

QUANTITATIVE AND QUALITATIVE RESEARCH METHODS: SOME STRENGTHS AND WEAKNESSES

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INTRODUCTION

Educational research has made extensive contributions to educational policies, principles of teaching and learning, curricula, classroom instruction, etc. Several methods were used. It can be broadly classified as quantitative and qualitative. Both methods aim to collect data to achieve the research objective. The two methods are not mutually exclusive. They can be used independently or collaboratively. This article discusses both categories of research methods, namely quantitative and qualitative, their historical background, some examples of each method, and their relative strengths and weaknesses. Finally, triangulation methods are suggested. It concludes by looking at how these methods can be used effectively to give a complete picture of the issues raised in education.

QUANTITATIVE RESEARCH

According to Borg and Gall (1989) the main objective of quantitative research is to find causal relationships between variables. In quantitative research, information about the observed behavior of samples is obtained through statistical data collection. The collected data are analyzed numerically (Borg and Gall, 1989; Gall et al., 1996). This type of research is more concerned with objectivity and validity of what is observed. The sample size involved is usually large (Babi, 1989; Bogdan & Bicklen, 1989).

Some techniques are used to collect data. These include interviews, questionnaires or experimental research. Such data can be collected either quantitatively or qualitatively (Smith et al., 1994). Additionally, data, for example interview transcripts can be analyzed in any way (Smith et al., 1994). An important characteristic of quantitative research is that the process of data collection can combine both descriptive and analytical summaries (Smith et al., 1994). Most quantitative research aims to test hypotheses and theories. Alternative explanations of the results and the need for further study are often provoked and challenged (Borg and Gall, 1989).

Generally, quantitative research involves systematic measurement, experimental and quasi-experimental methods, statistical analysis and mathematical models. Quantitative research is more structured, logical, measured, and comprehensive than qualitative research, which is more intuitive, subjective, and focused on fewer subjects. Therefore, Bouma and Atkinson (1995, p. 208) state: "Some topics are best investigated using quantitative approaches while for others, qualitative approaches will yield better results. However in some cases both methods can be used."

Survey Method

The survey method is the most frequently used form of self-research reporting (Gay, 1987). It provides the researcher with an opportunity to collect data from a population to determine the current status of that population with respect to one or more variables. It has been used in many fields such as political science, education and economics.

The survey method is a formative research method and can be considered as a systematic data collection tool used in large-scale investigations (Borg and Gall, 1989; Smith et al., 1994). Survey instruments include questionnaires and personal interviews. Information collected through such methods is often quantifiable (Borg and Gall, 1989). When conducting a survey, several tools can be used alone, in combination or in triangulation. The most common tools used in survey research are

mailed questionnaires, face-to-face interviews, and telephone interviews (Gay, 1987). Other methods used to collect survey data include examination records.

Whatever instruments are used, the main purpose of survey research is to obtain standardized information from all subjects in the sample in order to generalize the findings (Gall et al., 1996).

Type of Survey and Data Analysis

Borg and Gall (1989) mention two types of surveys. They are cross-sectional survey and longitudinal survey. Cross-sectional survey data are collected from a predetermined population sample (Borg and Gall, 1989). The information is collected in a moment although the actual time to complete may take more than a day or a month. Generally, it can be analyzed in two ways, i.e. description of single variables and exploration of relationships.

In the description of single variables, the data represents the result of the total sample distributed which may include multiple alternative responses in a single questionnaire. In the second type, surveys are used to explore the relationship between two or more variables (Borg and Gall, 1989). Questionnaire items can refer to past, present, and future events.

In longitudinal surveys, data are collected at different points in time (Borg and Gall, 1989). The aim is to enable the study of change or time-series associations. While cross-sectional studies are limited by time factors, longitudinal surveys are not. As a result, respondents' faulty recall does not distort the data (Borg and Gall, 1989).

