1.   **What** have you done so far on your needs assessment? (thoughts, plans made, techniques employed...it would help me if you presented your points chronologically)

2.   **Why** have you done these things?

3.   What **problems or concerns** are you experiencing? (tell me about those already resolved, the ones happening right now, some you think may be coming)

4.   Have there been any **surprises or changes** from how you thought things would go back in September?

5.   What have you **found out** so far? (include results or current guesses at what the results might be)

Note: You need not answer these questions in the given order. For example, you may wish to combine what you have done and why (questions #1 & #2) when you tell me about the steps you have gone through so far.

Phone Interview Protocol

Subject: _____   Date and Time of Call: _____   Phone #: _____

STEP I: Preparing for the Interview

A.   The call to set up interview

1.   Reintroduce self

2.   Purpose of call:

remember I mentioned a phone interview about how your NA is going?

key component of my study

want to set one up - next few days

30 minutes maximum

time convenient for you (at least 30 min. available)

number for me to call

3.   Guidelines and Process

will fax questions to be considered in advance, prefer fax same day or before?

I will avoid suggestions or comments during interview

have time at end for them

all information confidential, honest and candid answers enhance quality of study

I really want to know what's really going on!

4.   Confirmation

interview date and time: _____

number/place to call: _____

fax to be sent: _____

fax number/place: _____

Subject: _____

5. **Thanks**
   appreciate your time and cooperation
   talk to you _____

B. **I send fax at appointed time**

C. **I review person's file prior to calling**

STEP II: Beginning the interview

Starting Time: _____

A. **Ready to talk?**

   1. If not, when can we? (date and time, preferably same day)

B. **A few reminders before we begin**

   This is confidential
   I'm not taping, but taking notes, so may periodically ask you to slow down
   I will avoid responding until after interview completed
   then I'll be happy to talk about anything you'd like
   should take 30 minutes max.
   got the fax?
   thought about it?
   I went over your materials

C. **Any questions before we begin?**

Subject: _____

APPENDIX E

STEP III: Conducting the Interview

Purpose	Prompt	Response
#1 __What__ have you done so far?	_____ thoughts? _____ plans made? _____ techniques used? _____ sources? _____ order? _____ when started? _____ currently thinking about? _____ planning to do?	

Page 3

Subject: _____

APPENDIX E

Purpose	Prompt	Response
#2 __Why__ have you done these things?	What have you learned? What have you based decision on? How important? Most important of all?	

Page 4

Subject: _____

APPENDIX E

Purpose	Prompt	Response
#3 **What problems are you encountering?**	_____ already resolved? _____ right now? _____ coming? _____ ones I saw in file	

Subject: _____

APPENDIX E

Purpose	Prompt	Response
#4 **Have there been any <u>surprises or changes</u> from how you thought things would go back in September?**		

Subject: ___

Purpose	Prompt	Response
#5 **What have you found out so far?**	____ results? ____ current guesses?	

Subject: ____

QUESTION #6

Confidentiality, honesty important

A.   How did you prepare for this interview?   Time spent?

B.   Your location on NA continuum

On a scale of 1 to 10....

10 = NA is wonderful, should be done when developing all curricula
1 = NA is ridiculous, only doing this because a required assignment

C.   To what degree are you carrying this out?

D.   Why or why not?

E.   How much time have you spent on your NA so far?

How much time will you put in?

Subject: _____

STEP IV: CONCLUDING THE INTERVIEW

Time: _____

A.   This concludes my interview, thanks for your time and assistance
        may make brief call if notes unclear

B.   Any questions or comments on the interview, or about your NA?

C.   Next Steps

1.   Be prepared first day back to present on NA in mentor group meetings
        bring copies of report for whole group
        Consult NA materials: assignment
                                            criteria
                                            examples of report

could you bring me copies of things you developed, like surveys or interview questions?

2.   Call me or your mentor if you want, before November session

D.   Thank you again for your time and thoughts, appreciate your contribution

Finish Time: _____

Subject: ___

APPENDIX E

February Session Questions

Name: _____   Date: _____

Place/Duration: _____

1.   Did you do any more related to NA after November 2?

I ask about ....

2.   Does anything stand out as something you learned from NA (results and/or process)?

       new ideas?
       confirmations?
       change of direction?

3.   Did the NA influence what you decided to do? If so, in what ways? If not, why not?

4.   Would you do a NA again? Under what conditions? What parts?

5.   What is your estimate of your level of effort

       a.) on the NA?

       b.) compared with fellowship?

6. Can I Use your MBTI score?

APPENDIX F

Peer Observer's Description

Primary Care Faculty Development Fellowship Program: One Observer's Description of the People and Organization

Karen Lienhart • April 14, 1993

Josie Csete invited me to help readers of her dissertation to understand the people involved and the organization of the Primary Care Faculty Development Fellowship and, more specifically, the Curriculum Development Track within the fellowship program.

Several things may help one to interpret my observations:

(1)   I have been on the faculty of the fellowship program since December 1985. As an academic specialist in Instructional Development, I teach workshops on design/production of visual materials for teaching and research presentations, and assist as a small group facilitator in teaching skills and other workshops. As part of the faculty team, I generally pitch in and "do what needs to be done" as far as room set-up and clean-up, running video cameras for fellows' teaching and other presentations, running to the copy machine for consultants, selling parking tokens, etc.

(2)   I have been involved in design, implementation and ongoing revision of the Curriculum Development Track since it was first introduced in the 1989-90 fellowship year. In September 1991, I became Director of the Track. In that role, I am responsible for assuring clarity and consistency in our communications to fellows; bringing together faculty to make decisions about our curriculum development model, process and workshops; and addressing fellows concerns and suggestions. With another faculty member, I serve as a mentor for 3-4 fellows per year. I developed and have taught the Needs Assessment workshop in the Track since 1989.

(3)   My Master's degree is in Adult Education, so I tend to have a learner-centered focus on education and instructional development.

(4)   As a Master's level Academic Specialist, I consider myself to be (even after 7 years) a "junior" faculty member along with our graduate assistant faculty. I don't sense or intend to communicate here any stigma being attached to my position. My colleagues here seem to understand my personal decision to

not pursue a doctoral degree, despite the fact that a progressive academic career in medical education would require a Ph.D. and more scholarly/research activity. I'm comfortable here and enjoy a number of advantages: (1) the friendly, team-oriented environment; (2) the flexibility I'm given as a mother with small children; (3) the freedom to become involved in a variety of instructional design and materials development projects here in the college and as a consultant; and (4) the chance to keep learning by doing instructional design, and learner and program evaluation with colleagues from varied backgrounds and disciplines.

The structure of my observations will be:
- Who are the Fellows?
- What is life like for the Fellows?
- Curriculum Track Fellows
- Fellowship Faculty & Relationships with Fellows

Who are the Fellows?

The post-doctoral fellows in the Primary Care Faculty Development Fellowship program are general internists, general pediatricians and family physicians who are new faculty members in medical school departments and residency programs throughout the United States and Puerto Rico.

Our program is the only post-doctoral training program we know of with a "primary care" emphasis, putting together trainees from the three different specialties. We began this approach in 1986. (Prior to then, the Family Medicine Faculty Development Fellowship Program had been funded since 1978; the fellowship structure was well developed and faculty/staff in place to deliver it. In 1985, funding was received to do a very similar program for academic general internists and general pediatricians.) In the planning meeting where it was decided to run the two programs together, it was interesting to hear our physician faculty's ideas about whether or not it would work. The two family physicians, two internists and one pediatrician in the room seemed to come to the conclusion that, as "generalists" and "gatekeeper" specialists in the health care system, the three specialties have much in common: "We're all equally the low-folks on the totem pole." As medical school faculty they share many of the same concerns, such as poor visibility and/or credibility due to

lack of strong research bases in the general specialties; funding issues due to lack of income from advanced procedures (like those of surgery, radiology or cardiology, for example); the need for and desire of clinical faculty to spend their time seeing patients and teaching students/residents, instead of pursuing scholarly activities that would lead to promotion and tenure within university systems.

Seven groups of "primary care" fellows have now come together, and they seem to have drawn the same conclusions as our physician faculty did in 1986. The three specialties have a lot in common. Our only problems have been with pediatricians feeling slighted when there were "not enough pediatric examples" used in workshops; and a mismatch when our pediatrician faculty member tried to mentor a fellow doing geriatrics research.

The fellows work as full-time faculty members in medical school departments, teaching students and residents in a variety of modes: as lecturers or discussion leaders in courses or conference series; as clinical preceptors doing one-on-one teaching with individual learners in their clinics; as ward attendings in hospital settings where they supervise learners and lead rounds and morning report sessions. In addition to teaching, their positions usually require them to develop courses and clinical learning experiences such as clerkships or rotations. They also serve on department and college committees, are often expected to "do research" (especially if they are in internal medicine or pediatrics), and are committed to heavy clinic loads—seeing patients and bringing in clinical fees for their departments.

Though it has been a recognized component of family medicine since that specialty was founded in the late '60's, the concept of "faculty development" in medicine is still relatively new. Like other professionals, physicians have had a tradition of learning skills by watching other physicians, and teaching and research skills typically fall into this category. There has also been a philosophy that "I had to suffer so you can too," which has slowed down change in medical education. In addition, there is an attitude of some physicians that "only another physician can teach me anything." This attitude tends to be more prevalent among general internists and pediatricians, but can still be discovered among family physicians, even though the specialty prides itself on being the interdisciplinary team players of medicine.

APPENDIX F

Other fellowships do exist, but they are different from ours. Research or subspecialty fellowships (for example, Geriatrics or Sports Medicine fellowships in Family Medicine) generally require a fellow to move to a location for a year or two. While there, the fellow teaches, sees patients, and learns to do research by being mentored by senior faculty. Our "short-term" fellowship model is unique in that the fellows remain in their current positions and come here for only 5 weeks. Our workshop sessions are also different; indeed, some fellowship programs send their fellows here for more structured training in the various academic skills.

