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THE CASE STUDY – A RESEARCH METHOD IN EVALUATION

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Case study research excels at bringing us to an understanding of a complex issue or object and can extend experience or add strength to what is already known through previous research. Case studies emphasize detailed contextual analysis of a limited number of events or conditions and their relationships. Researchers have used the case study research method for many years across a variety of disciplines. Social scientists, in particular, have made wide use of this qualitative research method to examine contemporary real-life situations.

Case study is a valuable method of research, with distinctive characteristics that make it ideal for many types of investigations. It can also be used in combination with other methods. Its use and reliability should make it a more widely used methodology, once its features are better understood by potential researchers.

A case study is a research method based on an in-depth investigation of a single individual, group, or event. By including both quantitative and qualitative data, case study helps explain both the process and outcome of a phenomenon through complete observation, reconstruction and analysis of the cases under investigation.

CONCEPT OF CASE STUDY

Case study can be defined in a variety of ways. As case study is a specific instance that is frequently designed to illustrate a more general principle Case studies are particularistic, descriptive, and heuristic and rely heavily on inductive reasoning in handling multiple data sources 'as 'it tries to illustrate a decision or set of decisions: why they were taken, how they were implemented, and with what result'. It can be defined as an intensive, holistic description and analysis of a single entity, phenomenon, or social unit, as it is based on In-depth, detailed data from wide data source. Case studies observe effects in real contexts, recognizing that context is a powerful determinant of both cause and effects.

THE PURPOSE OF CASE STUDY

Case study can be a useful research method that can enable readers to understand how ideas and abstract principles can fit together. Wallace suggests that case study research is aimed at:

- Solving particular problems
- Applying theories into practice
- Generating hypotheses
- Providing illustrations

The case study is concerned with the antecedents of such complex phenomena as delinquency or reading disability. This is most frequently used in a clinical rather than a research setting; it becomes research only to the extent that it permits the deviation of generalizations of relatively broad applicability. In general case studies serve the greatest research functions through the suggestion of hypotheses that can be investigated more adequately by more rigorous techniques**.**

The purpose of case study is not to represent the world, but to represent the case. Case study has been one of important research methodologies in the category of empirical inquiry. Research is 'empirical' when it employs observation, description, and case study as research techniques. On the other hand, Researchers from different disciplines view the term 'case', more or less, in different meanings. Case study is intended to portray, analyze and interpret the uniqueness of real individuals and situations through accessible accounts and to present and represent reality.

CASE STUDIES CAN BE EITHER SINGLE OR MULTIPLE-CASE DESIGNS

Single cases are used to confirm or challenge a theory, or to represent a unique or extreme case. Single-case studies are also ideal for revelatory cases where an observer may have access to a phenomenon that was previously inaccessible. Single-case designs require careful investigation to avoid misrepresentation and to maximize the investigator's access to the evidence. These studies can be holistic or embedded the latter occurring when the same case study involves more than one unit of analysis.

Multiple-case studies follow replication logic. This is not to be confused with sampling logic where a selection is made out of a population, for inclusion in the study. This type of sample selection is improper in a case study. Each individual case study consists of a 'whole' study, in which facts are gathered from various sources and conclusions drawn on those facts

FEATURES OF CASE STUDY

Sturman put it that a distinguishing feature of case studies is that human systems have a wholeness or integrity to them rather than being a loose connection of traits, necessitating in-depth investigation. On these considerations the case study approach has several features as follows:

- It is concerned with a rich and vivid description of events relevant to the case.
- It provides a chronological narrative of events relevant to the case.
- It blends a description of events with the analysis of them.
- It focuses on individual actors or groups of actors, and seeks to understand their perceptions of events.
- It highlights specific events that are relevant to the case.
- The researcher is integrally involved in the case.
- An attempt is made to portray the richness of the case in writing up the report.

PROCESS OF CASE STUDY

A case study, when it is planned or designed, usually may follow the typical frame work of a research arranged by Morrison:

- Orienting decisions
- Research design and methodology
- Data analysis
- Presenting and reporting the results

But in planning a case study, Adelman suggest the following issues should be taken into careful consideration in conducting case studies:

- The use of primary and secondary sources;
- The opportunities to check data;
- Triangulation
- Data collection methods (to be discussed in the following section)
- Data analysis and interpretation, and where appropriate, theory generation;
- The writing of the report.

