

Assessing Research Designs and Recommending Quantitative Research Designs

Name

Unit

Course

Lecturer

Date

Introduction

There are different methodologies or designs that can be used in research. The type of methodology that the researcher uses in the research is determined by the research question. Another factor that might influence the type of methodology to use is the difference in the paradigms that are reflected by the different designs. This paper will discuss the different research designs used in educational researches, their strengths and weaknesses as well as offer and also make recommendations on the best design to use in a specific research. The paper will also propose a quantitative research plan and offer recommendations on the best research design for the research plan.

Research Designs

There are different classifications of research designs. Some researchers prefer to classify them as either qualitative or quantitative designs, while others classify them as being either non-experimental or experimental. Other researchers will classify research depending whether it was carried out in the laboratory or in the field. It is obvious that there are varied ways of classifying research designs. However, in these classifications there is much overlap. For instance, we can have a non-experimental design that is qualitative and can also be quantitative (Cobb et al., 2003). According to Cobb et al. (2003), you can also have an experimental study that has some qualitative aspects.

In correlational research, the relations between the variables are studied quantitatively. Apparently, a major disadvantage in correlational research is that the effect and cause relations are undetermined (Cobb et al., 2003). Another disadvantage is that the variables are not manipulated unlike in other studies. Here, the researcher can only collect data based on these

variables and then analyze the data to determine the relations between the variables. This is a major disadvantage. However, the design is best applied in studies with no need to manipulate the variables.

In experimental research, participants in the study are assigned to different treatments or tests. This research design requires at least some measurable differences between the groups prior to the conducting of the research. Before the samples are assigned a group, be it the control or experimental group, there needs to be some recordable differences between the two. These records will help the researcher to determine whether the difference or change between the groups after the research is due to the factors attributed to the experiment. This can be disadvantageous where there are no clear differences or recordable differences between the groups prior to the study. Matter of fact, if the study is not observed properly, the researcher might end up recording changes that were indeed affected by the prior state of the group rather than the experiment itself. Although major research institutions regard true experiments as being the ideal research designs, it is quite hard to conduct these in educational institutions.

Another commonly used research design is the Quasi-Experimental design. According to Cook and Campbell (1979), the researcher doesn't assign participants randomly to different research groups. This method is often used in educational researches. In these research, it is usually deemed unethical to group samples randomly. For this reason, there has to be a determined method on how to assign the samples. One major advantage of this methodology is that researches try to control the differences between the research groups as much as possible. The researchers use statistical controls and matching to control the differences between the sample groups. Another advantage in using the Quasi-experimental design is that the researcher is able to control the variables that are related to the study's outcome.

One strength of qualitative research designs is their ability to allow the study sample to offer their holistic descriptions. These studies are particularly carried out in naturalistic settings. These studies are not as complicated as other research designs. The data here is collected using pictures and words rather than quantifiable and numerical indicators (Fraenkel and Wallen, 1996). Another advantage of this design is that it allows for the consideration of processes deeming them to be as important as the products (Fraenkel and Wallen, 1996). The design can be used where the researcher is not decided on specific hypotheses for the study. You will also find that this design is specifically focused on the samples beliefs, thought processes and attitudes. In some researches, these are important yet can be misleading in other contexts that require factual findings.

In Cross-sectional and longitudinal research designs, developmental issues are the major focus (Fraenkel and Wallen, 1996). The longitudinal design allows for the monitoring and collection of data by the researcher over a period of time about the samples. This is done over varied waves or periods of time. The researcher then studies the difference between the study groups over the study period. The major advantage of the study is the focus on an individual over a period of time. However, the study design is considered to be difficult to conduct.

The longitudinal design is quite expensive for many researchers. Another disadvantage to the design is the task of tracking the individuals over the study period. Some might relocate or even decide that they want out of the study. In the cross-sectional study, the researcher collects data on different individuals and doesn't assess the same individual. The research is conducted at the same time and not over a period of time. The study allows for the expedient carrying out of a research.