Questionnaire

Most data in quantitative research can be obtained through questionnaires (Smith et al., 1994). Questionnaires are often used for large-scale surveys because they are less time-consuming and less expensive (Gay, 1987). Although questionnaires are usually mailed, they can also be administered in person.

The first step in designing a questionnaire is to define the problem and list the specific objectives to be achieved or the hypotheses to be tested by the questionnaire. It is important to keep in mind the methods of data analysis used to analyze the returned questionnaires that form the questionnaire (Borg and Gall, 1989).

The second step is pattern recognition. It is important to include appropriate subjects who are knowledgeable and willing to provide information (Borg and Gall, 1989). However, there are cases where questionnaires need to be sent to groups that do not have the desired information, but most questionnaire studies conducted in education are aimed at specific professional groups or authorities (Borg and Gall, 1989).

Advantages of questionnaires, particularly mailed questionnaires, include low cost and speed of dissemination and collection (Gay, 1987; Borg and Gall, 1989). It can also cover a much wider geographical area than other tools such as interviews or experimental research. In fact, self-administered questionnaires have similar advantages to the use of interviews.

It enables establishing good rapport with the respondents, clarifying the purpose of the study and clarifying things (Gay, 1987). This allows for a larger number of subjects to be sampled. It simply requires being literate in the subject matter and understanding the questions (Kathwohl, 1993).

Questionnaires have been widely used in quantitative research because their standardized, highly structured design is compatible with quantitative approaches. They are easy to use and analyze but on the other hand, the design is by no means simple. The main decisions to be made while designing a questionnaire are the type of questions and the overall format of the questionnaire.

The questionnaire, however, does not allow the respondents to express their opinions and feelings freely. Another disadvantage is that it is impossible to modify items after the questionnaire is distributed, even if they are unclear to some respondents (Oppenheim, 1992; Borg & Gall, 1989). After that no ambiguity can be clarified. Therefore, the items should be carefully paraphrased and

segmented so that the response is definite and there is no confusion about the meaning of the response.

A serious problem with questionnaires is non-response (Kratwohl, 1993). Since it usually involves a large sample of volunteers, the researcher has no right to force them to return the questionnaire, even if self-addressed envelopes with stamps are used. Sometimes the return can be delayed (Bryman, 1989).

QUALITATIVE RESEARCH

Qualitative research models were primarily developed in social science research. It involves a certain philosophy and strategy to boot. These types of research include naturalistic, ethnographic, participant observational, case studies, and subjective or post hoc studies. Although each has a slightly different approach, they are similar in certain respects although they vary from user to user and over time (Bogdan & Biklen, 1982; Borg & Gall, 1989).

According to Denzin and Lincoln (1994), qualitative research is "multimethod in its focus, including an interpretive, naturalistic approach to its subject matter. This means that the qualitative researcher studies things in their natural settings, trying to make sense or interpretation of phenomena.

In terms of meaning, people brought to them." (Denzin and Lincoln, 1994, p. 2). Manen (1983) in Borg and Gall (1989) defines qualitative method as "a range of interpretive techniques that attempt to describe, decode, translate, and otherwise attune to meaning, not frequency, but some more or less naturally occurring phenomenon in the social world." (Manen, 1983, p. 9).

A qualitative researcher is a 'first informer' (Bogdan & Binklen, 1982) who obtains information by primarily collecting oral data through intensive case studies and then analyzes the data. This is one of the reasons why qualitative research is more difficult because the researcher himself/herself is the main instrument of data collection (Borg and Gall, 1989).

Qualitative researchers also avoid approaching studies to test specific questions or hypotheses (Bogdan & Binklen, 1982; Borg & Gall, 1989). Instead, they believe that finding answers to questions should be one of the products of data collection rather than proving a hypothesis. Research can be structured through the study itself, not through the presentation of any preconceived ideas or precise research design.

Because qualitative researchers are themselves the primary means of data collection, they rely partly or entirely on their feelings, impressions, and judgment when collecting data (Borg & Gall, 1989; Bogdan & Binklen, 1982). They rely heavily on their own interpretations to make sense of their data. Findings are reported in the form of verbal descriptions rather than as quantitative summaries as in statistical analysis.

