

# Needs Analysis, Program Evaluation, Program Implementation, Survey Construction, and the CIPP Model

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## What is a Needs Analysis?

- According to McKillip (1987), "Needs are value judgments that a target group has problems that can be solved" (p. 7).
- Needs analysis, involving the identification and evaluation of needs, is a tool for decision making in the human services and education.
- Decisions can be varied, including such as resource allocation, grant funding, and planning. In other words, Needs Analysis is a process of evaluating the problems and solutions identified for a target population. In this process, it emphasizes the importance and relevance of the problems and solutions.

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## Models of Needs Analysis

- **Discrepancy Model**
- **Marketing Model**
- **Decision-Making Model**

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## Discrepancy Model

- This model is the most straightforward and widely used, especially in education.
- This model emphasizes normative expectations and involves three phases:
  - *Goal setting*, identifying what ought to be
  - *Performance measurement*, determining what is
  - *Discrepancy identification*, ordering differences between what ought to be and what is

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## Marketing Model

- This model defines needs Analysis as a feedback process used by organizations to learn about and to adapt to the needs of their client populations.
- A marketing strategy of needs analysis has three components:
  - *Selection of the target population*, those actually or potentially eligible for the service and able to make the necessary exchanges
  - *Choice of competitive position*, distinguishing the agency's services from those offered by other agencies and providers
  - *Development of an effective marketing mix*, selecting a range and quality of services that will maximize utilization by the target population

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## Decision-Making Model

- This model is an adaptation of multi-attribute utility analysis (MAUA) to problems of modeling and synthesis in applied research.
- The Decision-Making model has three stages:
  - *Problem modeling*: In this stage, need identification takes place. The decision problem is conceptualized by options and decision attributes.
  - *Quantification*: In this stage, measurements contained in the need identification are transformed to reflect the decision makers' values and interests.
  - *Synthesis*: In this stage, an index that orders options on need will be provided. This index also gives information on the relative standing of these needs.

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## Steps In Needs Analysis

### Step 1: Identify users and uses of the need analysis

- The users of the analysis are those who will act on the basis of the report.
- Knowing the uses of the need analysis can help focus on the problems and solutions that can be entertained.

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## Steps In Needs Analysis Cont.

### Step 2: Describe the target population and the service environment

- For example, geographic dispersion may include transportation, demographic characteristics of the target population, eligibility restrictions, and service capacity. Client analysis refers to the comparison of those who use services with those who are eligible to use services. Resource inventories detail services available.

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## Steps In Needs Analysis Cont.

### Step 3: Identify needs

- **Describe problems:**
- According to McKillip (1987), three types of problems are identified by need analysis:
  - *Discrepancies:* "Problems are revealed by comparison of expectations with outcomes. Discrepancies are problems" (p. 11).
  - *Poor outcome:* Problems involve those at-risk of developing poor outcomes
  - *Maintenance need:* "A group with maintenance needs can develop poor outcomes if services presently offered are withdrawn or altered" (p. 11).

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## Steps In Needs Analysis Cont.

- Bradshaw identified four types of outcome expectations that support judgments of needs (McKillip, 1987):
  - *Normative need*: Expectations based on expert identification of adequate levels of performance or service. (This type of expectations may miss real needs of target population.)
  - *Felt need*: Expectations that members of a group have for their own outcomes (e.g., parents' expectations about the appropriate amount of elementary level mathematics instruction).
  - *Expressed need*: Expectations based on behavior of a target population. Expectations are indicated by use of services (e.g., waiting lists, enrollment pressure, or high bed occupancy rates).
  - *Comparative need*: Expectations based on the performance of a group other than the target population. (Comparative expectations mainly depend on the similarity of the comparison group and the target population. In addition, such expectations can neglect unique characteristics that invalidate generalizations.)

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## Steps In Needs Analysis Cont.

- ***Describe solutions:***
- According to McKillip (1987), there are three criteria (dimensions) for evaluating solutions:
  - Cost analysis
  - Impact
  - Feasibility

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## Steps In Needs Analysis Cont.

### **Step 4: Assess the importance of the needs**

- Once problems and their solutions have been identified, needs are evaluated.

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## Steps In Needs Analysis Cont.

### **Step 5: Communicate results**

- Finally, the results of the need identification must be communicated to decisions makers, users, and other relevant audiences.

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## Techniques for Needs Analysis

### **• Resource Inventory**

- Information is gathered from service providers, either by survey or interview
- Provides a systematic mapping of services available, points to gaps and to widely available services, and may identify services that planners were not aware of

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## Techniques for Needs Analysis Cont.

