IOSR Journal of Research & Method in Education (IOSR-JRME)
e-ISSN: 2320–7388,p-ISSN: 2320–737X Volume 5, Issue 3 Ver. IV (May - Jun. 2015), PP 48-51
www.iosrjournals.org

Research Methodology and Approaches

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Abstract: *In this paper various approaches, steps and objectives of research are listed and briefly discussed. This paper discusses four common research approaches, Qualitative, Quantitative, Mixed methods and Advocacy/participatory research, which were commonly used when conducting research. Research is indeed civilization and determines the economic, social and political development of a nation. Research is Systematic investigative process employed to increase or revise current knowledge by discovering new facts. All research Approaches Examine and explore the different claims to knowledge and are designed to address a specific type of research question.*

Key words: *Research, Research approaches, knowledge*

I. Introduction

The secret of various type of development especially cultural development is research, which pushes back the area of the ignorance by discovering new truth, which leads to the better products. A research project may be an expansion on past work in the field. To test the validity of instruments, procedures, or experiments, research may replicate elements of prior projects, or the project as a whole. The primary purposes of basic research are, documentation discovery, interpretation, or the research and development (R&D) of methods and systems for the advancement of human knowledge. Approaches to research depend on epistemologies, which vary considerably both within and between humanities and sciences.

"Research is to see what everybody else has seen and to think what nobody else has thought". (Albert Szent Gyorgyi). Research comprises "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of humans, culture and society, and the use of this stock of knowledge to devise new applications". It is used to establish or confirm facts, reaffirm the results of previous work, solve new or existing problems, support theorems, or develop new theories. Each research method is designed to explore specific research questions and attempts to address the postpositivist approach of challenging the traditional belief of absolute truth.

1.1 Research

Research is the process of collecting, analyzing, and interpreting data in order to understand a phenomenon (Leedy & Ormrod). Research is a logical and systematic search for new and useful information on a particular topic. According to English dictionary research is defined as The systematic investigation and study of materials and sources in order to establish facts and reach new conclusions. Research is defined as Systematic investigative process employed to increase or revise current knowledge by discovering new facts. It is divided into two general categories: (1) Basic research is inquiry aimed at increasing scientific knowledge, and (2) Applied research is effort aimed at using basic research for solving problems or developing new Processes, Product or techniques.

A research can lead to new contributions to the existing knowledge. Only through research it is possible to make progress in a field. Research is indeed civilization and determines the economic, social and political development of a nation. The results of scientific research very often force a change in the philosophical view of problems, which extend far beyond the restricted domain of science itself.

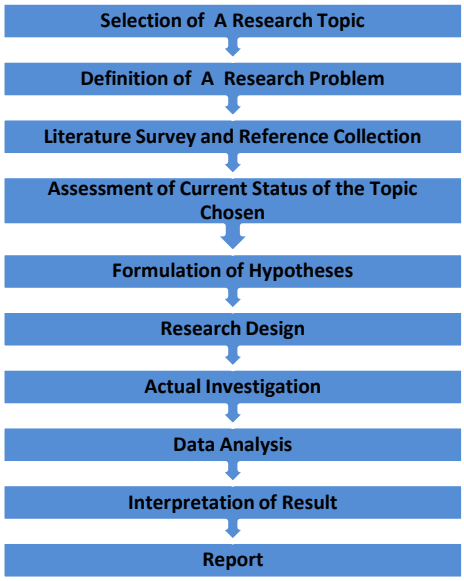
1.2 The Main Objectives of Research are as follows:

1) To discover new facts.
2) To verify and test important facts.
3) To analyze an event or process or phenomenon to identify the cause and effect
4) Relationship.
5) To develop new scientific tools, concepts and theories to solve and understand
6) Scientific and nonscientific problems.
7) To find solutions to scientific, nonscientific and social problems.
8) To overcome or solve the problems occurring in our everyday life.
9) To find out the unknown facts of an event.

10) To solve the unsolved and challenging problems.
11) To find new things.
12) To solve new or existing problems.

1.3 Steps in Research

Whenever a Research problem is to be solved there are several important steps to follow they as follows :



II. Approaches Of Research

1. Quantitative Research.
2. Qualitative Research.
3. Mixed methods Research.
4. Advocacy/participatory Research.

2.1 Quantitative Research

Aliaga and Gunderson (2000) Quantitative research is "Explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics). When we think of quantitative methods, we will probably have specific things in mind. We will probably be thinking of statistics, numbers, and all these thoughts capture some of the essence of quantitative methods.The methodology of a quantitative research maintains the assumption of an empiricist paradigm (Creswell, 2003). Quantitative Research is the systematic empirical investigation of observable phenomena via statistical, mathematical or computational techniques. The objective of quantitative research is to develop and employ mathematical models, theories and/or hypotheses pertaining to phenomena.

There are three broad classifications of quantitative research:

1. Descriptive Research

The descriptive research approach is a basic research method that examines the situation, as it exists in its current state. Descriptive research involves identification of attributes of a particular phenomenon based on an observational basis, or the exploration of correlation between two or more phenomena.