Thus introduction to case study research proposes six steps are used:

Step 1. Determine and Define the Research Questions

The first step in case study research is to establish a firm research focus to which the researcher can refer over the course of study of a complex phenomenon or object. The researcher establishes the focus of the study by forming questions about the situation or problem to be studied and determining a purpose for the study. The research object in a case study is often a program, an entity, a person, or a group of people. Each object is likely to be intricately connected to political, social, historical, and personal issues, providing wide ranging possibilities for questions and adding complexity to the case study. The researcher investigates the object of the case study in depth using a variety of data gathering methods to produce evidence that leads to understanding of the case and answers the research questions.

The study's questions are most likely to be "how" and "why" questions, and their definition is the first task of the researcher. To assist in targeting and formulating the questions, researchers conduct a literature review. This review establishes what research has been previously conducted and leads to refined, insightful questions about the problem. Careful definition of the questions at the start pinpoints where to look for evidence and helps determine the methods of analysis to be used in the study. The literature review, definition of the purpose of the case study, and early determination of the potential audience for the final report will guide how the study will be designed, conducted, and publicly reported.

Step 2. Select the Cases and Determine Data Gathering and Analysis Techniques

During the design phase of case study research, the researcher determines what approaches to use in selecting single or multiple real-life cases to examine in depth and which instruments and data gathering approaches to use. When using multiple cases, each case is treated as a single case. Each cases conclusions can then be used as information contributing to the whole study, but each case remains a single case. Exemplary case studies carefully select cases and carefully examine the choices available from among many research tools available in order to increase the validity of the study. Careful discrimination at the point of selection also helps erect boundaries around the case.

The researcher must determine whether to study cases which are unique in some way or cases which are considered typical and may also select cases to represent a variety of geographic regions, a variety of size parameters, or other parameters. A useful step in the selection process is to repeatedly refer back to the purpose of the study in order to focus attention on where to look for cases and evidence that will satisfy the purpose of the study and answer the research questions posed. Selecting multiple or single cases is a key element, but a case study can include more than one unit of embedded analysis.

A key strength of the case study method involves using multiple sources and techniques in the data gathering process. The researcher determines in advance what evidence to gather and what analysis techniques to use with the data to answer the research questions. Data gathered is normally largely qualitative, but it may also be quantitative. Tools to collect data can include surveys, interviews, documentation review, observation, and even the collection of physical artifacts. He list some other possible techniques catering for different aims and approaches to data collection as follows:

- Naturalistic and descriptive observation
- Narrative diaries
- Unstructured and ethnographic interviews
- Verbal reports
- Collection of existing information

In the case of case analysis, the wide range of ways includes correlation, tabulation, tallying, coding, thematic frequency and saliency, quantitative content analysis, and so on Stake and Yin identified six sources of evidence in case studies.

Archival documents can be service records, organizational records, and lists of names, survey data, and other such records. The investigator has to be careful in evaluating the accuracy of the records before using them.

Interviews are one of the most important sources of case study information. There are several forms of interviews that are possible: Open-ended, Focused, and Structured or survey. In an open-ended interview, respondents are asked to comment about certain events. They may propose solutions or provide insight into events. They may also corroborate evidence obtained from other sources. The researcher must avoid becoming dependent on a single informant, and seek the same data from other sources to verify its authenticity.

The focused interview is used in a situation where the respondent is interviewed for a short period of time, usually answering set questions. This technique is often used to confirm data collected from another source.

The structured interview is similar to a survey. The questions are detailed and developed in advance, much as they are in a survey

Direct observation occurs when a field visit is conducted during the case study. It could be as simple as casual data collection activities. This technique is useful for providing additional information about the topic being studied. Participant-observation makes the researcher into an active participant in the events being studied. This often occurs in studies of groups. The technique provides some unusual opportunities for collecting data.

Physical artifacts can be physical evidence that may be collected during the perspective of the researcher can be broadened as a result of the discovery.

It is important to keep in mind that not all sources are relevant for all case studies the investigator should be capable of dealing with all of them, should it be necessary, but each case will present different opportunities for data collection.

There are some conditions that arise when a case researcher must start data collection before the study questions have been defined Another important point to review is the benefit of using rival hypotheses and theories as a means of adding quality control to the case study. This improves the perception of the fairness and serious thinking of the researcher.

Throughout the design phase, researchers must ensure that the study is well constructed to ensure construct validity, internal validity, external validity, and reliability. Construct validity requires the researcher to use the correct measures for the concepts being studied. Internal validity that certain conditions lead to other conditions and requires the use of multiple pieces of evidence from multiple sources to uncover convergent lines of inquiry. The researcher strives to establish a chain of evidence forward and backward. External validity reflects whether or not findings are able to generalize beyond the immediate case or cases; the more variations in places, people, and procedures a case study can withstand and still yield the same findings, the more external validity. Techniques such as cross-case examination and within-case examination along with literature review help ensure external validity.