According to Borg and Gall (1989) this type of research encourages close interaction with the respondents. The data generated from these interactions reveal people to the researcher and impressions of the researcher. Such "collaborative inquiry," as labeled by Torbert (1981), can improve the validity and utility of findings. This is because most of the phenomena of interest to researchers are internal phenomena such as perceptions and emotions rather than overt behavior.

Qualitative researchers base their research on the assumption that social environments are transient (Borg and Gall, 1989). They therefore develop knowledge by collecting primary verbal data through intensive case studies and subjecting these data to analytical induction.

Qualitative researchers use the natural setting as a direct source of data of which they are the primary instrument (Bogdan and Binklen, 1982). They will go to a particular setting to assess the context, because they believe and assume that the setting influences human behavior in the context in which it occurs and therefore should be observed.

The results are presented in a descriptive manner (Bogdan and Biklen, 1982). This can be in the form of quotations to explain and support the presentation, for example, interview transcripts, field notes, videotapes, personal documents, etc. All findings will be analyzed as closely as possible to the form from which they were recorded or transcribed. Although all are seen as useful aids to comprehensive assessment (Bogdan & Binklen, 1982), only a small amount of data will eventually be used. What is ultimately presented in the research report is "the very tip of the iceberg in that area, and transcript extracts are selected as representative and frequently observed examples of action" (Salisbury, 1986, p. 23).

Qualitative research emphasizes process (Bogdan & Binklen, 1982) and no hypotheses are formulated and tested. Planned strategies indicate how expectations are translated into everyday activities and are activated to explore why and how such situations occur.

Qualitative researchers are more likely to study individual cases (Borg and Gall, 1989) because each individual, class, culture or society is likely to have a particular set of values, feelings and beliefs that can only be explored through an in-depth study of that individual, school or class.

According to Bouma and Atkinson (1995) the essence of qualitative research is to see phenomena from the perspective of the people being studied; Their way of thinking and their view of the world etc. Qualitative research requires the researcher to empathize with the people studied.

This is why qualitative research includes a longitudinal component because the subjects of study are studied over a period of time and the emphasis is on how things happen and change. Qualitative researchers typically provide detailed descriptions of the settings they investigate (Bogdan & Binklen, 1982).

This type of research is relatively unstructured. Because it is so open, the examiner often does not decide in advance what to examine. This open approach allows the researcher to explore unexpected topics that may only be revealed after the investigation begins. Qualitative researchers often reject construct theories until they have begun an investigation.

In summary, qualitative research refers to any social science study that produces results that cannot be obtained through statistical procedures or other methods of validation. Although some data may be quantified, the analysis is generally qualitative. It can refer to research related to people's lives, their stories and behaviour, and it can also be used to examine institutions, relationships and social movements. Research conducted in this way produces descriptive data such as people's own spoken or written words or observable behavior. Methods used by qualitative researchers include: participant observation, unstructured interviews, life history.

Ethnographic Method

One research method, which is classified as qualitative research, is ethnography. Anthropologists have introduced and widely used ethnographic methods of research over the years. Although this is a new method in the field of education, the importance of this method has attracted many educational researchers. It provides a thorough and analytical description of the intact culture view (Borg and Gall, 1989).

In this method the researcher tries to immerse himself in a setting and become part of a group, in order to understand what meaning and importance people place on their own and others' behavior (Smith et al., 1994). Everything that happens in the setting will be constantly monitored and researchers will try to literally record it while it exists. Data will be collected from several variables over an extended period of time. According to Gay (1987), variables to be investigated are studied where they occur naturally and are not under any environmental control of the researcher.

In education, the setting is usually on a smaller scale such as a classroom or even a school. This is because an educational institution has a great influence on the behavior of its people such as

students, teachers and principals. Ethnographers work by observing many aspects of learning environments to identify factors associated with effective and/or ineffective environments (Feinberg, 1979). Ethnography is a method of research based on the belief that behavior is significantly influenced by the environment in which it occurs. "...if we are to generalize our findings to real-world settings, the findings must be drawn from research conducted in a real-world setting" (Gay, 1987, p. 121).