Fellows are paid a stipend of $7050 (1992-93) to attend the fellowship program. Three stipend checks are distributed at the end of the September, February and June sessions. This stipend is paid through our Public Health Service grant; such support is typical for postdoctoral fellowship programs of this sort.

My perspective on the fellows is that, to become physicians, these people have all been successful in school environments throughout their lives. I tend to perceive our fellows as being even more successful and comfortable with traditional learning situations, by virtue of the fact that they have been invited to stay on (often in programs they have graduated from) and have chosen to stay and pursue careers in academic medicine.

What is life like for the Fellows?

The fellows come to the campus for a total of five weeks during the academic year (2 weeks in September, and 1 week each in November, February and June). At their home institutions, their work life goes on as described above, but in addition they must complete fellowship reading and other assignments, and complete their Major Project—research, curriculum development, or preparation of a proposal for either a research or a training grant. For all fellows, it is a hectic and stressful year. It amazes me that some fellows manage to do all this while they have babies, raise children, get promotions to positions with more responsibility, continue to care for their patients, go through drastic organizational changes in their departments, and other typical life events. Sometimes I see these folks as crazy; but generally I have a great deal of respect for what they have chosen to do with their lives.

APPENDIX F

Fellows and their supervisors (department chairs or directors of their clinics or programs) sign two forms, an acceptance of the fellowship appointment and a Major Project Contract form, both of which spell out our expectations for the fellows' work during the year-long program. We strongly recommend (and state in the forms) that fellows be allowed 10-20% release time to work on their major projects during the fellowship year, in addition to the 5 weeks they are on campus. For some fellows, this release time is easier to talk about than actually get.

While on campus, each group of fellows develops a unique group dynamic. In some groups, one or two leaders emerge. In others, various sub-groups will form. Sometimes, "outliers" who seemingly have nothing in common will come together because the other fellows pretty much steer clear of them. In general, I would describe the "outlier" fellows as individuals who are abrasive in the classroom setting as well as in social settings and informal conversations. Behaviors would include monopolizing discussions or conversation, verbally attacking presenters and other fellows in workshops, or not being open to new ideas or other perspectives. We seem to get at least one fellow like this every year.

Most current fellows and graduates of the program see the fellowship as an opportunity to form long-term collegial relationships and friendships with people similar to themselves. The chance to interact with physicians from similar environments and with similar interests is one of the most significant benefits of participating in the program.

Fellows from out of town stay in blocks of rooms at a local hotel. After the first session, fellows usually choose another fellow or two to share a suite with. It used to be that the fellows would go out for dinner most evenings as a large group, but this has changed somewhat because the hotel suites have kitchens so fellows can do their own cooking. It seems that some of the more private fellows do their own dinner to avoid the large crowd outside of the fellowship sessions. It seems that this year's group was divided by "exercisers" who wanted to work out after the sessions and "eaters" who wanted to go for early dinner. Social sub-groups may have formed partially along these lines (e.g., the swimmers, the runners, the tennis players).

APPENDIX F

Each year we have one or two local fellows—faculty from the departments of Family Practice, Internal Medicine, Pediatrics, as well as Surgery and OB/Gyn in recent years. It is more difficult for these local fellows to connect with the other fellows as they have ongoing commitments both at home with their families and usually with patients and other work-related issues. Local fellows are not allowed to have beepers with them during fellowship sessions. However, they do receive messages through our program secretary and will often be on the telephone during workshop breaks and lunch-hours.

Fellows spend most of their days in E-4, a nice training room [but] in the basement of the building. During the workshops, the breakout groups will meet in other classrooms in the basement, or in two conference rooms on the second floor. Fellows also make use of computers in a center on the first floor or in faculty offices, as well as the medical education library and copy machines. The Grill is next-door to E-4, so fellows can get sandwiches for quick lunches or they go out in groups to nearby restaurants. Lunch times are usually scheduled from 11:30 – 1:30.

Breakout groups in the workshops are almost always assigned ahead of time by our Fellowship Administrative Assistant. The administrator usually provides a handout page with names of the small group members, faculty facilitators and the rooms where they will go. The administrator seems to do this with some sense for variety, mixing the three specialties, breaking up cliques, assigning fellows to facilitators other than their Major Project mentors. This practice surprised me when I first came here. It seemed odd that the workshop instructor wouldn't just divide people into small groups on the spot, and that there was a need for a facilitator to help each small group accomplish their tasks and assure flow of the discussion. I've since discovered that the fellows probably wouldn't put themselves into groups with a variety of different fellows.

I don't know if it's related or not, but throughout the fellowship week, fellows seem to sit in the same locations they selected on Monday morning. Years ago, I heard, our director switched name tents on a group of fellows mid-week, probably during the February session. Most the fellows simply picked up their name tents and moved them back to their customary place in the open-U.

APPENDIX F

The schedule during the fellowship weeks is **packed**, especially in recent years with the optional Computer Competency sessions that fellows can sign up for and attend early morning, during lunch time or late afternoon. Fellows also have to squeeze in times to meet individually with their Major Project mentor faculty, as well as other faculty with the fellowship and/or other faculty in the college with similar interests. It has become a concern that fellows need more time during the fellowship weeks to reflect on their learning during the workshops and simply relax and interact with their fellow fellows.

Curriculum Track Fellows

The option of doing an instructional design project for the fellowship Major Project requirement was available to fellows when I first joined the program in 1985. One Family Practice fellow was developing a geriatrics rotation for residents, which I helped review when I first came here. At that time, our Assistant Director had obtained a contract with the Division of Medicine, Public Health Service to develop a model curriculum for teaching research to general internists and general pediatricians. Most components of that model curriculum were piloted, improved and implemented in the fellowship program.

With the strengthening of the research training component of the program, many fellows who came in with a focus on teaching/instruction either abandoned the idea of doing instructional development or found ways to make their Major Projects "research" projects, by doing needs assessment type surveys or evaluating instructional interventions. We seemed to have a lot of fellows complete research projects having learned or verified that they "would never do research again." (I once tried to present this as a positive result of the research curriculum in a poster presentation at a national meeting; understandably, my colleagues convinced me that this would not be considered a positive result of the research curriculum.) Anyway, it was obvious that there was a selection problem. Academic primary care physicians, particularly those who work as faculty in community based residency programs with no strong linkages to university medical school departments or requirements for research productivity, needed to do projects which would be more appropriate for their

APPENDIX F

current and future careers. The Curriculum Track was developed in response to this need.

In the first three years, twenty-two fellows completed the Curriculum Track. The following table shows what specialties and sites they came from.

Fellowship Year	Curriculum Fellows	Specialties	Sites
1990	11	7 –Family Medicine 2 –Pediatrics 2 –Internal Medicine	2 –Community-based residency 6 –University-based residency 3 –Undergraduate
1991	5	3 –Family Medicine 2 –Pediatrics	3 –Community-based residency 2 –Undergraduate
1992	6	4 –Family Medicine 2 –Internal Medicine	2 –Community-based residency 1 –University-based residency 3 –Undergraduate
Totals	22	14 –Family Medicine 4 –Pediatrics 4 –Internal Medicine	7 –Community-based residency 7 –University-based residency 8 –Undergraduate

Of the 22 projects, two were developed as grant proposals and one was a resident evaluation system.

The fellows select a Major Project (and thus a fellowship track) based on their own interests and (hopefully) the needs of their institutions or programs. The choice is, for the most part, a personal choice. When fellows are accepted for the program, they are encouraged to begin thinking about what they would like to pursue for a Major Project. In July or August, each fellow receives a site visit by one of the fellowship faculty. Possible Major Project topics are discussed with each fellow and his/her supervisor at that time. In recent years, the decision about the Major Project has been pushed back from the September

(and even the November) sessions, so that relatively few (2-3 fellows in both tracks) are still undecided by the end of the September session.

When I conduct a site visit and a fellow is vacillating between doing research or curriculum development, I try to get them to think in terms of their academic career. My questions include: If you're in a tenure track position, or want to get one soon, will research be required for you to achieve tenure? Will you be appropriately rewarded for doing curriculum development? This Major Project can help fellows achieve something they've been given responsibility for already (e.g., developing an obstetrics curriculum for family practice residents); it can also be a first step in building their career (e.g., a descriptive study that might lead to other research questions and studies in a certain area that you could claim for your own). After the fellow implements the course or clerkship developed during the fellowship year, he or she can evaluate and publish articles about the curriculum's effectiveness—or the effectiveness of specific innovations within the curriculum. The fellow's career might follow a path of becoming the education expert within his/her department.

In looking at a list of past projects, I see all of these reasons for fellows choosing to do Curriculum Development. However, most often, fellows have accepted responsibility for "covering" certain aspects of their program's curriculum. They use the fellowship training and requirement to meet a work commitment. Some fellows are also "on a mission". These fellows are often very passionate about certain knowledge or skills areas, and they are determined that their residents or students should know this stuff and put it into practice. Examples of such projects have included health care for homeless patients; colposcopy; HIV assessment and management for primary care pediatricians; preventive medicine; and the impact of economics on health care. These fellows have often already lobbied and/or fought to get their topic accepted and part of their program's agenda.

There are two particularly difficult aspects of the Curriculum Development Track for the fellows: the model we are teaching/forcing them to use, and the amount of writing the track requires.

