Chapter 1
The Meaning of Research

Definition of Research

Research is defined as the "careful, diligent, and exhaustive investigation of a specific matter, having as its aim the advancement of mankind's knowledge" (Manheim, 1977). What is definitely implied in this definition, and which is a basic assumption of any research, is that knowledge is desirable and is preferable to ignorance. More recently, Brew (2001) observed that many definitions of research include the following features (p.21):

1. It is "finding out something and making it public."
2. It is providing a "means of generating, testing and validating knowledge."
3. It is a "systematic process of investigation, the general purposes of which is to contribute to the body of knowledge that shapes and guides academic and/or practice disciplines" (cited from Powers and Knapp, 1995).
4. It is "about advancing knowledge and understanding" (cited from Oliver, 1997:3).

Another critical aspect of the definition of research is the distinction between scientific and non-scientific research. The conservatives of science, as may be indicated in the literature, claim that scientific research is that which utilizes the scientific method and non-scientific research is all other research (Manheim, 1977). This claim is a sweeping generalization that is probably no longer absolutely true today. In the past, practitioners of science, who were invariably from the natural sciences, have, perhaps jestingly, claimed that it is the natural sciences that are the true science, while the social sciences are not. This, of course, is no longer the bone of contention among scientists today. Still, Kerlinger (1973) differentiated that which is scientific and non-scientific by defining scientific research as follows: "scientific research is a systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among natural phenomena." There is here a clear reference to experimentation, which Kerlinger (1973) has always had bias for. Let us further explore the two points that need emphasis in this definition.

1. When we say that scientific research is systematic and controlled, we mean, in effect, that scientific investigation is so ordered that investigations can have critical confidence in research outcomes. This means that the research process is standardized and the observations exhibit regularity according to the disciplined way of employing the process. It would mean, further, that when we do scientific research, it is as if we can more or less describe what might be expected as an output of the research before the research is completed, which is precisely what Kerlinger (1973) emphasizes.

2. Scientific investigation is empirical, which simply means you must have empirical evidence in support of what you believe to be. If you believe that something is so, you must somehow put your belief to a test outside of yourself to demonstrate that, indeed, that something

> you believe in exists. Subjective belief, in other words, must be checked against objective reality. You must always subject your notions to empirical inquiry and test.

It should be pointed out, however, that today there is much less effort in distinguishing between what previously may have been referred to as scientific and non-scientific research. In fact, researchers are agreed that research, whether in the natural or social sciences, do employ rigorous methodologies which is what make them scientific in the first place.

Types of Research

Purposive nomenclature of research

The categorization of research based on what is referred to here as the purposive nomenclature is based on the basic aim of the research. In the past, there were three categories under purposive nomenclature, namely: fundamental (or pure or basic) research, applied research, and action research.

Kumar (2005), however, reports that a recent orientation in the classification of research is the dichotomy between "applications" or "objectives" perspectives on one hand, and "inquiry mode employed" on the other. The general classification labled "application research" includes under it two subclasses called pure research and applied research.

Research according to application or objectives. As Kumar (2005) points out, this classification includes what we used to discuss separately: fundamental (or pure or basic) research and applied research.

1. *Fundamental or pure research.* From the natural sciences view point, one may say that the purpose of research is the development of theories by discovering broad generalizations or principles. It employs careful sampling procedures in order to extend, by inference, the findings beyond the group or situation studied. It has little concern for application of findings to actual problems in areas considered to be the concern of people other than the investigator. We can say that pure research, which is also called basic research at times, is undertaken to satisfy the curiosity of the researcher or scientist. It is usually carried out in the laboratory. In the behavioral sciences, this type of research has been primarily the activity of clinical psychologists, using animals as subjects. We might emphasize here that laboratory research on humans is considered unethical. Kumar (2005) observes that "pure research involves developing and testing theories and hypotheses that are intellectually challenging to the researcher but may or may not have practical application at the present time or in the future" (p.6).

2. *Applied research.* It has most of the characteristics of fundamental research, including the use of sampling techniques and the subsequent inferences about the target population. However, its purpose is to improve a product or a process – testing theoretical concepts in actual problem situations. Most research undertaken in the social sciences are applied research (Kumar, 2005). They include the following:

    2.1 Descriptive research refers to the systematic description of a situation, a problem, phenomenon, service or program, or information about a situation like living conditions in a particular community, or description of attitudes towards an issue. The catch word is "description" that can refer to the description of practically anything.

2.2 Correlational research establishes the existence of a relationship between or among variables of the study.

2.3 Explanatory research clarifies why and how there is a relationship between situations or phenomena.

2.4 Exploratory research explores an area that is little known, or to determine whether or not there are possibilities of undertaking further research in said area.