To conduct a study, the ethnographer first plans the research study, defines and refines the research problem in which they are interested, and finds the most appropriate environment or study setting and effective level of participants. Their purpose is not to test any hypothesis. Attempts will be made to derive specific, testable hypotheses that explain the observed behavior (Gay, 1987; Borg and Gall, 1989; Gall et al., 1996).

This type of research may use participant observation and/or non-participant observation (Gay, 1987; Borg & Gall, 1989). According to Gay (1987), ethnographic studies are characterized by some form of participant observation at an explicit level. When collecting data, ethnographers use a variety of strategies in conjunction with observation, both verbal and non-verbal (Pelto & Pelto, 1978). Verbal strategies include both structured and unstructured interviewing, in which there is interaction between the researcher and the subject to obtain the required data. Non-verbal strategies, for example, include tape recorders, field notes and diaries which according to Gay (1987) are less disruptive and less likely to affect the behavior being studied.

Participant Observation

It is one of the main techniques used in ethnographic research (Skager and Werberg, 1971). In this type of research the researcher's investigations are flexible and the details of the approach are often changed as the research progresses. According to Robson (1995) this is because a researcher who begins an investigation with a specific hypothesis may create misunderstandings in the setting. However, participants define the setting and their view may not be known until the investigation begins (Bogdan & Biklen, 1983; Walker, 1985; Gay, 1987). The observer becomes part of the field in which subjects are observed so that they can provide an inside view because the inside view can be very different from the outside view (Gay, 1987; Bouma & Atkinson, 1995).

The role of an observer is not easy. There are degrees of participant observation depending on the purpose of the study. Observation can be covert or overt (Gay, 1987; Smith et al., 1994). According to Gay (1987) an implicit situation is one where the observer is present and the subject's permission is sought. In contrast, covert observation is where the subjects are unaware of the researcher's presence. In this situation, the degree of involvement of the participants is high.

Researchers who wish to use this type of research should be well prepared and well trained before starting an investigation (Gay, 1987). A lot of reading and knowledge is required in preparation for understanding and responding to the incidents that are being investigated. When choosing a study site, Bouma and Atkinson (1995) suggested that if there is a choice, researchers should choose a site where subjects are unfamiliar because knowing the people to be investigated in advance can influence their behavior and responses. It is better to investigate a setting where the researcher does not have special expertise because the objective is to evaluate the person, service or performance rather than trying to understand and describe what is happening (Boma & Atkinson, 1995).

Participant observation, especially covert observation, can provide valid findings and useful data (Gay, 1987) because it provides accurate measurement and assessment of immediate experience in terms of settings and events occurring or occurring.

According to Robson (1995), participant observation is the most appropriate technique to gain access to real-life situations. Furthermore, it lacks artificiality compared to other techniques and has a

high potential to provide insight (Gay, 1987). Good reliability and validity are particularly likely to be obtained in formal observations (Robson 1995).

Time spent in observations helps establish a more intimate and informal relationship between the observer and the informant (Cohen & Mannion, 1989). The more time spent, the more data can be collected and the more information can be obtained. Participant's behavior will be its usual normal form.

Some researchers have questioned the validity of information and data obtained in this way (Skager & Weinberg, 1971; Gay, 1987). Participant observation is often criticized as being subjective, biased, impressionistic, idiosyncratic, and lacking in quantitative measurement (Cohen & Mannion, 1989). Observing people, especially without their knowledge, requires ethical standards of behavior, especially when recording their words and behavior (Gay, 1987; Borg & Gall, 1989; Robson, 1995).

The presence of an observer can also influence the participant's setting and behavior (Borg & Gall, 1989). The greater the observer involvement, the more biased the observation may be (Gay, 1987; Robson, 1995).