### **• Secondary Data Analysis**

- Target population description
- Synthetic estimation
- Client analysis
- Direct and at-risk indicators

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## Techniques for Needs Analysis Cont.

- **Surveys**

- Key informants
- Client satisfaction
- Training surveys

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## Techniques for Needs Analysis Cont.

- **Group Procedures**

- Focus groups
- Nominal groups
- Public hearing and community forums

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## Additional Information on Needs Analysis

- In practice, needs analysis is an **iterative** and **satisfying** activity, which includes "*the cycle of decision, data gathering, and data analysis repeats until further cycles are judged unnecessary*" (McKillip, 1987, pp. 9-10).
- Because different stakeholders have different perspectives on needs and solutions, needs analysis usually involves the gathering of information from more than one referent group (e.g., clients, families, service providers).

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## Additional Information on Needs Analysis Cont.

- Further, in planning needs analysis/assessment (or any other research), it is important to consider **multiple measures** (e.g., different types of measures for the same construct) and **different methods of assessment** (e.g., client surveys – questionnaires, key informant interviews; McKillip, 1987).
- Based on the characteristics of needs analysis, the major concepts of **participatory action research (PAR)** that involve consumers in the planning and conduct of research can be considered in needs analysis.

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## Needs Analysis

### Needs Analysis Activity

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## Program Evaluation

### History of Program Evaluation

- Primary purpose traditionally has been to provide decision makers with information about the effectiveness of some program, product, or procedure
- Has been viewed as a process in which data are obtained, analyzed, and synthesized into relevant information for decision-making
- Has developed in response to the pressing demands of the rapidly changing social system that started in the 1930s. The attempts by evaluators to meet these demands have resulted in the development of decision-oriented models.

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## Program Evaluation Cont.

### History of Program Evaluation Cont.

- In education, the major impetus to the development of decision-oriented evaluation was the curriculum reform movement in the 1960s.
- Human service evaluation began primarily as an extension of educational evaluation. This field has also applied methods from economics and operations research to develop cost-effectiveness and cost-benefit analyses.

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## Program Evaluation Cont.

### Originating Orientations

- *Education:*
  - Educational Psychology Models: purpose is to determine discrepancies between objectives and outcomes and between the intended and actual program implemented
  - Educational Decision Models: purpose is to make better, more defensible decisions
  - Educational Science Models: purpose is to determine causal relationships between inputs, program activities, and outcomes
  - Limitations of all three models: a) focus on interim outcomes, b) emphasis on measurement, c) emphasis on student achievement, d) terminal availability of data, and e) limited judgment criteria

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## Program Evaluation Cont.

### Originating Orientation Cont.

- *Human Services:*
  - Guided by the same decision-oriented philosophy as found in education, but added the cost-effectiveness and cost-benefit analyses models
  - 3 roles of an evaluator: (a) evaluator as statistician, (b) evaluator as researcher, and (c) evaluator as technician
  - Similar limitations as educational models, especially when the evaluators are not allowed to participate in or even have access to decision making and planning

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## Basics of Program Evaluation

- A particularly important goal of research in natural settings is program evaluation.
- "**Program evaluation** is done to provide feedback to administrators of human service organizations to help them decide what services to provide to whom and how to provide them most effectively and efficiently" (Shaughnessy & Zechmeister, 1990, p. 340).
- Program evaluation represents a hybrid discipline that draws on political science, sociology, economics, education, and psychology. Thus, persons (e.g., psychologists, educators, political scientists, and sociologists) are often involved in this process (Shaughnessy & Zechmeister, 1990).

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## Basics of Program Evaluation Cont.

- "**Evaluation research** is meant for immediate and direct use in improving the quality of social programming" (Weiss, as cited in Patton, 1978, p. 19).
- "**Evaluation research** is the systematic collection of information about the activities and outcomes of actual programs in order for interested persons to make judgments about specific aspects of what the program is doing and affecting" (Patton, 1978, p. 26).

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## Basics of Program Evaluation Cont.

- "Evaluation research refers to the use of scientific research methods to plan intervention programs, to monitor the implementation of new programs and the operation of existing ones, and to determine how effectively programs or clinical practices achieve their goals".
- "Evaluation research is means of supplying valid and reliable evidence regarding the operation of social programs or clinical practices--how they are planned, how well they operate, and how effectively they achieve their goals" (Monette, Sullivan, & DeJong, 1990, p. 337).