With regard to the model, we have been developing and refining it for four years—and prior to using it in the fellowship, it had been initially developed and taught in workshop format by our director and another medical

education consultant in other settings with development teams of health professionals from a variety of disciplines (medicine, nursing, social work, etc.). The model continues to be unwieldy and cumbersome, and fellows (as well as faculty) can get lost in the trees, losing sight of the forest. No matter how hard we try to be consistent with our labels for the various components of the process (e.g., Needs Assessment, Goals, Learning Objectives, Content, Instructional Strategies, Learner Evaluation Strategies, Implementation Planning, Curriculum Evaluation, etc.) the jargon often obscures how practical and essential each component is.

In order to "show" their curricula, fellows have to put their design ideas in the form of a curricula **document**. These documents are reviewed by three experts (two content experts and one medical educator/curriculum specialist). Writing and putting these together can be a very painful process for the fellows, many of whom have undeveloped writing skills. Whereas the Research Track fellows "only" have to write a journal article about their study, our fellows spend the whole year writing about their curricula from several perspectives (students, reviewers, faculty colleagues will help them teach the course); they also have to prepare teaching materials, worksheets, checklists and tests; and they end by writing a journal article about their curricula.

As both the tracks have evolved, a number of assignments throughout the year have become required to keep the fellows on track with their projects. I recall being uncomfortable with the number and specificity of these assignments as we put them into the program about 3 years ago—after all, this is supposed to be adult learning and people should be allowed self-direction! However, the assignments have seemed to provide the fellows with essential deadlines for accomplishing specific parts of their projects. For the most part, this guidance and structure has been appreciated by the fellows. Being "experts" at succeeding in structured learning environments, most of the fellows readily follow instructions and meet the requirements. They have seemed to demand specific criteria and they tend to follow examples very closely.

The biggest challenge for me, as the Curriculum Track Director, has been to keep all these assignments clear for the fellows and to provide good, generic examples of their expected products. Sometimes an "ideal" report or document just doesn't match the fellow's specific project, or the purposes of their

communication. Some fellows can "make the leap"—easily generalizing the ideas to their specific project and needs. Other fellows just cannot get the connection.

This year, a surprising number of fellows opted for the Curriculum Track: 13 of the 20 fellows completing the program are doing curriculum development projects. Ten (10) of the fellows are developing residency training curricula and 3 undergraduate courses or clerkships. Most of the Curriculum Track fellows are from Family Medicine (9), with two fellows each from Pediatrics and Internal Medicine.

This year's increase may be due in part to current demands for curricular reform in medical education at both the undergraduate and residency training levels. These demands for change have to do with the need to train more physicians for primary care and to do that training in ambulatory settings. In order to be accredited, residency programs must also respond to new standards for their curricula (e.g., providing research training and experience in general internal medicine; and more sound resident evaluation systems in family practice). Some of the fellows' projects could be considered responses to those kinds of national needs, though a number of projects more appropriately fit the "fellow on a mission category", e.g. cultural diversity, women's medicine, practice management [the daily patient treatment aspect of it], adult education (an evaluation system), child development and parenting (from the "temperaments" perspective), and substance abuse.

As a group, I have detected no specific differences in this group from past years' Curriculum Track fellows. As in the past, our fellows on a mission (at least 6 of the 13) can either accept our direction and feedback as helpful in moving them forward toward their goals—or they can challenge our guidance as a roadblock to what they have in mind and will do despite (or "in spite of") our assistance. Most fellows seem to interpret our suggestions in a way that will suit their original vision (e.g., the fellow with a creative "method in search of a curriculum" will develop a curriculum to match the method he has envisioned). Others have followed the steps and examples very closely, and gotten lost dealing with the minutiae—thereby becoming frustrated that they have lost their original vision. Still others (fortunately for our sense of worth as faculty) have followed the steps, generalized the principles to their projects and settings,

and developed sound and successful programs that the fellows seem happy about too.

At this point in her study, I do not see that Josie's data collection has changed the fellows' approaches to their needs assessments or projects. When Josie first began to collect data about the fellows doing curriculum development projects by observing them in the September sessions, she was with them continuously for the two weeks. At the time, I recall thinking that, had I been a fellow, she would have bugged me. (Josie's enthusiasm for learning and for the importance of all the academic skills we are teaching can get pretty "thick" at times. She also frequently has and has a need to express an insight or "last word" in class discussions—even as an observer. Whether called for or not, these comments are usually on target and often valuable.) I was curious to observe whether the fellows actually felt any discomfort with her watchful presence, but I only heard one comment from a fellow in a small group, saying something like "Josie is looking at more than our needs assessments; she's making notes about us all the time." Another fellow who was originally assigned to Josie's mentor group, but reassigned due to communication issues, was older and somewhat ill-at-ease with the fellowship environment and demands; she may have been reacting to that youthful, "new Ph.D. candidate" affect that Josie can project.

As the year has progressed, with Josie's various telephone interviews and other data collection points, I get a sense that she has developed a nice rapport with most of the fellows. As she has been working on her dissertation project at the same time they have been working on their curriculum development projects, Josie seems to have established herself as the fellows' peer and colleague. By Josie's close attention and personal communication with the fellows, I think we as faculty will learn a lot more about the fellows' feelings and stresses in our program than we have realized in the past. With regard to their needs assessments, I haven't detected a Hawthorne Effect—the needs assessments I looked at were about the same quality and value that I have seen in past years. I'm looking forward to Josie's results, to get some ideas about what to do with the Needs Assessment Workshop and that piece of the curriculum track.

APPENDIX F

Fellowship Faculty & Relationships with Fellows

There are eleven regular (paid appointment) members of the fellowship faculty. These include three Ph.D. medical educators, one Ph.D. instructional development expert, one Master's level medical education specialist (me), three graduate assistants (currently 2 from Educational Systems and one from Sports Psychology), and three clinical faculty representing each of the specialty departments (Family Medicine, Internal Medicine, Pediatrics). Grant support for these faculty members varies from 10% for clinical faculty to 75-80% (for faculty in medical education). In addition to administrating the fellowship, developing and teaching workshops, facilitating group discussions, and mentoring fellows' Major Projects, all faculty members are involved in other projects as well as ongoing teaching and research in their respective areas.

When the fellowship first began and was much smaller, fellows were given a much more "kid gloves" treatment. The first year I was here, we still made arrangements to pick fellows up at the airport and shuttle them from their hotel to the hall on the first day of the fellowship in September. Instead of catering pastries and coffee from the Grill, we all baked muffins or nutbreads for breakfast the first day, brownies for the fellowship picnic, and took turns making (bad) coffee in our fellowship coffeepot. A story is told about one faculty member inviting the fellows home for chili and a lecture on theories of instruction (as a way to get better responses to the subject). The medical education faculty who initially developed and implemented the program recognized the importance of the social elements of the program. Until last year, we scheduled a Winter Carnival one afternoon during the February session—a special treat for fellows from Puerto Rico. Unfortunately, it was difficult to guarantee snow for sledding or even ice to skate on. We now have a dinner of some kind planned for one evening during each session, including a getting acquainted picnic in September, restaurant dinners in November and February, and a potluck in June where each of the fellows brings a dish representing their region or culture. Faculty members are encouraged to attend these social gatherings, but are not required.

The rest of our work lives and family commitments continue during the intense weeks that the fellows are here. Not surprisingly, we get reluctant to give much more time beyond our fellowship teaching and mentoring

APPENDIX F

commitments. Unless we have strong personal interests which attract us to certain fellows (such as one fellow from the Bronx who shared my interest in edible wild plants--the only fellow I ever invited home for dinner!) we pretty much stick with the business at hand, with the scheduled dinners and lunch time in the Grill for social interaction.

Sometimes the fellows have asked for more unstructured, social time with faculty, but it is time from the M.D., clinical faculty that they crave— people like themselves! Role models! This is not surprising. Our most dedicated and effective clinical faculty member does not socialize with the fellows at all—not attending any of the picnics or dinners. He sticks strictly to his committed role as a teacher and Major Project mentor. The faculty member from Pediatrics is a pediatrician by early training; his current work is as director of epidemiology—so his focus is on bringing in grants and building a new program/department here in the college. He is a good mentor for fellows doing research, but is socially unconnected. This year the family practice representative on the faculty (a Ph.D. epidemiologist) left in November for a new position; he was replaced by the new chairman of the Department of Family Practice who had heard about our program and wanted to be involved, but is truly overcommitted and is lucky to get here for mentor group meetings and occasional teaching. It seems that the best clinical faculty for the fellowship have been former fellows; they know where the fellows are coming from and can relate to them on a professional as well as personal basis.

As I have mentioned with regard to the Curriculum Track, above, the fellowship program has evolved a very tight on-campus schedule, as well as program expectations and assignments that have become very rigid in recent years. These aspects of the program have evolved in response to (1) former fellows' feedback requesting more training in certain skills/topic areas; and (2) our desire to see the fellows do high quality curriculum development projects or publishable research studies; and (3) the increased number of fellows (up from the 10 family medicine fellows who were originally in the program).

It's not surprising that this year's fellows have resented the amount of control the program exerts over them. Due to the nature of these physicians' professional roles, they are accustomed to being in control of their environment. This control issue extends to their ongoing learning activity and also their

APPENDIX F

interactions with the people who are there **to help them** (e.g., nurses, other clinical staff, specialist consultants, behavioral scientists). Another aspect of physicians' training and preparation for practicing medicine is that the medical education system is set up for them to succeed. One of the issues we discuss in a workshop on "Approaching the Problem Trainee," is that once a student if accepted into medical school, everything possible is done to make sure that student becomes an M.D. and a licensed physician. After the admissions process, no medical schools or residency programs I've heard of have systems in place designed to weed out people who may become undesirable physicians.

