Research is the systematic process of collecting and analyzing

ASSIGN BUSTER

Research as it was defined by Leedy and Ormond (2010) it is the systematic process of collecting and analyzing information to increase our understanding of the phenomenon under study. Again it was defined by Merrian-Webster collegiate dictionary, tenth edition as the ability to search or investigate exhaustively, studious inquiry or examination; especially investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws.

Research was defined by the MBA knowledge base (2010) as an original contribution to the existing stock of knowledge making for its advancement. It is the pursuit of truth with the help of study, observation, comparison and experiment.

Research is all about addressing an issue or asking and answering a question or solving a problem, so firstly identify an issue, Talk with people who want or need the study possibly find out what’s already known about it. Next talk with experts and/or read their reviews and the original research that has been done on the topic. Plan, cost, and do the study accordingly. Write it up and submit it for assessment. A good research work is not complete until it is documented and submit for assessment or better still for publication.

Anytime the topic of research is discussed, a good question that comes to mind is, could research be seen simply as the collecting of information about a particular subject?. In answering this question, I will list below what is unique to all research work. Although research work varies in complexity and duration and but it is understood to follow a certain structural process.

Though step order may vary depending on the subject matter and the researcher, the following steps are usually part of most formal research, both basic and applied.

The features below are distinct and common to every work that is referred to as research work.

CHARACTERISTICS OF RESEARCH WORK

Identification of the topic and subject area

Discovering a need or gap in a system generates question on what is to be done, it is this question that first ignites a chain reaction that leads to a process call research. An inquisitive mind is the beginning of research (Leedy and Ormond 2010). It is in the attempt to resolve this question or problem that research work sought.

Objective definitions

A clear, unambiguous statement of the problem is critical (Leedy & Ormond 2010). The ultimate goal of the research must be set forth in a grammatically complete sentence that specifically and precisely answer the question.

Plan of Action

Research work consisted of a carefully planned itinerary of actions to lead to the final destination. i. e. the research goal. Research is not a blind excursion into the unknown. Researchers plan and design their research work, use a specific methodology in a purposeful way, depending on the work at hand. Apart from identifying the research goal, how one propose to achieve the goal is very important.

Problem Segmentation

It is very helpful when main problems are broken down into little chunks of work that are more manageable. Addressing each of these sub-problems enables the researcher to be on top of the situation at the same time addresses the main problem in a better way. Sometimes if this is not properly done could make the research work more cumbersome and too complex to manage.

Hypothesis

Though an hypothesis in research work cannot be tested rather only supported by surviving rounds of scientific testing which can render it to be " predictive or true" in nature. As stated by Leedy and Ormond, hypothesis is defined as a logical supposition, a reasonable guess, and educated conjecture that provides a tentative explanation for a phenomenon under investigation.

Generally a hypothesis is used to make predictions that can be tested by observing the outcome of an experiment. If the outcome is inconsistent with the hypothesis, then the hypothesis is rejected. However, if the outcome is consistent with the hypothesis, the experiment is said to support the hypothesis. Over time if a particular hypothesis is supported by a growing body of data, they evolve into theories.

A Theory is an organised body of concepts and principles intended to explain to explain a particular phenomenon (Leedy & Ormond 2010).

Making Critical Assumptions

Assumptions are seen as sine qua non of research. The assumptions made must be valid otherwise the research is meaningless. Assumptions are usually self evident, hence the researcher may consider it unnecessary to mention them.

Gathering of data

Research work requires the collection and interpretation of data in an attempt to resolve the problem that initiated the research. Data that human being are unable to interpret are worthless, can never be used to answer any questions.

Iterative

Research is, by its nature, cyclical or more exactly helical. It follows logical, developmental steps. Starts by asking a question, the logical resolution of the problem or tentative answer to the question completes the cycle. In its real sense research is rarely conclusive, it might be more accurately conceived of as a helix, or spiral, in trying to answer one question, one comes across additional problems that needs resolving and so the process must begin anew.

Considering the question above, the answer is NO. The main difference between research and “ information gathering” is that to do research, you must interpret data, draw conclusions and come up with new questions. Research is cyclical, or, as the article says, helical. Answering one question inevitably reveals new questions. Research leads to more research.