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## Qualitative Program Evaluation

- **Attributes of qualitative evaluation include:**

- Qualitative data (observations, interviews)
- Qualitative design (flexible)
- One group under observation or study
- Inductive hypothesis testing
- Researcher as participant
- Qualitative data analysis (e.g. coding)

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## Qualitative Program Evaluation Cont.

- **Naturalistic Inquiry**

- Defined as slice-of-life episodes documented through natural language representing as closely as possible how people feel, what they know, how they know it, and what their concerns, beliefs, perceptions, and understandings are.
- Consists of a series of observations that are directed alternately at discovery and verification.
- Came about as an outgrowth of ecological psychology.
- Has been used for many purposes and applied in different orientations, including education and psychology.
- The perspective and philosophy make this method ideally suited to systematic observation and recording of normative values.

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## Qualitative Program Evaluation Cont.

- **Systems Approaches**

- The writings of systems theorists provide evidence that systems and the study of systems are necessary in order to understand people's increasingly complex interaction with others and with the environment
- General systems paradigm suggests that it is impossible to understand complex events by reducing them to their individual elements
- An example in education is the use of instructional systems development

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## Qualitative Program Evaluation Cont.

- **Participatory Action Research (PAR)**
  - Some of the people in the organization under study participate actively with the professional researcher throughout the research process from the initial design to the final presentation of results and discussion of their action implications.
  - In rehabilitation and education, this paradigm would potentially involve all of the stakeholders - consumers, parents, teachers, counselors, community organizations, and employers.
  - Note: Remember that not all PAR evaluation is qualitative.

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## Evaluation Research vs. Basic Research

- **In Evaluation Research**, the researcher takes immediate action on the basis of the results. He/she must determine clearly whether a program is successful and valuable enough to be continued.
- **In Basic Research**, the researcher can afford to be tentative and conduct more research before they draw strong conclusions about their results (Cozby, 1993).
- Program evaluation is one type of applied social research (Dooley, 1990; Shaughnessy & Zechmeister, 1990).

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## Evaluation Research vs. Basic Research Cont.

- According to Shaughnessy and Zechmeister (1990), the purpose of program evaluation is practical, not theoretical.
- The distinction of basic versus applied research cannot be determined by methodology, location, or motivation of the work (Dooley, 1990).
- **Basic and applied research can be differentiated in terms of (a) goals and products and (b) constraints placed on the problem-solving aspects of these kinds of research.**

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## Evaluation Research vs. Basic Research Cont.

- **Basic research** seeks a better understanding of human nature through the development of conceptual tools.
- **Applied research** looks for an improvement of human life through the scientific discovery of practical solutions. However, a case can be made for a reciprocal relationship between basic and applied research (Shaughnessy & Zechmeister, 1990).

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## The Need for Program Evaluation

- When new ideas or programs are implemented, evaluation should be planned to assess each program to determine whether it is having its intended effect. If it is not, alternative programs should be tried.

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## The Need for Program Evaluation Cont.

- According to Monette, Sullivan, and DeJong (1990), evaluation research is conducted for three major reasons:
  - It can be conducted for administrative purposes, such as to fulfill an evaluation requirement demanded by a funding source, to improve service to clients, or to increase efficiency of program delivery.
  - A program is assessed to see what effects, if any, it is producing (i.e., impact assessment).
  - It can be conducted to test hypotheses or evaluate practice approaches.

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## Standards of Program Evaluation

- According to Ralph and Dwyer (1988), a good program evaluation design should:
  - Demonstrate that a clear and attributable connection exists between the evidence of an educational effect and the program treatment, and
  - Account for rival hypotheses that might explain effects.

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## Standards of Program Evaluation Cont.

- Whatever designs were chosen and whatever facets of the program are evaluated current standards demand that program evaluations should possess the following characteristics:
  - (a) utility, (b) feasibility, (c) propriety, and (d) accuracy.
- That is, they must be useful for program, they should be feasible (politically, practically, and economically), they must be conducted fairly and ethically, and they must be conducted with technical accuracy (Patton, 1978).

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## Elements of Design in Program Evaluation

- A *design* is a *plan* which dictates *when* and *from whom* measurements will be gathered during the course of the program evaluation
- Two types of evaluators:
  - Summative evaluator: responsible for a summary statement about the effectiveness of the program
  - Formative evaluator: helper and advisor to the program planners and developers
- The critical characteristic of any one evaluation study is that it provide the best possible information that could have been collected under the circumstances, and that this information meet the credibility requirements of its evaluation audience

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## Elements of Design in Program Evaluation Cont.