The observation method is also more time consuming compared to other methods of data collection (Borg and Gall, 1989; Gall et al., 1996). More time needs to be spent in the field to obtain information from informants and to record all the happenings and behavior. Analyzing data also takes time (Borgdan & Binklen, 1982).

When people are used as instruments, allowance must be made for some bias (Cohen & Mannion, 1989; Robson, 1995). Certain aspects of the surroundings may be given more attention than others. Personal factors like interest, experience, expectation, knowledge etc. can affect observation. Participant observation is more likely to involve the study and group members emotionally (Skager & Weinberg, 1971). This may reduce the objectivity of the study.

Non Participant Observation

In this type of observation the researcher is not directly involved in the observed situation (Gay, 1987; Borg and Gall, 1989). The observer looks in from the outside and does not interact with the subjects. Gay (1987) divided these types of observation into: naturalistic observation and imitative observation. An example of naturalistic observation is that used by Piaget in his study of children's cognitive development. In his study, specific behavioral development according to cognitive theory was observed without any control or intervention in the subjects. General behavior that occurred during observation was studied and recorded. Other examples of naturalistic observation include behavior of students in the canteen during recess and behavior of teachers during meetings etc.

Cohen and Mannion (1989) suggested that the best way to be a non-participant observer is to sit at the back of the classroom and record what happens. But the presence of an observer often changes the observed situation (Gall et al., 1996). Moreover, observational data can only be partially observed due to the absence or distraction of the observer (Gall et al., 1996). Although reliability and validity are high, it may lose complexity and completeness because informants find it difficult to provide accurate information and act in the same manner (Robson, 1995).

In some cases it is difficult to be objective, especially if the observer already has prior knowledge of the informants' way of life (Robson, 1995). Although trust can be easily developed with informants, there may be difficulties in gaining respect from other group members when faced with the role of an observer. As a result, behavior and actions can become artificial and hesitant. In educational settings such as schools where hierarchical structure is important, more senior staff may resent being observed or questioned by a more junior member (Robson, 1995).

Interview

Interview is a commonly used technique in quantitative and qualitative research. It is used to gather information and develop hypotheses through dialogue (Cohen & Mannion, 1989). Cannell and Khan (1968) defined research interview as 'a conversation between two persons initiated by the interviewer with the specific purpose of obtaining relevant information'. It focuses on the content specified by the research objectives and the direct verbal interaction between the researcher and the informant. It is a verbal exchange between individuals and the response may be limited to one word or may require a long verbal discussion.

Cohen and Mannion (1987) stated three purposes of interviewing. First, the interview enables respondents to express their feelings, preferences and beliefs. Another purpose of the research interview is to test the hypotheses of the new ideas proposed by the researcher and to identify variations and relationships between them. Finally, interviews can be used with other research methods to follow up on unexpected results, test the validity of other methods, or learn about respondents' motivations and reasons for behaving as they do (Kerlinger, 1970).

According to Cohen and Mannion (1987) four types of interviews are typically used as research tools: structured interview, unstructured interview; Undirected interview and focused interview. Usually only the first two are used for academic research purposes. A structured interview is one in which the content and procedures are organized in advance and the sequence is planned. The wording of the questions is determined by the schedule and the interviewer has little freedom to make changes (Cohen & Mannion, 1987). A structured interview involves a series of closed-form questions and does not follow up on answers to gain more depth.

In contrast, an unstructured interview is more open, allowing more flexibility and freedom for both researcher and subject, although the researcher has control over the research purpose, questions, content order, and wording (Kerlinger, 1970). This type of interview is more casual but planned. The objective is to establish a good rapport between the informant and the interviewer as per the structured format. In a semi-structured interview, the researcher as the interviewer asks carefully worded questions and probes more deeply using open-ended questions. The aim is to get more in-depth information. Finally, an unstructured interview does not involve any detailed guidelines. Questions are asked that prompt the respondents to provide the desired information. It is highly subjective and time consuming (Borg and Gall, 1989).