2.5 Feasibility study or pilot study may be undertaken to arrive at a decision as to whether or not a full-blown research on a specific topic or area is necessary or warranted.

Research according to the mode of inquiry. Kumar (2005) classifies under this what we have referred to in the past as "action research." This is focused on the immediate application of the findings of the research to the solution of an existing problem, not on the development of theory or upon general application. It puts emphasis on a problem, here and now, in a local setting. Its findings are to be evaluated in terms of universal validity, but its purpose is to improve practices, and at the same time, to improve those who try to improve the practices. From the point of view of education research, action research is the "systematic inquiry done to gather information about – and subsequently improve – the ways their particular education setting operates, how they teach, and how well their students learn" (Creswell, 2002). The means it aims to improve practice.

Action research, according to Creswell (2002) has the following characteristics:

1. It focuses on practical issues;
2. It studies research on practices;
3. It is a collaborative activity between researcher and participant;
4. It is a dynamic process of data collection, reflection, and action, moving back and forth;
5. It is a process of developing a plan of action to respond to a practical issue; and
6. It is a sharing of the researcher's report with the local institutions such as schools, community, and other personnel.

Descriptive nomenclature of research

This categorization refers to specific processes in conducting the research. Essentially, there are three categories: historical, descriptive, and experimental.

Historical research describes what was. The process involves investigating, recording the conditions, and interpreting events of the past for the purpose of discovering generalizations that are helpful in understanding the present, and to a limited extent, in anticipating the future.

Descriptive research describes what is. It involves describing, analyzing, and interpreting the conditions that now exist. It involves some kind of comparison and contrast, and may attempt to discover relationships between existing non-manipulated variables.

Experimental research describes what will be when certain variables are carefully controlled or manipulated. The focus is on the relationship of variables. Deliberate manipulation is always a part of the experimental method.

Dualistic nomenclature of research

In the decade of the 70s, researchers were increasingly becoming concerned about research methods that required other categorizations. Guba (1978) offered a typology of research inquiry highlighting the differences in basic approaches. He called these scientistic and naturalistic inquiries.

Scientistic inquiry. This approach moves towards experimentation. A completely scientific research is complete experimentation, following the requirements of fundamental or basic research.

Naturalistic inquiry. This is a research approach that puts emphasis on qualitative research and in the observation of behavior under natural settings. In a complete naturalistic inquiry design, there are no controls. You observe, say, the behavior of humans under the most natural conditions.

Guba's conceptualization of these two approaches is shown in Figure 1.

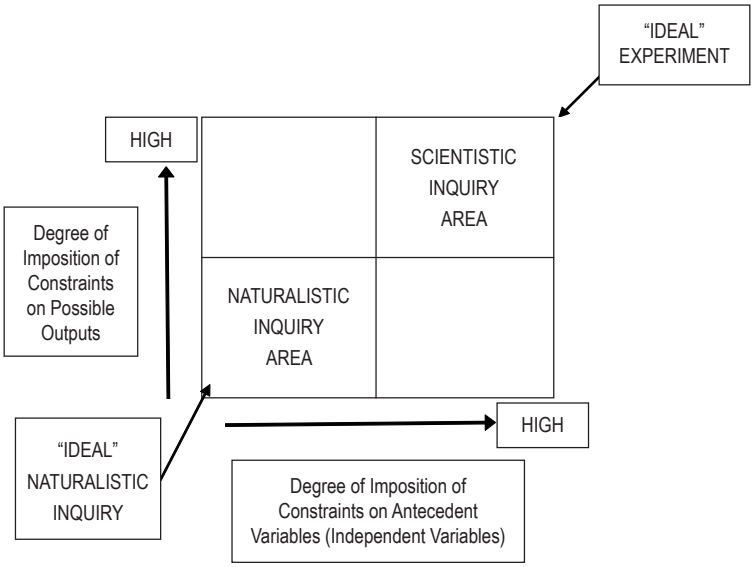

*Figure 1. Representation of inquiry space or domain of inquiry**

*Adopted from Guba (1978), p. 10, based on Williems & Raush (1968), p. 47.

We have discussed here three nomenclatures of research, but these are not really completely mutually exclusive. In fact, it is entirely possible that your thesis, for example, may employ qualitative techniques (as in the naturalistic strategy) in trying to discover solutions to an existing problem (as highlighted under action research), which may have appeared much earlier in time and may have, in fact, been solved in those times (historical). Most research projects, indeed, cut across the various research classifications. Therefore, our classifications are useful as tools for deeper analysis of the research process. You are not going to classify your theses according to these classifications of research, but it is good to understand the type of research you are doing.