When we talk among ourselves about fellows' complaints or reasons for not coming through on an assignment, we often respond, "They're adults." This statement is often followed by something like: "They need to be responsible for themselves." or "They knew they would need this much time to do this assignment when they agreed to be in the program." We often do have a sense that the fellows don't appreciate the need for/past success of our systems of assignments, our efforts to "take care" of them, or the demands of our own academic careers outside the fellowship program.

But for the most part, the fellowship faculty (myself included) enjoy working with these bright, young professional people. The ones who are successful in the fellowship also become advocates of our program and are willing contributors to future programs. It's great to see them at national meetings and watch their careers take off with conference presentations, journal publications and regional/national recognition for their work. Fortunately, the number of difficult fellows—though they take lots of energy and can be very discouraging—is much less than the number of pleasant and competent fellows who go through the fellowship.

APPENDIX G

Workshop Handouts

NEEDS ASSESSMENT & ANALYSIS

Karen W. Lienhart, M.A.
September 16, 1992

A Workshop in the
CURRICULUM DEVELOPMENT TRACK

1.0 PLAN

2.0 DEVELOP

3.0 IMPLEMENT

4.0 EVALUATE

APPENDIX G
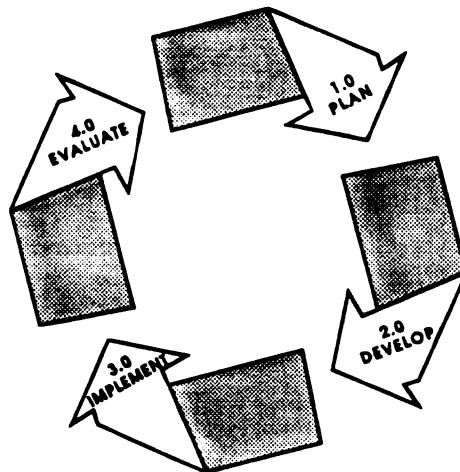
NEEDS ASSESSMENT & ANALYSIS

Goal of Workshop

To help you begin planning the needs assessment for your curriculum project

Objectives

By the end of the session, you should

- have considered the context and people affected by your curriculum project

- begun to plan your needs assessment, including

  •questions

  •sources

  •techniques

- have some idea how you might analyze and communicate your needs assessment results

Workshop Agenda

1. Clarify what we mean by needs assessment

2. Introduce our 4-Step Approach to needs assessment

3. Do Workshop Task #1: Context and People Affected

4. Review sample needs assessment questions

5. Do Workshop Task #2: Determine Your Questions

6. Review potential sources and techniques

7. Do Workshop Task #3: Determine Sources of Information

8. Do Workshop Task #4: Determine Techniques

9. Comments about conducting your needs assessment

10. Review needs assessment report assignment and criteria

APPENDIX G

NEEDS ASSESSMENT & ANALYSIS

Definition

Needs assessment is the systematic process of gathering information from a variety of sources, and using it to determine **if and what instructional solutions** will close the gap between what learners currently know or do, and what you would like them to know or do.

NEEDS

Actual

(Where learners are)

Optimal

(Where you wish learners could be)

Example of a Needs Assessment

"... A needs assessment consisting of literature review, interviews, a questionnaire and a chart audit was conducted in order to determine the necessity for and acceptance of an elective in preventive medicine at our institution.

Results of a computerized search for medical literature relative to preventive medicine curricula were used to generate questions for interviewing community leaders, faculty and medical students. The interviews were conducted by telephone and in person, with an informal non-threatening manner, and there was opportunity for follow-up questions and discussion to elicit specific local needs relative to disease prevention and health promotion. The community leaders included members of the local board of health, a local employer, members of a community health agency, and clergy. The faculty included community health center preceptors and administrative faculty. The students interviewed were representative members of the third and fourth year classes. The chart audit was done anonymously and with approval from the college institutional review board. Three hundred charts of 15 students of the class of 1991 were audited for documentation of activities related to disease prevention and health promotion. The students whose charts were audited also anonymously completed a questionnaire relating to their beliefs and practices in preventive medicine.

The medical literature contains useful recommendations for curricular content in preventive medicine. The Panel on the General Professional Education of the Physician on College Preparation for Medicine (GPEP) in its report, "Physicians for the Twenty First Century," recommends that the emphasis on teaching curative medicine for individuals be balanced by an equal emphasis on health promotion and disease prevention among individuals and groups of people.[2] The report further recommends that active student participatory learning methods be used in place of passive learning techniques, such as lecture. The *Academic Expert Panel to Review the Guide to Clinical Preventive Services* developed principles upon which change in preventive medicine curricula should be based.[3] Important principles include: implementing preventive services in a primary care outpatient experience, using the *Guide* as a resource, and basing the goals and content of the curriculum on the *Inventory of Knowledge and Skills Relating to Disease Prevention and Health Promotion.*[4]

The *Inventory* is an important component of curricular design in preventive medicine. It was developed by the Association of Teachers of Preventive Medicine under a cooperative agreement with the Centers for Disease Control. It serves as a guide to ensure that medical students

APPENDIX G

are introduced to topics and skills in prevention appropriate to medicine in the coming decades. the subject areas can roughly be grouped into three categories: preventive medicine in the physician's office, preventive medicine in the community setting, and preventive medicine as it relates health care system structure and function. Similar recommendations are called for by the Pew Commission in its "Agenda for Action" in the report Healthy America: Practitioners for 2005."[5]

Community leaders, faculty, and students were asked the following questions in interviews:
1. Is there a need for an elective in preventive medicine for fourth-year medical students?
2. Would you be supportive of such an elective?
3. What would you like to see included in the elective?

All parties stated that there was a need for the elective and that they would be supportive of it. Community leaders were enthusiastic about the prospect of having faculty and students study

and/or participate in their programs. Suggestions were offered for content of the elective that were consistent with recommendations from the literature. Students expressed interest in using the elective to explore specific areas in preventive medicine, such as putting prevention into practice in the primary care office and studying the economics of prevention. Administrative faculty noted the need for more four week electives that could be offered in two week segments.

The chart audit and student survey indicated that most preventive interactions with patients were considered important. Student often failed, however, to record the information in their chart notes. It is not clear from the audit whether the subject was not discussed between student and patient, or whether the student did not recognize the need to document information. A refinement of the student-patient encounter in order to place emphasis on the provision and documentation of preventive services is needed.

Adapted from: Robert C. Johnson, M.D. **An Elective for Fourth-Year Medical Students in Preventive Medicine,** MSU Primary Care Faculty Development Fellowship, June 1992

Why do a Needs Assessment?

People who put time and effort doing a needs assessment discover that the rest of their curricula seem to "fall into place" because they truly understand the problem, the situation, the learners and other factors which impact their decisions. The needs assessment process helps you

- affirm that the problem is an instructional need, not an organizational, motivational, administrative or attitudinal problem;

- focus time and effort on the right solution so that your valuable time and resources are used efficiently and effectively.

Doing a needs assessment also provides several important benefits to your curriculum development project.

- By involving other people at the start, you can achieve "buy-in", or a sense of **ownership** of the curriculum.

- In a world of limited resources, needs assessment also helps set **educational priorities**—determining which problems require attention now, and which can wait.
- Needs assessment can enhance your credibility. As you ask questions and gather information from people affected by the curriculum, you will be demonstrating the **systematic approach** you are now taking to address instructional problems and design effective programs.

APPENDIX G

What kind of information do I get from a needs assessment?

The goal of a needs assessment is to obtain facts, opinions and ideas about:

- your **learners' current job performance and where they work**

- **desired performance levels or results**—what your learners should be able to do

- **causes**—what your learners and others think is causing problems with job performance

- **solutions**—what your learners and others think might solve the problems (Important: the right solutions will not always be education or instructional intervention.)

- **impressions, reactions, opinions and priorities** of learners—reactions to the situation, to the topic and to past training experiences; what they consider to be their most urgent and least important educational needs

- **impressions, reactions, opinions and priorities** of others who will be involved or somehow affected by the curriculum—such as administrators, faculty, patients, etc.

Our 4-Step Approach to Needs Assessment

1. Consider the **context and people affected** by the curriculum.

2. **Plan** your needs assessment. Decide

   A. what **questions** to ask

   B. who to ask/what to look at **(sources of information)**

   C. how to ask them **(techniques)**.

3. **Conduct** your needs assessment.

4. **Analyze and communicate** your results.

APPENDIX G

Needs Assessment Step 1: Consider the Context and People Affected

To begin the needs assessment process, begin with your own observations, experiences, instincts and gut feelings about the problem and the situation. You will want to think in terms of the general context of the problem or request for a curriculum, and about the various people who will be affected by the solutions or curriculum you eventually implement.

WORKSHOP TASK #1

Think about the Context and People questions on the following worksheet. Make notes of your responses.

APPENDIX G

Context and People Worksheet

A Context

1. Describe in general the environment in which this project occurs.

2. Describe the problem from your own perspective.

3. Why is this a problem?

4. In the overall scheme of things, how big of a problem is this? (In other words, what could happen if this problem is **not** addressed.)

5. Will your project be a solution to a performance problem? or a new subject or innovation which is being introduced?

6. How much support does this entire project have? Does the needs assessment also have support?

7. How much time do you have?

APPENDIX G

Context and People Worksheet (continued)

B. People Affected

1. Who is affected by the problem?

2. Who may be affected by or involved in the potential solution(s). Note below any potential stakeholders or your broader audience.

3. Who wants this problem solved (or this new subject introduced)? Why?

4. Who doesn't? Is there anyone who prefers for things to stay the same? Why?

7. If it's a problem, who might fear or attempt to block your efforts to find the causes(s) of the problem?

8. If it is a new subject or innovation, who might not support the changes that will be required ?

9. Who must be kept abreast of your findings? Who else might want to know? Who should not know—at least at first?

APPENDIX G

Now that you have completed the Step #1 of your needs assessment, you are probably beginning to get an idea of some things you will want to find out or verify before you develop your curriculum. As you begin to conduct your needs assessment and discover how the situation looks from other peoples' perspectives, you may find that your impressions will change. But for now, what you've written on the Context and People Worksheet will serve as the basis for your next step—planning the needs assessment.