Reliability refers to the stability, accuracy, and precision of measurement. Exemplary case study design ensures that the procedures used are well documented and can be repeated with the same results over and over again.

Step 3. Prepare to Collect the Data

Because case study research generates a large amount of data from multiple sources, systematic organization of the data is important to prevent the researcher from becoming overwhelmed by the amount of data and to prevent the researcher from losing sight of the original research purpose and questions. Advance preparation assists in handling large amounts of data in a documented and systematic fashion. Researchers prepare databases to assist with categorizing, sorting, storing, and retrieving data for analysis.

The investigator training program covers the basic concepts of the study, terminology, processes, and methods, and teaches investigators how to properly apply the techniques being used in the study. The program also trains investigators to understand how the gathering of data using multiple techniques strengthens the study by providing opportunities for triangulation during the analysis phase of the study. The program covers protocols for case study research, including time deadlines, formats for narrative reporting and field notes, guidelines for collection of documents, and guidelines for field procedures to be used.

Investigators need to be good listeners who can hear exactly the words being used by those interviewed. Qualifications for investigators also include being able to ask good questions and interpret answers. Good investigators review documents looking for facts, but also read between the lines and pursue collaborative evidence elsewhere when that seems appropriate.

After investigators are trained, the final advance preparation step is to select a pilot site and conduct a pilot test using each data gathering method so that problematic areas can be uncovered and corrected. Researchers need to anticipate key problems and events, identify key people, prepare letters of introduction, establish rules for confidentiality, and actively seek opportunities to revisit and revise the research design in order to address and add to the original set of research questions.

Step 4. Collect Data in the Field

The researcher must collect and store multiple sources of evidence comprehensively and systematically, in formats that can be referenced and sorted so that converging lines of inquiry and patterns can be uncovered. Researchers carefully observe the object of the case study and identify causal factors associated with the observed phenomenon. Renegotiation of arrangements with the objects of the study or addition of questions to interviews may be necessary as the study progresses. Case study research is flexible, but when changes are made, they are documented systematically.

Good case studies use field notes and databases to categorize and reference data so that it is readily available for subsequent reinterpretation. Field notes record feelings and intuitive hunches, pose questions, and document the work in progress. They record testimonies, stories, and illustrations which can be used in later reports. They may warn of impending bias because of the detailed exposure of the client to special attention, or give an early signal that a pattern is emerging. They assist in determining whether or not the inquiry needs to be reformulated or redefined based on what is being observed. Field notes should be kept separate from the data being collected and stored for analysis.

Step 5. Evaluate and Analyze the Evidence

This aspect of the case study methodology is the least developed .As a result, some researchers have suggested that if the study were made conducive to statistical analysis, the process would be easier and more acceptable. This quantitative approach would be appealing to some of the critics of the case study methodology. Miles and Huberman suggested analytic techniques such as rearranging the arrays, placing the evidence in a matrix of categories, creating flowcharts or data displays, tabulating the frequency of different events, using means, variances and cross tabulations to examine the relationships between variables, and other such techniques to facilitate analysis.

Step 6. Prepare the report

The guide for the case study report is often neglected, but case studies do not have the uniform outline, as do other research reports. It is essential to plan this report as the case develops, to avoid problems at the end.

Exemplary case studies report the data in a way that transforms a complex issue into one that can be understood, allowing the reader to question and examine the study and reach an understanding independent of the researcher. The goal of the written report is to portray a complex problem in a way that conveys a vicarious experience to the reader. Case studies present data in very publicly accessible ways and may lead the reader to apply the experience in his or her own real-life situation. Researchers pay particular attention to displaying sufficient evidence to gain the readers confidence that all avenues have been explored, clearly communicating the boundaries of the case, and giving special attention to conflicting propositions

Techniques for composing the report can include handling each case as a separate chapter or treating the case as a chronological recounting. Some researchers report the case study as a story. During the report preparation process, researchers critically examine the document looking for ways the report is incomplete.

The researcher uses representative audience groups to review and comment on the draft document. Based on the comments, the researcher rewrites and makes revisions. Some case study researchers suggest that the document review audience include a journalist and some suggest that the documents should be reviewed by the participants in the study.

APPLYING THE CASE STUDY METHOD TO AN ELECTRONIC COMMUNITY NETWORK

By way of example, we apply these six steps to an example study of multiple participants in an electronic community network. All participants are non-profit organizations which have chosen an electronic community network on the World Wide Web as a method of delivering information to the public. The case study method is applicable to this set of users because it can be used to examine the issue of whether or not the electronic community network is beneficial in some way to the organization and what those benefits might be

Step 1. Determine and Define the Research Questions- In general, electronic community networks have three distinct types of users, each one a good candidate for case study research. The three groups of users include people around the world who use the electronic community network, the non-profit organizations using the electronic community network to provide information to potential users of their services, and the "community" that forms as the result of interacting with other participants on the electronic community network.

