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Conceptualizing a Research Design (Study Designs)

L3 RESEARCH METHODOLOGY

GROUPS: 3/4/5

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Introduction

After deciding on WHAT to research (the research problem) , the researcher needs to determine HOW to conduct the research. A research design refers to the procedural plan adopted to answer the questions of the research in a valid, objective, accurate and economic way. A researcher needs to specify clearly the study design, the sampling techniques and data collection tools. Additionally, they need to mention how they are going to analyse the data and communicate the findings. Each of these needs to be presented with a rationale and a justification. The selection of a specific research design is dependant on the nature of the research. Quantitative research designs are more specific and well structured qualitative research designs are flexible and less predetermined.

Some Study Designs in Quantitative Research

Study designs based on the number of contacts with the population

- **Cross-sectional study:** a design used to find out the prevalence of a phenomenon, a situation, a problem, or an issue by taking a cross-section at one time point.

e.g. to study the attitudes of students towards a specific teaching technique already used in class.

- **Before-and-after study:** a study design used to measure the extent of change in a situation or the impact of an introduced change. It has two time points , before and after.

e.g. to study the effectiveness of a new teaching material on the comprehension of students by measuring their level of comprehension before the use of the teaching material and after using it.

- **Longitudinal study:** a study design used to determine the pattern of change that takes place over a period of time. The data used in such study design is collected at more than two time points.

e.g. to study the improvement of students comprehension level in the long term using a new teaching model.

Some Study Designs in Quantitative Research

Study designs based on the reference period

- **Retrospective study:** a study design used to find out about a phenomenon, a situation , a problem or an issue that happened in the past. The data is collected from past records or from respondents recalling past situations.

e.g. to study the attitudes of graduated students on a specific issue during their course of study at the university.

- **Prospective study:** a study design used to study prevalence of a phenomenon, a situation , a problem or an issue or the likely outcome of an intervention in the future. Experiments are a good example of such study design because the researcher introduces a change and studies the result of such change in the future.
- **Retrospective-Prospective study:** a study design that focuses on past trends of a phenomenon, a situation , a problem or an issue and the change that will take place after an intervention.

e.g. to find out about the students' attitudes towards a already used teaching techniques and their attitudes towards a newly used one.

Study Designs in Quantitative Research

Study designs based on the nature of investigation

- **Experimental study:** a study design where the researcher or someone else introduces and intervention. This intervention is assumed to be the cause of a change.

e.g. to test the usefulness of a new teaching material.

- **Non-Experimental study:** the researcher observes a phenomenon and attempts to determine its cause.

e.g. to find out the reasons of low motivation in a specific class.

- **Quasi- or semi-experimental study:** research design that resembles experimental research but is not true experimental research. Like experimental study, it tests causal relationship. However, a true experiment is not possible to establish due to the inability to eliminate the external factors that can effect the results of the study.

Some Experimental Study designs

- **Experimental Study Designs**
  - *The After- only Experimental Study*: The pre-observation is not necessary done before the intervention. The researcher collects information from records or from what the respondents recall from their experience before the intervention is introduced.
  - *The Before- and – after:* The pre-observation is done before the intervention is introduced. The after- observation is conducted to find out the effect of this intervention.
  - *The Control Group:* The researcher design two population groups, the control group and the experimental group. The groups are comparable in every aspect except for the intervention received by the experimental group. Both groups receive the before and after observation. The difference between the observations of the group will be attributed to the intervention. The main aim of having a control group is to eliminate or account for any external factors that may affect the experiment. For instance, When testing the effectiveness of a new teaching technique, the motivation of the students and the competence of the teacher are among some of the external factors that affect the results of the experiment. Nonetheless, control group which is similar to the experimental group, will also have these external factors. The difference between the groups in reference to the intervention will not be affected by such factors.

Some Experimental Study designs

- *The Comparative Experimental Design:* The researcher uses such study design when they are testing different intervention models with two or more population groups. Then, they compare the results of the these interventions.

Some Study Designs in Qualitative Research

- **Case Study:** a case refers to an individual, a group, a community, an instance, an episode, a town, etc. treated as a one entity that is atypical of cases of certain types. In this study design, the case is subjected to in-depth exploration of the target aspect of the research using one or multiple methods such as interviewing, observations or secondary documents.

e.g. to study cultural shock symptoms among foreign students in a specific university.

- **Oral History:** the researcher obtains, records, presents and interprets historical or current information based upon some members of the group's personal experience, opinions or passed on information from other sources such as ancestors.

e.g. to study cultural shock symptoms among people who lived in Franco-Algerian communities during the French colonization.

- **Focus Group/Group interviews:** Information is gathered from a free and open discussion between group members. The researcher asks questions to stimulate discussions among members. Such study is designed to explore the attitudes, opinions perceptions of the group towards an issue, a phenomenon or a program. The discussion is recorded and analysed later.

e.g. to study the students' attitudes towards a specific method used in distant learning.

Some Study Designs in Qualitative Research

- **Participant observation:** The researcher develops a close interaction with members of the group or lives in the situation that is being studied. Throughout the involvement, they record their observation of the target aspects of the research. Other methods can be used along with that such as interviewing and group discussions.

e.g. to study the attitudes of teachers towards a specific training program.

Remarks:

- The previous list of study designs is not exhaustive, i.e. there are other types.
- The selection of a specific study design for a research need to be accompanied with logical justification and a rationale to ensure its validity.

Assignment

- Select the appropriate study design for your research problem.
- Justify your selection (how can such study design work well for your supposed research?)

P.S. You can select other study designs that are not included in the presentation. Mention the source in which you find the selected study design.

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