In design experiments, the effects of educational interventions are examined. This is done in actual classrooms. The major advantage of using this design is that the intervention progressively changed and re-evaluated over time as the obtained results are obtained (Brown, 1992). This design is most appropriate in the development of different learning theories. The experiments also allow for the introduction of new instructional techniques. According to Cobb et al. (2003), researchers use this design in the development of new theoretical perspectives. However, this design is quite engaging. The researcher has to keep changing the research design as the theories change with the progression of the study. Future instructions have to be considered in the design of the design experiments.

Another popular research design is the micro-genetic approach. This design is used where one sample is under research. The method allow for the detailed study of a single sample over a period of time. This is advantageous as the results of the study are very specific and detailed. However, it can be time consuming and quite expensive to carry out this type of study. Both quantitative and qualitative methods can be used to analyze the data collected.

Quantitative Research Plan

Research Question

I propose to carry out a research to determine whether the financial status of formerly imprisoned persons is better after two years on parole or off parole from the date of their release. This will be the research question. The study will be quantitative and will seek to determine the economic status of the different persons prior to being released and after being released. Other factors like their educational background and geographic location will be held constant.

Research Design

The most appropriate research design to use in this study will be quantitative. There will be questionnaires that will be administered to the individuals alongside standardized tests. The study sample will be made up of 100 formerly imprisoned persons that have just been released from jail. Half of these persons will be on parole while the rest won't. I propose this sample size as it is appropriate for the study and will yield adequate results. Because the study sample is not very large, I propose to employ a single-subject design. A longitudinal study will be employed in this study. This study will enable the researcher to collect data on the samples at different set times. The researcher will then examine the changes in the results between the different study samples.

Research Instruments

I propose the use of questionnaires and interviews for data collection. These instruments are appropriate enough for a study sample of 100 persons. The questionnaires will be closed. This will help produce quantitative data as it is the researchers plan. The standardized tests will help elicit more information from the persons alongside the questionnaires. The close-ended questionnaires are also relatively easier to analyze as compared to the open-ended ones. The proposed sample size of this study meets the bare minimum set by the American psychological Association (1999) for a standardized test. This tests are the best in this study as they will put in considerations the different socioeconomic and ethno-cultural levels of the samples (Brown 1992). As the sample will have to be people released with a period of one month, it will definitely be hard to come across 100 persons released from one correctional facility. Chances are, the released persons will be from varied geographical locations. The standardized tests are most applicable in such conditions.

Inappropriate Designs

In this study, it would be impossible to carry out an experimental research. This is because it is not possible to randomly assign persons to either be on parole or off parole. A micro-genetic design might not be appropriate as one person cannot be both on and off parole. As I am not interested in the different developmental changes that might occur over time, it would also be inappropriate to use a qualitative design in this research.

Observational data will not be used in this study. This would be inappropriate as it will only produce qualitative data (Brown, 1992). The researcher doesn't intend to research on the different perspectives that surround the community of the sample. If the researcher wanted to learn what was happening in the lives of the participants, then observational data would come in handy. If they did not intend to use questionnaires, the method would be appropriate. However, seeing the research intends to use questionnaires observation will not be necessary. The differences in the geographical locations of the sample make it impossible to observe all the samples. The method cannot be used to yield quantitative data rather qualitative data.

Conclusion

In the determination of the research design to use in a study, different factors have to be considered. The study sample is one of them. As stated in this paper, it is impractical to use certain designs when the study sample is too large or too small. Another factor to consider is whether the study is qualitative or quantitative. The research questions is definitely the most important determining factor in the selection and determination of the research design. For a final design, it is most advisable to consider the strengths and weaknesses of the different designs among others.

References

- American Educational Research Association, American Psychological Association, National Council on Measurement in Education, Joint Committee on Standards for Educational, & Psychological Testing (US). (1999). *Standards for educational and psychological testing*. Amer Educational Research Assn.
- Brown, A. L. (1992). Design experiments: Theoretical and methodological challenges in creating complex interventions. *Journal of the Learning Sciences*, 2, 14 1–178.
- Cobb, P., Confrey, J., diSessa, A., Lehrer, R., & Schauble, L. (2003). Design experiments in educational research. *Educational Researcher*, 32, 9–13.
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Boston: Houghton Mifflin.
- Fraenkel, J.R., & Wallen, N.E. (1996). *How to design and evaluate research in education* (3rd ed.). New York: McGraw-Hill.