**Research Lecture 3 BS VI (Nauman Yaser)**

**Elements of Research**

**Concept**

Concepts have been described as the basic building blocks or ideas of theory and research. According to Wimmer and Dommick (2003) “a concept is a term that expresses an abstraction (abstract idea) formed by generalizations from particulars.” A concept is formed by summarizing related observations gives examples of concepts include “weight”, “height”, “length” and “achievement”.

 The social science is full of concepts. For example, a social science researcher might observe that a public speaker becomes restless, starts to perspire and continually fidgets with a biro just before delivering a speech or lecture. The researcher might summarize these observed patterns of behavior and label them speech anxiety. Also, the transmission of information through radio waves from a radio or television station, to an audience in far and near places through their receivers is a concept known as broadcasting.

 Concepts are important because they facilitate communication among those who have a shared understanding of them. Researchers use concepts to organize their observations into meaningful summaries and to transmit this information to the academic community. Concepts abound in mass communication. They include media usage, media imperialism, cultural imperialism, agenda setting, selective attention, retention perception etc.

**Construct**

 A construct is also a concept. Constructs have been described as higher concepts. According to Wimmer and Dommick (2003), a construct is a combination of concepts; it can not be observed directly; and it is usually designed for some particular research purpose so that its exact meanings relate only to the context in which it is found. It is created for a particular scientific purpose. Constructs are generally difficult to observe directly; their existence therefore must be inferred from related behavior patterns.

**Hypothesis**

After a research topic has been selected, one should have some prediction about what you think will happen in your study. This educated guess concerning the outcome of a research is called hypothesis. A hypothesis, therefore, can be defined as a set of assumptions, a speculation, which is tentatively accepted as the basis for an investigation. The hypothesis is worded so that it can be tested in your research work. That is why it has been stated that hypotheses are measurable, testable statements about the relationship(s) between variables. A hypothesis states a predicted relationship between two or more variables or concepts.

Hypothesis can further be described as statements concerning two or more variables to find out their relationship. Hypotheses could be a fact or body of facts which a researcher wants to find out their relationship. It can also been seen as statement not proved but assumed to be true for the purpose of argument or further studies. Hypotheses are meant to be tested statistically and accepted or rejected on the basis of the findings which evolve from the research study.

**Characteristics of Useful Hypotheses**

 According to Wimmer and Dominick (1987:248-249), a useful hypothesis should possess four characteristics: Compatible with current knowledge in the area, should follow logical consistency, should be in parsimonious form and should be testable.

 That hypothesis be compatible with current knowledge means that if available literature strongly suggests one point of view, researchers who develop hypotheses that oppose this knowledge must provide basis for that. That it should follow logical consistency means that if a hypothesis suggests that A = B and B = C, then A must be equal to C. That hypotheses must be in their parsimonious form is obvious. Research is a complex exercise, so the concept of the simpler the better should run through every research undertaking. Therefore, it is better to state hypotheses in simple form and contribute to making the research process simpler than to write hypotheses in complicated form. Developing untestable hypotheses is unproductive and such adds nothing to knowledge.

**Types of Hypotheses**

There are three types of hypotheses. These are:

**(1) Descriptive hypotheses (2) Comparative hypotheses (3) Relational** **hypotheses**

 In descriptive hypothesis, there is just one variable and it merely describes an action. “Lagos State will have a larger population than Kano State”. The variable of interest here is population. Comparative hypotheses look at the similarities or differences between variables being tested e.g. Male students read newspapers more than female students. Relational hypotheses examine the relationship between the variables being tested i.e. it examines whether the variables are directly or inversely related.

Hypotheses are given different names. These are:

**1) Research hypotheses HI 2) Alternative hypotheses HA 3) Null hypotheses HO**

HI: People with low level of education will have low credibility in the media. HA: People with high level of education will have high credibility in the media. HO: There is no relationship between level of education and media credibility.

**Variables**

Variables are essential elements or ingredients of research. A variable can be defined as any entity that can take on different values. That means anything that can vary can be considered a variable. For instance, age can be considered a variable because age can take different values for different people.

 A variable can also be described as a concept or construct that can vary or has more than one value. In this regard, some variables can be quite concrete such as gender, weight, or shoe size. Others can be considerably more abstract or vague. For example, sense of well -being, self-esteem, strength of belief in religion.

Wimmer and Dominick (2003) define a variable as a phenomenon or event that can be measured or manipulated and is used in the development of constructs. Kerlinger (2000) states

that a variable is a property that takes on different values.

Researchers attempt to test a number of associated variables to develop an underlying meaning or relationship among them. It is important to note that variables aren't always 'quantitative' or numerical. For instance, the variable 'gender' consists of two text values: 'male' and 'female'. We can, if it is useful, assign quantitative values instead of (or in place of) the text values, but we don't have to assign numbers in order for something to be a variable. The opposite of variable is constant.

**Classification of Variables**

**Independent and Dependent Variables**

Variables are classified in terms of their relationship with one another. Researchers usually talk about independent and dependent variables.

The most important and useful way to categorize variables is as independent and dependent. An independent variable (IV) is the presumed cause of the dependent variable (DV), the presumed effect. The independent variable is the antecedent, while the dependent variable is the consequent. When we say: if A, then B, we have the conditional conjunction of an independent variable and a dependent variable.

Independent variable is observed and its value presumed to depend on the effects of the dependent variable. In other words, the dependent variable is what the researcher wishes to explain. The independent variable may be manipulated or it may just be measured. In contrast, the dependent variable is what we are studying, with respect to how it is related to or influenced by the independent variable or how it can be explained or predicted by the independent variable. It is sometimes called the response variable or the criterion variable. It is never manipulated as a part of the study. DVs are the things we measure about people.

**Discrete and Continuous Variables**

 A discrete variable includes only a finite set of values; it cannot be divided into subparts. For instance, the number of children in a family is a discrete variable because the unit is a person. It would not make much sense to talk about a family size of 2.24 because it is hard to conceptualize 0.24 of a person. Political affiliation, population, and sex are other discrete variables.

 A continuous variable can take on any value (including fractions) and can be meaningfully broken into smaller subsections. For example, height of a person may be 72.13 inches, a respondent’s time spent watching television may be spent 3.12 hours.