Hence the following were listed by Leedy & Ormond as what should not be referred to as research work.

Research is not mere information gathering

Research is not mere transportation of facts from one location to another

Research is not merely searching for information

Research is not a catchword used to get attention

RESEARCH PROCESS

No matter which purpose the research is meant for, the general research procedure is fundamentally the same.

Ask Question

2. The Researcher converts the question to a clearly stated research problem

3. The researcher poses a temporary hypothesis

4. Search begins: Literature survey on the subject

5. Acquire data

6. The data is arranged together into a logical organisational structure

7. The researcher analysed and interprets the data to determine their meaning.

8. Either the data seemingly resolves the problem or not.

Diagrammatic representation of research process

TYPES OF RESEARCH

Many researchers tend to categorise research broadly into two categories:

Basic Research

Applied Research.

In categorising research based on the methodology, it can be broadly categorised into two divisions, each of which are sub divided into smaller categories:

Quantitative Research

Qualitative Research

In practice the two approaches involve similar processes (e. g., Formation of one or more hypothesis, review of related litterature, collection and analysis of data).

QUANTITATIVE

Quantitative research is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. It often starts with a specific hypothesis to be tested. They isolate the variables that are to be tested, control for extraneous variables, use a standardised procedure to collect some form of numerical data, and use statistical procedures to analyse and draw conclusions from the data.

Quantitative researcher seeks explanations and predictions that will generalise to other persons and places, their intent is to establish, confirm, or validate relationships and to develop generalisations that contribute to existing theories. They represent mainstream approach to research, hence carefully structured guidelines exist for conducting them. Concepts, variables, hypothesis and methods of measurement tend to be defined before the study begins and remain the same throughout (Leedy & Ormond 2010). Because all research work relies heavily on logical reasoning, quantitative researchers rely heavily on deductive reasoning, beginning with certain premise e. g. hypothesis and theories and draw logical conclusions from them. Though, it is worth noting that they are not exclusively deductive.

In reporting the result, the quantitative researchers make use of statistics parameters like mean, mode, median to represent the outcome of their research. Results are usually presented in a report that employs formal scientific style. In general, because it is conducted in a scientifically controlled environment like laboratory, it sometimes does not really represent the real naturalistic condition of the participant, it is seen as being artificial. Hence the findings of such research could be flawed as not being generalised rather more specific to a particular environment.

Because quantitative design is appropriate for some specific type of research, it is always advisable to be flexible in its usage, as combining both quantitative and qualitative methods helps us to answer so many research questions, rather than limiting ourselves to only one approach.

QUALITATIVE

This is concerned with qualitative phenomenon, i. e., phenomena relating to or involving quality or kind. Qualities that cannot easily be reduced to numerical values. For instance, when we are interested in investigating the reasons for human behavior, we quite often talk of ‘ Motivation Research’, an important type of qualitative research. This type of research aims at discovering the underlying motives and desires, using in depth interviews for the purpose. They seek a better understanding of complex situations. Attitude or opinion research, i. e., research designed to find out how people feel or what they think about a particular subject or institution is also qualitative research. Qualitative research is specially important in the behavioral sciences where the aim is to discover the underlying motives of human behaviour. Through such research we can analyse the various factors which motivate people to behave in a particular manner or which make people like or dislike a particular thing.

The qualitative research process is more holistic and emergent with specific focus, design, measurement instruments (e. g. Interviews). In data collection, the researchers operate under the assumptions that reality is not easily divided into discrete measurable variables. The data analysis is more subjective in nature and the researcher made a considerable use of inductive reasoning. It is important to note here too that qualitative research is not exclusively inductive.

During reporting, qualitative researchers construct interpretive narratives from their data and try to capture the complexity of the phenomenon under study (Leedy and Ormond 2010).

It may be stated, however, that to apply qualitative research in practice is relatively a difficult job and therefore, while doing such research, one should seek guidance from experimental psychologists.

DESCRIPTIVE RESEARCH

This is the most commonly used research types. Descriptive research includes surveys and fact-finding enquiries of different kinds, equally referred to as Ex post facto. They are often used to discover causes even when the researcher cannot control the variables.