Different types of interviews are used depending on the purpose and interest of the researcher. Three major types of interviews have been developed for a specific purpose and research context: key informant interviews, survey interviews, and group interviews (Borg et al., 1996).

Survey interviews are used to supplement data collected through other methods of research. Goetz and LeCoupte (1984) described three methods of survey interviewing: confirmatory survey interviewing, participant-structured interviewing, and project techniques. A confirmatory survey interview is a structured interview, which confirms previous findings. This can be useful in large-scale questionnaire studies where in-depth interviews cannot be conducted due to large numbers of respondents or geographical constraints. Participant construct interviews are used to obtain information about the participant's physical structure and social world. The projection technique uses ambiguous stimuli that cannot be observed in the natural environment to create subconscious perceptions (Borg and Gall, 1989).

Group interviews consist of a group of individuals who have been brought together for a specific purpose of research and are asked questions at the same time and place.

A major advantage of interviews is their adaptability. A skilled interviewer can follow up on a respondent's answer to elicit more information and clarify unclear statements (Borg et al., 1996).

Because subjects can establish rapport and trust with the interviewer, all questions can be explained more clearly to increase interest and encourage response. This makes it possible to obtain information that the individual might not otherwise have provided (Borg et al., 1996).

However, these advantages are offset by some limitations. It is difficult to standardize the interview situation so that the interviewer cannot influence the respondents to answer the questions in a certain way (Borg et al., 1996). Interviews cannot remain anonymous for respondents. Respondents must disclose their identity to the interviewer, although the interviewer may analyze and report the interview data so that participants' identities are not revealed (Borg et al., 1996).

Each of the methods discussed above has its own strengths and weaknesses and are not necessarily mutually exclusive. Each can be used either independently or in conjunction with the others. According to Robson (1995), in almost all cases research questions can be answered using more than one method. Meanwhile, Babbie (1989) referring to the study of McRay (1981) states that the best research is that which uses both quantitative and qualitative methods.

TRIANGULATION

Triangulation is the process of using more than one source to confirm information and data from different sources and to confirm the observations of different observers and different methods of data collection (Kratwohl, 1993, p. 329). Triangulation has the advantage of giving the study high validity, accuracy and reliability (Abrahamson, 1983; Borg and Gall, 1989; Cohen and Mannion, 1989; Smith et al., 1994; Gall et al., 1996) and confirms the reliability of the collected data (Babbie, 1989).

As Baby (1989) points out there is no single foolproof method. In fact, recently there has been a trend towards using both methods of data collection and analysis in educational research. In fact, Robson (1995) supports this by stating that using more than one method can provide significant benefits. The triangle is not an end in itself; This is an ingenious way to maximize the data collected (Todd, 1979).

Which Methods for Educational Research?

The scientific paradigm has very successfully dominated social inquiry for the past half century. This early dominance in the social sciences was established by the quantitative approach using large-scale survey techniques, and the term measurement became central to the survey and empirical traditions. This tradition, reflected in quantitative indices such as intelligence tests, attitude measurements, and systematic interaction observation schedules, celebrated the scientific paradigm of inquiry. This relates to generalizations to the wider population.

Quantitative methods of inquiry emphasize the use of the following strategies: survey questionnaires, structured interviews and statistical procedures of analysis as their hallmarks. It follows the general basic rules for the validity of scientific propositions: research design, hypotheses, controlled comparisons and data collection, processing of data, statistical analysis for significance, and testing of hypotheses. These types of research methods were in high demand by policymakers who believed in the power of quantitative data for policy-making (McDonald and Walker, Hamilton et al., 1977: 81).

Stake (1967) labeled these methods formal assessment checklists, structured visits by peers, controlled comparisons, and standardized testing. In their zeal to establish the superiority and merits of the methodology, proponents termed it a rigorous, objective, and rigorous approach with a high degree of generalization at the level of analysis. Essentially a form of scientific inquiry with specific specifications and with specific objectives in mind for the collection of specific types of data, in most cases pre-test post-test, firmly anchored on a product-oriented design.