2. Experimental Research

During the experimental research, the researcher investigates the treatment of an intervention into the study group and then measures the outcomes of the treatment. There are three types of exploratory approaches: **pre-experimental**, **true experimental**, and **quasi-experimental** (Leedy & Ormrod). The pre-experimental design involves an independent variable that does not vary or a control group that is not randomly selected. Campbell and Stanley (1963) endorsed the true experimental design, which provides a higher degree of control in the experiment and produces a higher degree of validity. The true experimental designs result in a systemic approach to quantitative data collection involving mathematical models in the analyses. Whereas, the quasi-experimental design involves nonrandom selection of study participants. Therefore, control is limited and true experimentation is not possible. Since the variable cannot be controlled, validity may be sacrificed.

3. Causal Research

In the causal comparative research, the researcher examines how the independent variables reflected by the dependent variables and involves cause and effect relationships between the variables. The factorial design focuses on two or more categories with the independent variables as compared to the dependent variable (Volt, 1999). The causal comparative research design provides the researcher the opportunity to examine the interaction between independent variables and their influence on dependent variables.

2.2 Qualitative Research

Qualitative research is a major field of academic research study, and the basis for awarding thesis and dissertations worldwide. Qualitative research is a holistic approach that involves discovery. Qualitative research is also described as an unfolding model that occurs in a natural setting that enables the researcher to develop a level of detail from high involvement in the actual experiences (Creswell, 1994). One identifier of a qualitative research is the social phenomenon being investigated from the participant's viewpoint.

Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that makes the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them.(Denzin & Lincoln, 2005).

There are five areas of qualitative research: **case study, ethnography study, phenomenological study, grounded theory study, and content analysis.** These five areas are representative of research that is built upon inductive reasoning and associated methodologies.

Qualitative research is aimed at gaining a deep understanding of a specific organization or event, rather than a surface description of a large sample of a population. It aims to provide an explicit rendering of the structure, order and broad patterns found among a group of participants. It is also called ethno methodology or field research.

2.3 Mixed Methods Research

A mixed methods research design is a procedure for collecting, analyzing, and "mixing" both quantitative and qualitative research and methods in a single study to understand a research problem. A mixed methods approach is one in which the researcher tends to base knowledge claims on pragmatic grounds (e.g., consequence-oriented, problem-centered, and pluralistic). It employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problems. The data collection also involves gathering both numeric information (e.g., on instruments) as well as text information (e.g., on interviews) so that the final database represents both quantitative and qualitative information.

Johnson and Onwuegbuzie (2004) hoped that the mixed methods approach to research provided researchers with an alternative to believing that the quantitative and qualitative research approaches are incompatible and, in turn, their associated methods "cannot and should not be mixed" with the mixed methods approach to research, researchers incorporate methods of collecting or analyzing data from the quantitative and qualitative research approaches in a single research study.

2.4 Advocacy / Participatory Research

Advocacy Research One kind of descriptive policy research, carried out by people who are deeply concerned about certain social problems, such as poverty or rape. Their studies seek to measure social problems with a view to heightening public awareness to them and providing a catalyst to policy proposals and other action to ameliorate the problem in question. Occasionally, Advocacy research studies bend their research methods in order to inflate the magnitude of the social problem described, and thereby enhance the case for public action to address the issue. It is a research that seeks to empower the subjects of social inquiry. It is now commonly recognized that power is a fundamental aspect of all research relationships.

An Advocacy/participatory approach arose during the 1980s and 1990s from individuals who felt that the post positivist assumptions imposed structural laws and theories that did not fit marginalized individuals or groups or did not adequately address issues of social justice, historically, some of the advocacy/participatory (or emacipatory) writers have drawn on the works of Marx, Adorno, Marcuse, Habermas, and Freire (Neuman, 2000). More recently, works by Fay (1987), Heron and Reason (1997), and Kemmis and Wilkinson (1998) can be read for this perspective. In the main, these inquires felt that the constructivist stance did not go far enough in advocating for an action agenda to help marginalized people. These researchers believe that inquiry needs to be intertwined with politics and a political agenda. Thus, the research should contain an action agenda for reform that may change the lies of the participants, the institutions in which individuals work or live, and the researcher's life. Moreover, specific issues needed to be addressed that speak to important social issues of the

day, issues such as empowerment, inequality, oppression, domination, suppression, and alienation. The advocacy researcher often begins with one of these issues as the focal point of research. This research also assumes that the inquirer will proceed collaboratively so as to not further marginalize the participants as a result of the inquiry. In this sense, the participants may help design questions, collect data, analyze information, or receive rewards for participating in the research. The "voice" for the participants becomes a united voice for reform and change. This advocacy may mean providing a voice for these participants, raising their consciousness, or advancing an agenda for change to improve the lives of the participants. The researchers may adopt a less neutral position than that which is usually required in scientific research. This might involve interacting informally or even living amongst the research participant. The findings of the research might be reported in more personal terms, often using the precise words of the research participants.

III. Conclusions

The researcher anticipates the type of data needed to respond to the research question. For instance, It is numerical, textural, or both numerical and textural data needed? Based on this assessment, the researcher selects one of the four aforementioned approaches to conduct research. Researchers typically select the quantitative approach to respond to research questions requiring numerical data, the qualitative approach for research questions requiring textural data, and the mixed methods approach for research questions requiring both numerical and textural data. All research Approaches Examine and explore the different claims to knowledge and are designed to address a specific type of research question. Each method allows the researcher to explore and better understand the complexity of a phenomenon.

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