As posited by the MBA team, they are used to obtain information concerning the current status of the phenomena to describe " what exists" with respect to variables or conditions in a situation. The methods involved range from the survey which describes the status quo, the correlation study which investigates the relationship between variables, to developmental studies which seek to determine changes over time.

There are two basic types of descriptive research: longitudinal studies and cross-sectional studies.

Longitudinal studies: This is time series analyses that make repeated measurements of the same individuals, thus allowing one to monitor behaviour such as brand-switching. However, longitudinal studies are not necessarily representative since many people may refuse to participate because of the commitment required.

Cross-sectional studies: This study makes use of a sample of the population to make measurements at a specific point in time. A special type of cross-

sectional analysis is a cohort analysis, which tracks an aggregate of individuals who experience the same event within the same time interval over time. Cohort analyses are useful for long-term forecasting of product demand

FEATURES

The researcher has no control over the variables, he can only report what has happened or what is happening.

ANALYTICAL RESEARCH

As posited by Nic Haffner in his paper " The Fundamentals of Writing Argumentative and Analytical Research Papers". The researcher is expected to have thoroughly explored the topic being covered such a way that his/her opinion on the topic could be viewed as an expert knowledge. The researcher is expected to use facts or information already available, and analyze them to make a critical evaluation of the topic under discuss.

The goal is to provide expert knowledge in a way that is broken down into the writer's own words. In this research the writer answers the research question objectively by coming into the project with no pre-conceived opinions about the subject.

Once the writer becomes familiar with the topic they are able to piece together their findings that best represent the purpose of the paper. Put simply, an analytical research paper combines serious contemplation with critical evaluations of the question.

APPLIED RESEARCH

This is often referred to as Action research. It refers to scientific study and research that seeks to solve practical problems. Applied research is used to find solutions to everyday problems facing a society or an industrial/business organisation, cure illness, and develop innovative technologies. Research aimed at certain conclusions facing a concrete social or business problem is an example of applied research. Research to identify social, economic or political trends that may affect a particular institution or copy research or the marketing research are examples of applied research. The central aim of applied research is to discover a solution for some pressing practical problems.

FUNDAMENTAL RESEARCH

As defined in wikipaedia. It is defined as the research carried out to increase understanding of fundamental principles. Many at times the end results have no direct or immediate commercial benefits. However, in the long term it is the basis for many commercial products and applied research. It advances fundamental knowledge about the human world, it challenges the status quo. Fundamental research is the source of most new scientific ideas, it can be exploratory, descriptive, or explanatory; however, explanatory research is the most common.

Basic research generates new ideas, principles and theories, which may not be immediately utilized; though are the foundations of modern progress and development in different fields. Today’s computers could not exist without the pure research in mathematics conducted over a century ago, for which there was no known practical application at that time. Basic research rarely

helps practitioners directly with their everyday concerns. Nevertheless, it stimulates new ways of thinking about deviance that have the potential to revolutionize and dramatically improve how practitioners deal with a problem. A new idea or fundamental knowledge is not generated only, basic research can build new knowledge. Nonetheless, basic research is essential for nourishing the expansion of knowledge. The aim of basic research is directed towards finding information that has a broad base of applications and thus, adds to the already existing organized body of scientific knowledge. Basic research is mainly carried out by universities.

CONCEPTUAL RESEARCH

This is related to some abstract idea(s) or theory. It is a type of intermediate theory that attempt to connect to all aspects of inquiry (e. g., problem definition, purpose, literature review, methodology, data collection and analysis). Conceptual frameworks can act like maps that give coherence to empirical inquiry. Because conceptual frameworks are potentially so close to empirical inquiry, they take different forms depending upon the research question or problem.

It is generally used by philosophers and thinkers to develop new concepts or to reinterpret existing ones.