Qualitative methods, on the other hand, emphasize a wide range of strategies, including fieldwork, field research, ethnography, case studies, participant observation, semi-structured and unstructured open-ended interviews, and interpretive processes.

Qualitative evaluators pointed to the inadequacies of the hypothesis-generating approach that characterized the empirical traditions of quantitative methods. This group of educational researchers, for example, Lacy and Gluckman, rooted in social anthropological traditions, argue that educational problems and processes are more complex than can be met within the confines of an agro-botany discipline. Here, the researcher is concerned with reactions, theories, hypotheses and phenomena rather than thinking in terms of parameters, factors and variables.

The versatility of the qualitative approach, as exemplified in participant observation, allows the semi-structured interview technique to observe an event, its antecedents and aftermath, and the interpretation of its meaning by participants and audiences before, during, and after its occurrence. (Sieber, 1977). This approach is interested in providing a deeper understanding of the characteristics of the totality of a situation (Vulliamy et al., 1990:12).

Opting for a strong qualitative tradition, J. Finch asserts that "quantitative work can only document correlations but cannot itself account for them" (Finch, 1985:114). Barry McDonald and Rob Walker also agree, "experimental methods and numerical analyzes cannot adequately answer some of the questions raised" (in Hamilton et al.(ed), 1977). "Such questions are directed at the experience of participants and the nature and variety of transactions that characterize the program's learning environment" (ibid, 181).

Despite these positive statements, the qualitative approach is often characterized as soft, non-rigorous and subjective (Burgees, 1985:3). As mentioned earlier, the qualitative approach includes methods that interact with the subjects of study using these techniques: observation; Formal and informal interview; some systematic calculations; Some documents and artefacts are freed towards collection and study (McCall and Simons, 1969:1).

Stake (1967:523) assigns the term 'informal evaluation' to the qualitative tradition. It provides the following characteristics for this type of assessment. It depends on contingent observation, underlying goals, rules of initiative, and subjective judgment; Often of precious quality—sometimes penetrating and insightful, sometimes superficial and distorted. Sieber (1973) has argued that the historical antagonism between these two approaches prevents either of the two groups from recognizing their strengths and capitalizing on them for the benefit and enrichment of research results. But authorities like Trow and Zeldich (McColl and Simmons, 1969:5-19; 332-337) set the mood for reconciliation and mediation. Trow, in particular, pointed out that no single technique can claim a monopoly on the possibilities of inference. Some methods are appropriate for a particular research problem; He claims that the method of investigation properly determines the problem under investigation. In particular, Zeldich says researchers should ask themselves some pertinent questions. What methods are relevant to the particular topic under investigation? What kind of information is relevant? How can methods be evaluated? The usefulness of methods can be determined by the criteria of 'efficiency' and 'information adequacy' of the particular methods used to collect data.

Sieber (1973) not only states that methods should be used alongside each other but should be integrated over the course of a research project. Depending on the information needs of the research, we can leverage a wide range of techniques. Where methods are not interchangeable, each method can be greatly strengthened by drawing on the unique qualities of the other method. This is because the inherent power of each method is incomparable to other techniques. Therefore the integration of research techniques in a single project opens up great opportunities for mutual benefit in the three major stages of research such as design, data collection and analysis. According to Sieber (1973), the

researcher should ask what methods would be best for the research problem rather than looking for the "best" method.

Mediation between advocates of survey research and field methods led to the new school of researchers using both techniques and seeing little of either in any given study.

Observation, interviews, questionnaires, documentary analysis and so on "are neither inherently qualitative nor quantitative. All dimensions involve judgments in the form of qualities, and all qualitative statements require hierarchy, number and shaping meaning" (Burgees, 1985: 290).

The whole question of reconciliation between the two methods is well summarized by Lacy in a working paper examining the relationship between case studies and theory. He says: "The traditional enemy 'quantitative research' is no longer a polarized opposition. In some areas of research, its false claims are defeated, and in others it is seen as complementary: a friend not an enemy."