Needs Assessment Step 2: Plan your needs assessment

Step 2A. Questions

Begin planning your needs assessment by considering what questions you want to ask. Based on Rossett's work, needs assessment questions seem to fit well into six categories:

a   What is the current performance of your learners? (actuals)

b.   What level of performance do we want? (optimals)

c.   What are the causes of the problem?

d.   What are potential solutions to the problem?

e.   What are the impressions, opinions, reactions and priorities of people affected by the curriculum?

f.   Does demography, position or situation influence the respondents' answers?

The following list of **sample questions** is intended to guide you as you consider questions for your own needs assessment.

APPENDIX G

Sample Needs Assessment Questions

a. What is the current performance of your learners? (actuals)

Find proof of what the students/residents/ learners know and can do.
(This is the only type of needs assessment question where opinions and impressions don't count. Use this information to determine whether or not potential learners know what they should know and whether or not learners are truthful.)

Can learners do what they say they can do?

Is there a problem? What is going on that is a problem?

What errors are occurring?

What are some problems with _____?

What areas of _____ need improvement?

Where should attention be focused during the needs assessment?

Who thinks there are problems?

Who doubts there are problems?

b. What level of performance do we want? (optimals)

What ought to be going on?

What are the desired outcomes or results?

What standards should the learners be meeting?

What constitutes a good _____?

What is good about _____?

What changes in technology will demand new knowledge, skills or attitudes?

Who is committed to making the optimal occur? (i.e., making changes or implementing new programs)

What community expectations must be met?

If instruction is the best solution to the problem, where should attention be focused during instruction?

c. What are the causes of the problem?

What is creating or contributing to the problem or discrepancy?

What do sources think is causing the problem?

Of the possible causes of problems, what or which is actually causing this problem?

What are some problems with _____?

What are the incentives for doing it right (or the "new" way)?

What are the incentives for doing it wrong (or the "old" way)?

d. What are potential solutions to the problem?

If the learners already know the knowledge or skills, what can be done to solicit or improve their performance?

If the best solution is instruction, explore the following issues:

–What will they do and what won't they do to learn the desired knowledge or skills?

–What teaching strategies might work best with this group of learners?

–What teaching strategies should be avoided with this group of learners?

APPENDIX G

e. What are the impressions, opinions, reactions and priorities of people affected by the curriculum?

Explore reactions to the *topic* (skills, body of knowledge, responsibility, task).

Check for reactions to *training* related to the topic (past, present, potential).

How big a *priority* is this to all of your sources?

–Check perceptions of its priority in relation to other topics.

–Check perceptions of priority of sub-topics.

Determine *confidence* related to the topic.

–Do trainees feel they are able to learn the subject or skill(s)?

–Do faculty feel competent to model the necessary skills and/or attitudes?

What are the incentives for doing it right (or the "new" way)?

What are the incentives for doing it wrong (or the "old" way)?

f. Does demography, position or situation influence the respondents' answers?

Be sure to only ask demographic information that is relevant to your needs assessment purposes.

Who are the respondents?

Year in program?

Expert in the subject matter?

Faculty?

Graduate?

Administrative responsibility?

WORKSHOP TASK #2

Look through the Sample Questions and make notes on the **Needs Assessment Planning Worksheet** about questions related to your own problem.

APPENDIX G

Needs Assessment Planning Worksheet

Questions	Sources	Technique(s)

APPENDIX G

Step 2B. Sources of Information

There are two different kinds of sources: people and documentation. You will want to consider using both in your needs assessment.

People

To determine who can best provide you information, the key questions to ask yourself are:

- Who is affected by the problem?

- Who may be affected or involved in the potential solution(s)?

The people who are the most credible sources of information are close to the problem. For this reason some or all of the folks you listed on your Context and People Worksheet will be logical sources.

People who can provide answers to your questions may be any of the following:
- learners (students, residents, faculty, program participants)
- staff/colleagues involved in program
- administrators (program or institution leaders to whom you must respond)
- volunteer preceptors
- sub-specialist consultants
- attending physicians
- other faculty
- nursing and other clinical/hospital staff
- community or agency representatives
- recent graduates (especially for asking about real world performance)
- current or future employers of learners
- current or future patients of learners
- others?

Think in terms of the accessibility of your people sources, i.e., when to reach them; the best way to approach them; and whether or not you will be able to go back to them again as you learn more and generate more questions.

The number of individuals to involve in the needs assessment depends on two things: (1) whether you can get the information you seek from in-depth contact with small numbers; and (2) how much information and confirmation you need to feel confident and to convince others.

APPENDIX G

Documents

Consider the following materials as sources of information for your needs assessment:

- What **records** (e.g., previous faculty, learner or rotation/clerkship evaluations might provide useful information? Will they be accessible?

- Are there **standards or guidelines** to be met? What help is available from the boards or organizations who set those standards?

- What **literature** will you examine?

- Are there **other programs** where this problem or subject has been addressed successfully? Who could you talk to about their experience?

WORKSHOP TASK #3

Look through the above suggestions and questions about possible sources of information. Make notes in the Sources column on the **Needs Assessment Planning Worksheet** about where you'll look for answers to your questions.

Step 2C. Techniques

A needs assessment may involve a number of questioning techniques. Some methods are more useful, efficient and effective than others, depending on your questions.

Nine possible needs assessment techniques will be described next, with suggestions about advantages and limitations to consider.

    a.   Guess at Needs, Causes and Solutions
    b.   Analyze Existing Data
    c.   Observe Learner Performance
    d.   Do Structured Interviews (in person or by telephone)
    e.   Review Literature
    f.   Ask the Experts
    g.   Observe Excellent Performers
    h.   Do Written Surveys
    i.   Conduct Group Meetings

APPENDIX G

Possible Needs Assessment Techniques

Technique	Advantages	Limitations
a. Guess at Needs, Causes and Solutions The strategy here is to simply jot down what you believe to be the needs of the learners. Use your own informal observations or reports of others to verify the needs you have stated. **Method can be used for ALL needs assessment questions.**	Guessing can be the quickest and easiest way to complete a needs assessment. Guessing may be sufficient for your topic—you may know better than anyone else what the learners need to learn, or at least be better able to articulate those needs. You may also have the administrative authority and/or political clout to implement any educational program you want.	Your experiences may not be representative of the entire group, or may miss the needs of a portion of the audience. Your conclusions may be wrong. This method also offers no data to back up your planning decisions, so your program may lack credibility among the potential learners.
b. Analyze Existing Data Strategies here include reviewing pre-instruction or post-instruction participant surveys, looking at past records of offering similar subjects to the same type of learners, looking at Board scores or results of other learner examinations in related areas, or doing chart reviews to see if learners have documented clinical activities. **Method appropriate for determining CURRENT PERFORMANCE.**	If existing data is available, it can save you time by providing some form of objective information that can be easy to report. This kind of data is usually easily understood by administrators, other faculty and learners. Test results are useful as diagnostic tools to identify specific areas of deficiencies, and can be helpful in determining which potential learners can most profitably be trained.	This kind of information may not be valid for a specific group of learners. These kinds of records may not show causes of problems or potential solutions. They also may not reflect current changes or new needs in the medical professions or health care environment. Tests validated for many specific situations are often not available, and tests validated elsewhere may not be valid in new situations. Test results give clues, but are not conclusive; they are only second-best evidence of real performance.
c. Observe Learner Performance The strategy is to watch potential learners in a real situation, take notes and analyze later for problem areas. It is usually most effective to develop a checklist of ideal procedures, techniques or behaviors prior to observation, then see how many items are met. **Method appropriate for determining CURRENT PERFORMANCE.**	This is the most direct form of needs assessment. Results are systematic, reliable, valid and believable. Existing norms (actual performance) can be identified. The effectiveness of current training may be observed, and real examples from the observations can be used in teaching new skills or content. In creating the observation checklist, this process also breaks down procedures, techniques and behaviors into manageable segments for teaching and evaluation purposes.	Time-consuming, so you'll be able to observe only a limited sample. Can be obtrusive—your presence may affect learners' performance. Using a checklist may limit your observations to a preconceived set of problems.

333

APPENDIX G

Technique	Advantages	Limitations
d. Do Structured Interviews (in person or by telephone) Prepare a list of questions to ask a sample of you learners. This kind of interview can be done by telephone or in person. Method appropriate for determining **CURRENT PERFORMANCE, CAUSES, SOLUTIONS and FEELINGS/PRIORITIES.**	This is the best way to find out about peoples' perceptions of their performance needs, priorities and learning preferences in their own words. Causes and possible solutions are also easy to obtain. It is a systematic and valid approach that can also allow for follow-up calls to ask other questions or verify answers as you learn more.	Can be time-consuming, so you'll be able to reach relatively few people. Your sample size will determine how generalizable your data is. Participants may feel they are "on-the-spot" and may not feel free to tell the truth as they perceive it. Learners who have extreme learning needs in a given area may not be able to articulate those needs.
e. Review Literature For your curriculum, two types of literature must be explored. The first type is literature related to subject matter analysis—reading about health care trends, issues, developments, new procedures and methods of practice to infer learning needs, causes and solutions, as well as to prioritize content in the curriculum. The second type of literature is equally important. It involves searching and analyzing literature related to development and evaluation of other curricula or programs in your content area and/or with similar kinds of learners. Method appropriate for determining **DESIRED PERFORMANCE and SOLUTIONS.**	This is an easy way to summarize new content or skills needed by practicing physicians. At the needs assessment or pre-planning stage of developing medical education programs, the subject matter literature review is most valuable in determining **how to phrase needs assessment questions** to be asked of potential learners and others. The medical education literature can keep you from "reinventing the wheel," by helping you find out about existing programs or see the results of strategies you may or may not choose to try in your own program.	Journals, research reports or books may not reflect current situations or allow for recent changes, and they may not be directly related to the topic at hand. Published literature on subject matter is usually not specific to the potential audience of educational programs. Norms at other locations may be different. Published literature on other curricula is not necessarily specific to your learners or situation. It can also be difficult to find any literature specific to curriculum development or programs related to your subject area.