EMPIRICAL RESEARCH

This is a research that relies on experience or observation alone, often without due regard for system and theory. It is data based research, coming up with conclusions which are capable of being verified by observation or experiment. It is also call experimental research, in such a research it is

necessary to get at facts firsthand, at their source, and actively to go about doing certain things to stimulate the production of desired information. In such a research, die researcher must first provide himself with a working hypothesis or guess as to the probable results. He then works to get enough facts (data) to prove or disprove his hypothesis. He then sets up experimental designs which he thinks will manipulate the persons or the materials concerned so as to bring forth the desired information. Such research is thus characterised by the experimenter’s control over the variables under study and his deliberate manipulation of one of them to study its effects. Empirical research is appropriate when proof is sought that certain variables affect other variables in some way. Evidence gathered through experiments or empirical studies is today considered to be the most powerful support possible for a given hypothesis.

OTHER TYPES OF RESEARCH

All other types of research are variations of one or more of the above stated approaches, based on either the purpose of research, or the time required to accomplish research, on the environment in which research is done, or on the basis of some other similar factor. Form the point of view of time, we can think of research either as one-time research or longitudinal research. In the former case the research is confined to a single time-period, whereas in the latter case the research is carried on over several time-periods. Research can be field-setting research or laboratory research or simulation research, depending upon the environment in which it is to be carried out. Research can as well be understood as clinical or diagnostic research. Such research follow case-study methods or indepth approaches to reach the basic causal

relations. Such studies usually go deep into the causes of things or events that interest us, using very small samples and very deep probing data gathering devices. The research may be exploratory or it may be formalized. The objective of exploratory research is the development of hypotheses rather than their testing, whereas formalized research studies are those with substantial structure and with specific hypotheses to be tested. Historical research is that which utilizes historical sources like documents, remains, etc. to study events or ideas of the past, including the philosophy of persons and groups at any remote point of time. Research can also be classified as conclusion-oriented and decision oriented. While doing conclusion oriented research, a researcher is free to pick up a problem, redesign the enquiry as he proceeds and is prepared to conceptualize as he wishes. Decision-oriented research is always for the need of a decision maker and the researcher in this case is not free to embark upon research according to his own inclination. Operations research is an example of decision oriented research since it is a scientific method of providing executive departments with a quantitative basis for decisions regarding operations under their control.

GENERAL TOOLS OF RESEARCH

Caution must be exercised when discussing research tools not to equate them with methodology of research. A research tool as defined by Leedy and Ormond is a specific mechanism or strategy the researcher uses to collect, manipulate or interpret data whilst the research methodology is the general approach the researcher takes in carrying out the research project, though

to some extent this approach dictates the particular tools the researcher selects.

The following are six general tools of research

Research Tools

The Library and Its Resources.

The Computer and Its Software.

Techniques of Measurement.

Statistics.

The Human Mind.

Facility with Language

IMPORTANCE OF RESEARCH

Because research is designed to solve particular existing problems, so its vitality to human existence is beyond any doubt very important. Importance of research work cut across all human endeavours, ranging from medicines to politics.

For example, business research study can be very useful in analyzing the market and demand for the new product. Companies which conduct research studies before investing in any business can always reduce their risks and uncertainties. Research study can also give food for thought to the new researchers. Moreover, from educational perspective, a research study can enhance the critical and analytical thinking of the students, therefore, in

most of the institutions small research studies are made as essential component of the syllabus. Research helps build the respect, credibility and promote professionalism

In conclusion I will like to make reference to Wayne et al (2008) in their book " The craft of research" emphasised the importance of research in that without a good and trustworthy published research work all of us would have been locked in the opinion of the moment, prisoners of what we alone experienced or dupes to whatever we are told. In all the definition above, we found out that it is the responsibility of the researcher to contribute to the understanding of the phenomenon and to communicate that understanding to others.

Learning about doing research as rightly put by Leedy and Ormond (2010), are of value far beyond that of merely satisfying an academic program requirement. Research methods and their application to real world problems are skills that will serve the world for as long as the world exists, because the world is full of problems that beg for solutions, consequently it's full of research activity. Life saving medical interventions and ground breaking technological innovations are all products of research activity. Hence I agree completely with Leedy and Ormond with their position that research is more than mere academic banality, it is vital and it's a dynamic force that is indispensable to the health and well being of planet earth and it humans and non-human inhabitants.