Parlett and Dearden (1977) briefly resolve the quantitative-qualitative conflict.

"The myth of the completely neutral researcher may have seen its day," he says. Reflective assessment, which uses both quantitative and qualitative methods and data, can contribute to understanding educational matters in a more realistic way. Each approach has something to do with understanding school systems, and a combination of strategies may well eliminate false claims of superiority of any one method of data collection and interpretation.

CONCLUSION

Thus, no single research method can provide an objective, clear understanding and insight into a problem. Judicious use of strategies from both methods can provide the greatest insight into research questions. Researchers must at the same time keep in mind the limitations of each method and use strategies to reduce contamination.

In the final analysis, it is possible to mix methods without limiting or restricting the positivist or interpretive role of the researcher. An eclectic approach combining both forms of reporting findings may provide an acceptable answer. Qualitative data are presented in the form of measurement and prediction. Qualitative data is used to describe various situations. In a sense it is a mixture of styles and techniques from both quantitative and qualitative methods of inquiry and reporting. The main determinant of methods should be the logical relationship between the chosen field of study and the formulation of research questions and the selection of appropriate research techniques to explore the questions.

An important factor in any research is the selection of research methods that best answer the investigated problem. We do not always need to use the pure form of any research method. Constraints of time and resources, in some situations, do not allow the researcher to adopt the research method in its purest form. Instead, strategies that are useful, efficient and informative will have to be adopted to provide information and approaches to problems and issues. Methodology and strategies should complement and complement each other to inform and clarify issues. It is necessary to provide an opportunity to combine methods and information to present a composite picture.

REFERENCE

1. Abrahamson, M. (1983) Social Research Methods. In Smith, M. E. et al. (1994) Management Research: An Introduction. London: Sage.
2. Bryman, I. A (1989) Research Method and Organizational Studies. London: Unwin Hyman. Burgees, R.G. (ed) (1985a) Issues in Educational Research: Qualitative Methods, Lewes, The Farmer Press.
3. Cannel, C. F. and Kahn, R. L. (1968) Interview. In Borg, W. R. and Gall, M. D. (1989) Educational Research: An Introduction 5th. edn. New York: Longman.
4. Denzin and Lincoln (1994) In Gall, M. D. et al. (1996) Educational Research: An Introduction. New York: Longman.
5. Finch, J. (1985) Social Policy and Evaluation in Burgees, R. G. (ed) (1985) Issues in Educational Research, Lewes: The Falmer Press.
6. Goetz, J. P. and Le Compte, M. D. (1984) Ethnography and Qualitative Design in Educational Research. In Borg, W. R. and Gall, M. D. (1989) Educational Research: An Introduction 5th edn. New York: Longman.
7. Hoy, K. W. and Miskel, C. G. (1991) Educational Administration: Theory, Research Practice. London: Mc Graw-Hill.
8. Kerlinger, F. N. (1970) Foundation of Behavioural Research. New York: Holt, Rinehart and Winston.
9. Parlett, M. and Dearden, G. (ed) (1977) Introduction to Illuminative Evaluation: Studies in Higher Education, California: Pacific Soundings Press.
10. Robson, C. (1995) Real World Research. Oxford: Blackwell.
11. Skager and Weinberg (1971) Fundamental of Educational Research: An Introductory Approach. London: Scott, Foresman and Company.
12. Stake, R. (1967) The Countenance of Educational Evaluation, Teachers' College Record, vol.68.no.7.
13. Todd, D. J. (1979) Mixing Quantitative and qualitative Methods: Triangulation in Action, Administration Science Quarterly, vol. 24, pp.602-611.
14. Vulliamy, G. et al. (1990) Doing Educational Research in Developing Countries, London: The Falmer Press.
15. Walker, R. (1985) an Introduction to Applied Quantitative Research. In Walker, R. (ed.) Applied Qualitative Research. London: Grower.