APPENDIX G

Technique	Advantages	Limitations
f. Ask the Experts This is another technique for both subject matter analysis and learning about similar programs in other settings. Call or correspond with subject matter experts, i.e., people who currently practice, do research and/or teaching in your field, and are recognized in the literature or by peers as experts. Or contact faculty in other institutions who have developed and implemented curricula in your content area with similar audiences. Can also mean attending conferences or other professional meetings where these people might be found. **Method appropriate for determining DESIRED PERFORMANCE and SOLUTIONS.**	This is a way to track down "fugitive" literature, such as unpublished curricula or teaching materials available only through the developers or sponsoring institutions.	Norms at other locations may be different. Also, an expert in the content may not be able to sort out the essentials from content which is not so important to your learners' immediate needs.
g. Observe Excellent Performers Find people who are respected as the top performers in your area of interest. This is similar to a formal process called Critical Incident Technique; the goal is to identify events that result in especially good or bad outcomes. **Method appropriate for determining DESIRED PERFORMANCE.**	Since many excellent performers cannot explain exactly how they do what they do, it's important to watch them as they perform and make notes about their technique or steps. You may also ask the performer(s) to discuss their criteria for "good" and "bad" performances or products.	Since many excellent performers cannot say exactly what or how they do what they do, it may be difficult to see what it is that makes their methods successful. Excellent performers may also be able to take shortcuts that you aren't aware of and they might not describe. Novices may not have the judgment or ability to take a similar shortcut.
h. Do Written Surveys Print a survey form and send to a sample or all of the audience. **Method appropriate for determining CAUSES, SOLUTIONS, and FEELINGS/PRIORITIES.**	Can obtain a systematic and large sample of the population to be served by your program. Information can easily be summarized. If anonymous, participants can express themselves without fear. Can be conducted by others.	Requires careful phrasing of the questions, and process should include a pilot with sample of audience. Information which is collected is limited to questions on the survey, so follow-up to obtain further verification can be difficult. Non-respondents may be different from respondents (and may well be the learners with the most learning needs).

APPENDIX G

Technique	Advantages	Limitations
i. Conduct Group Meetings Bring together groups of experts in the field, potential learners and/or a "task force" of community members or faculty who have different perspectives on the problem. Ask needs assessment questions in an open-ended way and facilitate discussion among group members. Record their ideas. Method appropriate for determining **DESIRED PERFORMANCE, CAUSES, SOLUTIONS, and FEELINGS/PRIORITIES.**	Same as for individual interviews, plus permits synthesis of different viewpoints. Can promote general understanding and agreement, and build support for needed training. The group meeting is, in itself, good training.	This method is time-consuming and initially expensive. Many physicians may feel too busy to participate. The results may be difficult to quantify.

In addition to your specific questions, some use factors should be considered as you determine which techniques will work best for your needs assessment. These include

- anonymity of sources
- cost
- opportunity to ask follow-up questions
- response rate
- ease of analysis
- risk (Techniques such as group meetings and surveys of large numbers of people can be risky. With either technique, you can expose yourself to a good deal of criticism. In a group meeting, it's possible that different parties may not be able to agree on anything—so whatever you do with the information may antagonize one side or the other.)

Never use just one information gathering technique. *TRY TWO!* Another suggestion is that you plan and use **stages**. For example, if you have not yet studied or practiced in the field, your literature review will be essential to help you state your questions correctly and logically. Or, in considering your sources, perhaps you'll want to collect ("be armed with") opinions from several groups (e.g., primary care faculty and graduates) before you approach certain individuals (e.g., sub-specialist faculty).

Finally, making repeated contact with the same sources through a variety of techniques will get you closer and closer to the heart of the matter.

APPENDIX G

WORKSHOP TASK #4

Now look at the questions and sources you've recorded on your **Needs Assessment Planning Worksheets.** Determine and write in the last column what will be the best technique(s) for you to use to gather information from your sources.

APPENDIX G

Needs Assessment Step 3: Conduct Needs Assessment

3A. Implement Plan

Do whatever it takes to get the information you need to form a basis for the decisions you'll have to make as you develop and implement your curriculum.

Follow your plan, but remember—questions and techniques may have to change as you learn more and more; you may deviate from your original plan. Like the detective Columbo, you may want to follow up on ideas or go back to sources to get their reactions to ideas you've heard from other sources.

3B. Handling the Information

The following tips for collecting and compiling needs assessment information are suggestions from fellows who have used the various techniques.

- Keep field notes—or a journal of your findings, impressions and ideas. By completing the Context and People Worksheet, you have already begun to record your field notes. Other findings to record this way would be the ideas and responses you get from experts in the field or representatives from other programs who have developed and implemented similar curricula, or your own thoughts as you hear various perspectives on the problem.

- Cluster responses by demography. In order to spot trends, you may wish to compile information (e.g., test scores, survey responses) by who the respondents are (e.g., PGY 2's, chief residents, graduates of program, clinical faculty, etc.).

- Use the same format to compile responses as you used to conduct structured interviews and written surveys.

- Compile ratings on checklists used for observing learner performance.

- Record observations of excellent performers based on the steps in their procedures, as well as descriptions of their outcomes or products.

- Review Annotated Bibliography findings based upon participants, content, process and outcomes.

- Use flip chart sheets to record responses as you facilitate group meetings. This allows participants to see and verify understanding of their ideas. Collect the flip chart sheets and record/analyze soon after the meeting(s). It may be more effective to audiotape the discussions. Listen and transcribe them later and then examine for general and specific responses and trends. If you or your sources (meeting participants) are uncomfortable with a tape recorder, just use the flip charts.

APPENDIX G

Needs Assessment Step 4: Analyze and communicate your results

4A. Analysis

To draw conclusions from your needs assessment, look at the information you've gathered. Then answer the questions and notes for yourself on the following worksheet Needs Analysis Worksheet.

APPENDIX G

Needs Analysis Worksheet

1. What trends do you see in the responses you have gotten from various sources?

    –Are there similarities in responses of learners, faculty, administrators, others?

    –Are there discrepancies in responses of learners, faculty, administrators, others?

2. What is the gap between your learner's current and desired performance?

3. Are any of the following conditions present?

    ❏ problems with selection of learners   ❏ problems with motivation

    ❏ problems with job design   ❏ problems with organization's policies or procedures

    ❏ problems with the environment   ❏ lack of a job aid

If these conditions are causing the problem or the needs/gap you have defined, *STOP NOW!* These kinds of issues cannot be addressed by education. Developing a curriculum will only waste your time and energy, as well as the institution's and/or the community's resources.

APPENDIX G

4. What have you learned about the following areas that will be important to consider as you make decisions regarding the curriculum?

<u>Participants</u> (What do you know about the learners, faculty, and others who are affected by the curriculum?)

<u>Content</u> (What will impact the relevance, organization and timeliness of the subject matter?)

<u>Process</u> (What have you learned that will affect the instructional strategies you select? What resources are available and what must you do to obtain, use and/or benefit from them?)

<u>Outcomes</u> (What have you learned that will impact evaluation of the learners and the curriculum? What will be considered as measures of success?)

APPENDIX G

4B. Communicate Results

There are some important reasons for communicating results of your needs assessment.

- To provide information to those who need to know about what you've found out about current performance, desired performance, causes, solutions and feelings/priorities.

- To get support for your effort.

- To get additional information or to check out a finding.

- To create a history of your needs assessment effort.

Types of communication can be considered on a continuum, from informal (e.g., comment in a conversation, 5-minute briefing during the regular faculty meeting, or a short memo) to formal (a presentation or written report). The nature and magnitude of your communications should match your goals in developing the curriculum; the expectations of your receivers; and your resources, including time.

When you communicate your needs assessment results, you should answer some typical questions:

- Why did you do this needs assessment?

- What questions did you ask?

- Who were your sources? (Who did you ask? What documents did you look at?)

- How did you gather the information

- What did you find out?

- What does it mean for development of the curriculum? Consider participants, content, process and outcomes. In other words, how will you use the information you obtained to "fill the gap" between current and desired performance?

A requirement for the Primary Care Faculty Development Fellowship is to write a formal report of your needs assessment. You will be asked to write answers to essentially the same questions.

342

APPENDIX G

NEEDS ASSESSMENT & ANALYSIS

References

Anderson, William A. and Henry, Rebecca C. Needs Assessment Strategies for Workshop Planning. **Journal of Instructional Development,** 1980.

Benjamin, Steve. A Closer Look at Needs Analysis and Needs Assessment. **Performance & Instruction: 28,** 1989. pp. 12-15.

Hudzik, John K., et al. **Judicial Education Needs Assessment and Program Evaluation.** East Lansing, MI: The Judicial Education Reference, Information and Technical Transfer Project, 1991.

Knowles, Malcolm S. **The Modern Practice of Adult Education: From Pedagogy to Andragogy.** Chicago: Follett Publishing Co., 1980.

Knox, Alan B. **Helping Adults Learn: A Guide to Planning, Implementing, and Conducting Programs.** San Francisco: Jossey-Bass Inc., Publishers, 1986.