Step 2. Select the Cases and Determine Data Gathering and Analysis Techniques

Many communities have constructed electronic community networks on the World Wide Web. At the outset of the design phase, the researcher determines that only one of these networks will be studied and further sets the study boundaries to include only some of the organizations represented on that one network. The researcher contacts the Board of Directors of the community network, who is open to the idea of the case study. The researcher also gathers computer generated log data from the network and, using this data, determines that an in-depth study of representative organizations from four categories-health care, environmental, education, and religious - is feasible

Step 3. Prepare to Collect the Data

The researcher prepares to collect data by first contacting each organization to be studied to gain their cooperation, explain the purpose of the study, and assemble key contact information. Since data to be collected and examined includes organizational documents, the researcher states his intent to request copies of these documents, and plans for storage, classification, and retrieval of these items, as well as the interview and survey data. The researcher develops a formal investigator training program to include seminar topics on non-profit organizations and their structures in each of the four categories selected for this study. The training program also includes practice sessions in conducting open-ended interviews and documenting sources, suggested field notes formats, and a detailed explanation of the purpose of the case study. The researcher selects a fifth case as a pilot case, and the investigators apply the data gathering tools to the pilot case to determine whether the planned timeline is feasible and whether or not the interview and survey questions are appropriate and effective. Based on the results of the pilot, the researcher makes adjustments and assigns investigators particular cases which become their area of expertise in the evaluation and analysis of the data

Step 4. Collect Data in the Field

Investigators first arrange to visit with the Board of Directors of each organization as a group and ask for copies of the organization's mission, news clippings, brochures, and any other written material describing the organization and its purpose. The investigator reviews the purpose of the study with the entire Board, schedules individual interview times with as many Board members as can cooperate, confirms key contact data, and requests that all Board members respond to the written survey which will be mailed later.

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The investigators field notes record impressions and questions that might assist with the interpretation of the interview data. The investigator makes note of stories told during open-ended interviews and flags them for potential use in the final report. Data is entered into the database.

Step 5. Evaluate and Analyze the Data

Within-case analysis is the first analysis technique used with each non-profit organization under study. The assigned investigator studies each organizations written documentation and survey response data as a separate case to identify unique patterns within the data for that single organization. Individual investigators prepare detailed case study write-ups for each organization, categorizing interview questions and answers and examining the data for within-group similarities and differences.

Cross-case analysis follows. Investigators examine pairs of cases, categorizing the similarities and differences in each pair. Investigators then examine similar pairs for differences, and dissimilar pairs for similarities. As patterns begin to emerge, certain evidence may stand out as being in conflict with the patterns. In those cases, the investigator conducts follow-up focused interviews to confirm or correct the initial data in order to tie the evidence to the findings and to state relationships in answer to the research questions.

Step 6 Prepare the Report

The outline of the report includes thanking all of the participants, stating the problem, listing the research questions, describing the methods used to conduct the research and any potential flaws in the method used, explaining the data gathering and analysis techniques used, and concluding with the answers to the questions and suggestions for further research. Key features of the report include a retelling of specific stories related to the successes or disappointments experienced by the organizations that were conveyed during data collection and answers or comments illuminating issues directly related to the research questions. The researcher develops each issue using quotations or other details from the data collected, and points out the triangulation of data where applicable. The report also includes confirming and conflicting findings from literature reviews. The report conclusion makes assertions and suggestions for further research activity, so that another researcher may apply these techniques to another electronic community network and its participants to determine whether similar findings are identifiable in other communities. Final report distribution includes all participants.

CONCLUSION

The situation with reference to use of case study materials might be greatly clarified, if the investigator understood that the case study method may serve two purposes-

- To determine the antecedents of some particular instance of a phenomenon
- To discover the circumstances common to a number of instances of some condition.

The first type of case study deal with similar problems and, further the scientific study of education .In this respect reports of the case study indicate that it had served the intended purpose. The report contains evidence concerning the initial status of the phenomenon under investigation, a statement of the symptoms observed, conditions drawn ,evidence concerning the supposed antecedents of the unsatisfactory status of the condition under investigation, the remedial adjustments made, and the observed effects, Although it is true that case studies of a particular phenomenon were designed first of all to improve some given condition, they may however, provide suggested procedure for those who deal with similar problems .

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