- Related terms:
  - True control group
  - Non-equivalent control group
  - Pre-tests
  - Post-tests
  - Mid-tests
  - Retention tests
  - Time Series tests

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## Steps in Designing a Program Evaluation

- Consider your goals
- Identify needed data related to each goal
- Identify the comparison group
- Identify a schedule for data collection

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## Program Evaluation

# Program Evaluation Activity

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## Program Implementation

- Program implementation is how a program looks in operation
- Need to look at not only that a program worked, but how it worked

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## Questions as you plan an implementation evaluation

- What purpose will your implementation study serve?
- What overall evaluation orientation is most appropriate?

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## Program Implementation Steps

- Initial planning: Deciding what to measure
  - What are the program's critical characteristics?
  - How much supporting data do you need?
- Steps for planning data collection
  - Choosing data collection methods
  - Determining whether appropriate measures already exist
  - Creating a sampling strategy
  - Thinking about validity and reliability
  - Planning for data analysis

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## Methods for Assessing Program Implementation

- Program records
- Questionnaires and interviews
- Observations

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## Program Implementation

### Program Implementation Activity

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## Information on Survey Construction

- **DESIGNING SURVEYS**
- A good question is one that produces answers that are reliable and valid measures of something that we want to describe
- 2 types of question evaluations:
  - Those aimed at evaluating reliability
  - Those aimed at assessing the validity of answers

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## Survey Construction Cont.

- **5 process standards of questions and answers**
  - Questions need to be consistently understood.
  - Questions need to be consistently administered or communicated to respondents.
  - What constitutes an adequate answer should be consistently communicated.
  - Unless measuring knowledge is the goal of the question, all respondents should have access to the information needed to answer the question accurately.
  - Respondents must be willing to provide the answers called for in the question.

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## Survey Construction Cont.

- **Possible steps to assess the extent to which questions meet process standards**
  - Focus group discussions
  - Intensive or cognitive interviews
  - Field pre-tests under realistic conditions

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## Survey Construction Cont.

- **Some general rules for designing good survey instruments**
  - The strength of survey research is asking people about their firsthand experiences: what they have done, their current situations, their feelings and perceptions.
  - Questions should be asked one at a time.
  - A survey question should be worded so that all respondents are answering the same question.
  - If a survey is to be interviewer administered, wording of the questions must constitute a complete and adequate script such that when the interviewer reads the question as worded, the respondent will be fairly prepared to answer the question.
  - All respondents should understand the kind of answer that constitutes an adequate answer to a question.
  - Survey instruments should be designed so that the tasks of reading questions, following instructions, and recording answers are as easy as possible for interviewers and respondents.

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## Survey Construction Cont.

- **Ways of addressing validity in surveys**
  - Deriving questions from relevant literature
  - Expert panel

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## Sampling and Surveys

- Sampling relates to the degree to which those surveyed are representative of a specific population
- The sampling frame is the set of people who have the chance to respond to the survey

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## Sampling and Surveys Cont.

### **Probability Sampling**

- Random sampling
- Stratified random sampling
- Systematic sampling
- Cluster sampling

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## Sampling and Surveys

### **Non-probability Sampling**

- Quota sampling
- Snowball sampling
- Convenience sampling

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## Survey Construction

### Survey Construction Activity

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## CIPP Model

- From a broad perspective of conceptualization, the CIPP (i.e., Context, Input, Process, and Product) evaluation model, developed by the Phi Delta Kappa Commission on Evaluation, divides evaluation into four strategies (Borich & Jemelka, 1982).

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## CIPP: Context Evaluation

- The subsystems of the context in which the program operates
- Examples:
  - public rehabilitation agency, public school, private rehabilitation agency, private/parochial school, high school

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## CIPP: Input Evaluation

- The available human and material resources and strategies
- Examples:
  - school personnel, special educators, rehabilitation counselors, supervisors, forms, paper

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## CIPP: Process Evaluation

- The program that is being implemented and the barriers that are encountered
- Examples:
  - direct instruction, vocational evaluation program, independent living program

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## CIPP: Product Evaluation

- The outcomes measured and the standards by which they are being evaluated
- Examples:
  - reading scores as measured by a standardized test, employment as measured by a job in which the individual is working 30 hours per week in an integrated setting

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CIPP

## CIPP ACTIVITY

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Questions and Comments

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