Mager, Robert and Pipe, Peter. **Analyzing Performance Problems or 'You Really Oughta Wanna'.** Belmont, CA: Fearon Publishers, 1970.

Mager, Robert. (1988) **Making Instruction Work, or Skillbloomers.** Belmont, CA: David S. Lake Publishers, 1988.

Rossett, Allison. **Training Needs Assessment.** Englewood Cliffs, NJ: Educational Technology Publications, Inc., 1987.

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343

APPENDIX G

*Primary Care Faculty Development Fellowship Program
Curriculum Development Track*

Fellowship Needs Assessment Assignment

1. Write a two to three page Needs Assessment Report. The report should follow the guidelines in the Criteria for Needs Assessment Report. Refer to the Annotated Example as a guide.

2. Bring two copies of the report with you on Monday, November 2.

3. On Monday morning, be prepared to give a 15-minute summary of your needs assessment, answering the following questions:

    a. What needs assessment questions did you ask?

    b. Who did you ask?

    c. How did you collect the information?

    d. What information did you get back?

    e. How will you use the information when you develop your curriculum? (i.e., So what? What changes are you making in your project based upon the needs assessment?)

If you have any questions, call Karen Lienhart at 517/353-9656.

APPENDIX G

CRITERIA FOR NEEDS ASSESSMENT REPORT

For:
Date:
Reviewed by:

I. **Introduction**
   A. Problem/general concern
      1. prior evidence
      2. pressures to address/ignore
      3. who needs info
      4. decisions to be made
   B. Questions that need answering
      1. current performance
      2. desired performance
      3. causes of the gap/problem
      4. possible solutions
      5. impressions, reaction, opinions, priorities

II. **Body**
   A. Statements explaining needs assessment methods
      1. Include info sources
         a. ID/describe varied info sources
         b. program/organization
         c. credible sources close to problem
         d. adequate # of sources

      2. Describe info gathering techniques
         a. techniques described/copies included
         b. times of info gathering
         c. techniques match questions that need answering
         d. techniques account for anonymity, cost, opportunity to ask follow-up questions, response rate, ease of analysis, risk
         e. at least 2 techniques used

   B. Statements that explain needs assessment results
      1. results organized by questions, sources and techniques
      2. if data display is appropriate
         a. data summarized and displayed
         b. tables, etc., titled, labeled and numbered
      3. results show trends
      4. questions answered

Michigan State University/OMERAD 9-92

APPENDIX G

III. Conclusion
    A.   Stated gap between current and desired
           performance
    B.   what to do to fill gap
    C.   Based the conclusions on data in results section
    D.   Results related to aspects of curriculum
           1.   participants
           2.   content
           3.   process
           4.   outcomes

**IV. Can report be easily transferred to journal
article methods section?**

APPENDIX H

Definitions of Terms

Although limited in scope to fit the purposes of this study, every attempt was made to base these working definitions on the literature.

Curriculum: "a valued process for bringing about required and desired changes in learner skills, knowledges, and attitudes so that students survive and contribute in the world of further schooling and the world of work, family, and interpersonal relationships" (English & Kaufman, 1975). This definition purposely avoids limiting the concept of curriculum to classroom settings using traditional methods such as lecture so that the curricula to be created during the study are able to take advantage of this wider definition.

Espoused theory: the set of rules that people will state if you ask them about their theory of action. It is important to note that an espoused theory and a theory-in-use are not necessarily in agreement with each other.

Fellow: a physician enrolled in the faculty development fellowship which is the context of the study.

Human Performance Technology (HPT): a relatively new field which endeavors to improve human performance in the workplace. HPT has grown out of a number of other fields including behavioral psychology, instructional technology, training, organizational development and human resource management. Stolovitch & Keeps (1992) acknowledge the great diversity in definitions of this still evolving field, but assert that HPT has the following critical attributes:

1) HPT is systematic.
2) HPT is systemic.
3) HPT is grounded in scientifically derived theories and the best empirical evidence available.
4) HPT is open to all means, methods and media.
5) HPT is focused on achievements that human performers and the system value. (p. 7)

And, particularly important to the intended study, HPT assumes the use of some form of needs assessment as part of the systematic and systemic approach to solving problems.

APPENDIX H

Medical education: the planning, developing, implementing and evaluating of a variety of learning experiences (in school, apprenticeships or other situations in which new knowledge, skills or attitudes may be acquired) for the purpose of preparing students to be health professionals (e.g.. physicians, nurses, medical technicians) and/or enhancing the knowledge, skills and attitudes of current health professionals.

Needs assessment: In initial step of analysis in the four step systematic approach to problem solving described by Mager (1988). Further described by Trimby (1979) as "a process for identifying and measuring gaps between *what is* and *what ought to be*, prioritizing the gaps, and determining which of the gaps to work on to gain closure." In the present study, the term needs assessment applied to both the search for the problem, and the identification of causes and solutions.

Participant: a fellow who 1) has chosen the curriculum development track in the fellowship, and 2) has agreed to participate in the study.

Theory-in-use: the set of rules people behave by, which may be discovered only through observing people's behavior. This is because people are often not conscious of their theory-in-use. It is important to note that an espoused theory and a theory-in-use are not necessarily in agreement with each other.

Theory of action: defined by Argyris (1991) as "a set of rules that individuals use to design and implement their own behavior as well as to understand the behavior of others" (p. 103). Argyris and Schön (1978) point out that these theories of action are useful for control as well as prediction of human behavior. A person essentially uses a theory of action to make decisions that control his/her behavior, and others can use that theory of action to predict or explain that person's behavior. There are two types of theories of action: espoused theories, and theories-in-use.

LIST OF REFERENCES

LIST OF REFERENCES

Argyris, C. & Schön, D. A. (1974). Theory in practice: Increasing Professional Effectiveness. San Francisco: Jossey-Bass.

Argyris, C. & Schön, D. A. (1978). Organizational learning: A theory of action perspective. Reading, MA: Addison-Wesley.

Argyris, C. (1991, May-June). Teaching smart people how to learn. Harvard Business Review, pp. 99-109.

Becker, H. S. (1958). Problems of inference and proof in participant observations. American Sociological Review, 23 (6), 652-660.

Benjamin, S. (1989). A closer look at needs analysis and needs assessment: Whatever happened to the systems approach? Performance & Instruction, 28 (9), 12-16.

Bertalannfy, L. von. (1968). General system theory: Foundation, development, applications. New York: George Brazillier.

Blumer, H. (1962). Society as symbolic interaction. In A. M. Rose (Ed.), Human behavior and social processes: An interactionist approach (pp. 179-192). Boston: Houghton Mifflin.

Bogdan, R. & Biklen, S. (1982). Qualitative research for education: An introduction to theory and methods. Boston: Allyn & Bacon.

Burton, J. K., & Merrill, P. F. (1991). Needs assessment: Goals, needs & priorities. In L. J. Briggs, K. L. Gustafson, & M. H. Tillman (Eds.), Instructional design: Principles and applications (2nd ed.) (pp. 17-43). Englewood Cliffs, NJ: Educational Technology Publications.

Carron, A. S. (1977). Needs assessment in government: Rearranging the deck chairs on the ship of state. Educational Technology, 17(11), 27-28.

Cohen, B. J. (1981). Do you really want to conduct a needs assessment? Philadelphia: Management and Behavioral Science Center, University of Pennsylvania.

Dewey, J. (1933). How we think. Lexington, MA: Heath.

348

LIST OF REFERENCES

Elstein, A. S., Shulman, L. S., & Sprafka, S. A. (1978). Medical problem solving: An analysis of clinical reasoning. Cambridge, MA: Harvard University Press.

Elstein, A. S., Shulman, L. S., & Sprafka, S. A. (1990). Medical problem solving: A ten-year retrospective. Evaluation and the Health Professions, 13(1), 5-36.

English, F. W. (1977). The politics of needs assessment. Educational Technology, 17(11), 18-23.

English, F. W., & Kaufman, R. A. (1975). Needs assessment: A focus for curriculum development. Washington, DC: Association for Supervision and Curriculum Development.

Erickson, F. (1986). Qualitative methods in research on teaching. In M. Wittrock (Ed.), Third handbook of research on teaching (pp. 119-161). New York: MacMillan.

Ericsson, K. A., & Simon, H. A. (1984). Protocol analysis. Cambridge: The MIT Press.

Finnegan, G. T. (1991). Improving performance in the medical setting. In L. J. Briggs, K. L. Gustafson, & M. H. Tillman (Eds.), Instructional Design: Principles and Applications (2nd ed.) (pp. 407-428). Englewood Cliffs, NJ: Educational Technology Publications.

Geertz, C. (1979). From the native's point of view: On the nature of anthropological understanding. In P. Rabinow & W. Sullivan (Eds.), Interpretive social science. Berkeley: University of California Press.

Geis, G. L. (1986). Human performance technology: An overview. In M. E. Smith (Ed.), Introduction to Performance Technology (Vol. 1) (pp. 1-20). Washington, DC: National Society for Performance and Instruction.

Gilbert, T. F. (1978). Human competence: Engineering worthy performance. New York: McGraw Hill.

Glaser, B. G. & Strauss, A. L. (1967). The discovery of grounded theory. Chicago: Aldine Publishing.

Guba, E. G., & Lincoln, Y. S. (1982). The place of values in needs assessment. Educational Evaluation and Policy Analysis, 4 (3), 311-320.

LIST OF REFERENCES

Hammersley, M. & Atkinson, P. (1983). Ethnography: Principles in practice. New York: Tavistock Publications.

Harless, J. H. (1975). An ounce of analysis is worth a pound of objectives. Newnan, GA: Harless Performance Guild.

Harless, J. H. (1983). Q and A: Joe Harless. Performance & Instruction, 22(1), 6-7.

Harless, J. H. (1985). Invited address: Performance technology and other popular myths. Performance & Instruction, 24(6), 4-6.

Kaufman, R. A. (1972). Educational system planning. Englewood Cliffs, NJ: Prentice-Hall.

Kaufman, R. A. (1977a). A possible taxonomy of needs assessments. Educational Technology, 17(11), 60-64.

Kaufman, R. A. (1977b). Needs assessments: Internal and external. Journal of Instructional Development, 1(1), 5-8.

Kaufman, R. A. (1979). Identifying and solving problems: A system approach (2nd ed.). La Jolla, CA: University Associates.

Kaufman, R. A. (1982). Means and ends--Needs assessment, needs analysis, and front-end analysis. Educational Technology, 22(11) 33-34.

Kaufman, R. A. (1985). Needs assessment, needs analysis, objectives and evaluation. Performance & Instruction, 24(6), back cover.

Kaufman, R. (1986). Assessing needs. In M. E. Smith (Ed.), Introduction to Performance Technology, Vol. 1 (pp. 25-59). Washington, DC: National Society for Performance and Instruction.

Kaufman, R. A. (1989). Selecting a planning mode: Who is the client? Who benefits? Performance & Instruction, 28(2), 6-8.

Kaufman, R. A. (1990). 'Technicians,' 'physicists' and educational technology. Educational Technology, 30(1) 32-33.

Kaufman, R. A., & Bowers, D. (1990). Proactive and reactive planners: An even closer look as needs assessment and needs analysis. Performance & Instruction, 29(5), 7-10.

LIST OF REFERENCES

Kaufman, R., & English F. W. (1979). Needs assessment: Concepts and application. Englewood Cliffs, NJ: Educational Technology Publications.

Kaufman, R., & Herman J. (1991). Strategic planning in education: Rethinking, restructuring, revitalizing. Lancaster, PA: Technomic.

Kaufman, R. A., & Stolovitch, H. (1991). Planning, perspectives, creativity, and control. Educational Technology, 31(2), 51-53.

Kaufman, R. A., & Valentine, G. (1989). Relating needs assessment and needs analysis. Performance & Instruction, 28 (10), 10-14.

Kerlinger, F. N. (1973). Foundations of behavioral research (2nd ed.). New York: Holt, Rinehart and Winston.

Kimmel, W. A. (1977). Needs assessment: A critical perspective. Washington, D.C.: Office of Program Systems, Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health, Education, and Welfare..

Langer, E. J. (1989). Mindfulness. Reading, MA: Addison-Wesley.

Lewis, J. L. (1978, March). Problems encountered in conducting an assessment of educational needs in selected Ohio school districts. Paper presented at annual meeting of the American Educational Research Association, Toronto, Canada. (ERIC Document Reproduction Service No. ED 167 591)

Lewis, T., & Bjorkquist, D. C. (1992). Needs assessment: A critical reappraisal. Performance & Improvement Quarterly. 5(4), 33-54.

Lincoln, Y. S. & Guba, E. G. (1985). Naturalistic inquiry. Beverly Hills, CA: Sage Publications.

Mager, R. F. (1970). Goal Analysis. Belmont, CA: Pitman.

Mager, R. F. (1988). Making instruction work: or Skillbloomers. Belmont, CA: Lake Publishing.

Mager, R. F., & Pipe, P. (1984). Analyzing performance problems: Or you really oughta wanna. Belmont, CA: Lake Publishing.

Marshall, C. & Rossman, G. B. (1989). Designing qualitative research. Newbury Park, CA: Sage Publications.

LIST OF REFERENCES

Miles, M. B. & Huberman, A. M. (1984). Qualitative data analysis. Newbury Park, CA: Sage Publications.

Miles, W. R. (1979). A constructive criticism of needs assessment. Planning and Changing, 10 (3), 169-180.

Moroney, R. M. (1977). Needs assessment for human services. In W. F. Anderson, B. J. Frieden, and M.J. Murphy (Eds.), Managing human services. Washington, DC: International City Management Association.

Ng, B. Y. (1988). Towards a generalized model of needs analysis (Doctoral dissertation, Indiana University). Dissertation Abstracts International, 49(9A), 2627-2628.

Nickols, F. W. (1990). Why those darned training problems won't go away. Performance & Instruction, 29(1), 13-15.

Patton, M. Q. (1990). Qualitative evaluation and research methods. Newbury Park, CA: Sage Publications.

Peshkin, A. (1986). God's choice: The total world of a fundamentalist Christian school. Chicago: The University of Chicago Press.

Peshkin, A. (1985). From title to title: The evolution of perspective in naturalistic inquiry. Anthropology and Education Quarterly, 16(3), 214-224.

Rodriguez, S. R. (1988). Needs assessment and analysis: Tools for change. Journal of Instructional Development, 11(1), 23-28.

Rossett, A. (1982). A typology for generating needs assessments. Journal of Instructional Development, 6(1), 28-33.

Rossett, A. (1986). Commentary: Analyzing, assessing, and disambiguating whatchamacallit. In M. E. Smith (Ed.), Introduction to performance technology (Vol. 1) (pp. 60-67). Washington, DC: National Society for Performance and Instruction.

Rossett, A. (1987). Training needs assessment. Englewood Cliffs, NJ: Educational Technology Publications.

Rossett, A. (1990). Overcoming obstacles to needs assessment. Training, 27(3), 36-41.

LIST OF REFERENCES

Rossett, A. (1991). Needs assessment. In G. J. Anglin (Ed.), Instructional technology: Past, present, and future (pp. 156-169). Englewood, CO: Libraries Unlimited.

Rossett, A. (1992). Analysis of human performance problems. In H. D. Stolovitch & E. J. Keeps (Eds.), Handbook of human performance technology (pp. 97-113). San Francisco: Jossey-Bass.

Roth, J. (1977). Needs and the needs assessment process. Evaluation News, 5, 15-17.

Roth, J. (1978). Theory and practice of needs assessment with special application to institutions of higher learning (Doctoral Dissertation, University of California, Berkeley). Dissertation Abstracts International, 40(01A), 128-129.

Sarthory, J. A. (1977). Needs assessment and the practitioner: Problems and prospects. Educational Technology, 17(11), 24-26.

Scriven, M. & Roth, J. (1977). Special feature: Needs assessment. Evaluation News, 2, 25-28.

Shrock, S. A. (1984). Naturalistic Inquiry: An alternative methodology for instructional development research. In R. K. Bass & C. R. Dills (Eds.), Instructional development: The state of the art II (pp. 333-340). Dubuque, IA: Kendall/Hunt.

Simon, H. A. (1945). Administrative Behavior: A study of decision-making processes in administrative organization (2nd ed.). New York: The Free Press.

Sheets, K. J. & Anderson, W. A. (1991). The reporting of curriculum development activities in the health professions. Teaching and Learning in Medicine, 3(4), 221-226.

Sleezer, C. M. (1990). The development and validation of a performance analysis for training model. (Project number thirty-nine). St. Paul, MN: Minnesota University, Department of Vocational and Technical Training. (ERIC Document Reproduction Service No. ED 339 820)

Sleezer, C. M. (1991). Developing and validating the performance analysis for training model. Human Resource Development Quarterly, 2(4), 355-372.

Sleezer, C. M. (1992). Needs assessment: Perspectives from the literature. Performance Improvement Quarterly, 5(2), 34-46.

LIST OF REFERENCES

Sleezer, C. M. (in press). Performance analysis for training: Bridging the gap between theory and practice. Training and Development.

Stolovitch, H. D. & Keeps, E. J. (1992). What is human performance technology? In H. D. Stolovitch & E. J. Keeps (Eds.), Handbook of human performance technology (pp. 3-13). San Francisco: Jossey-Bass.

Stufflebeam, D. L., McCormick, C. H., Brinkerhoff, R. O., & Nelson, C. O. (1984). Conducting educational needs assessments. Boston: Kluwer-Nijhoff.

Stufflebeam, D. L. (1977). Working paper on needs assessment in evaluation, Paper presented at the First Annual Educational Research Association Topical Conference on Evaluation, San Francisco.

Tesch, R. (1990). Qualitative research: Analysis types and software tools. New York: The Falmer Press

Trimby, M. J. (1979). Needs assessment models: A comparison. Educational Technology, 19(12), 24-28.

Tyler, R. (1949). Basic principles of curriculum and instruction. Chicago: University of Chicago Press.

Wanamaker, G. (1986). Current state of the art of alpha & beta needs assessment models in 1983. Doctoral Dissertation, Michigan State University. Dissertation Abstracts International, 47(9A), 3302.

Weber, M. (1949). The methodology of the social sciences. (E. A. Shils & H. A. Finch, Eds. & Trans.) Glencoe, IL: The Free Press.

Witkin, B. R. (1976, April). Needs assessment models: A critical analysis. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Witkin, B. R. (1977). Needs assessment kits, models and tools. Educational Technology, 17(11), 5-18.

Witkin, B. R. (Ed.) (1978a). Before you do a needs assessment: Important first questions. Hayward, CA: Office of the Alameda County Superintendent of Schools.

LIST OF REFERENCES

Witkin, B. R. (Ed.) (1978b). Needs assessment product locator. Available needs assessment products and how to select them for local use. Hayward, CA: Office of the Alameda County Superintendent of Schools.

Witkin, B. R. (1984). Assessing needs in educational and social programs: Using information to make decisions, set priorities, and allocate resources. San Francisco: Jossey-Bass.

Yin, R. K. (1989). Case study research: Design and methods. Newbury Park, CA: Sage Publications.

Zemke, R., & Kramlinger, T. (1982). Figuring things out: A trainer's guide to needs and task analysis. Reading, MA: Addison-Wesley.