DOWNLOAD PDF COMPARING GROUP AND SINGLE-CASE DESIGNS

Chapter 1 : The Differences Between Single Subject Design and Case Studies. | jessicabutroid

Comparing Group and Single-Case Designs Throughout the behavioral and health sciences, correlational and experimental studies dominate the research design landscape.

This method involves researchers collecting in depth, descriptive data which is then interpreted, analysed and evaluated. Data can be collected from the participants past and present to ensure true context. There is no cause and effect relationship established as the aim is not to manipulate variables to see specific outcomes. Treatments may be applied, but the standardised experimental procedure is not used. This method is often used for unusual and seemingly unique behaviours. One advantage of the case study design is that it allows detailed and contextual data to be collected. Although cause and effect relationships are not established, the results found from these studies allow extended knowledge of theories that have already been established through previous research. As the design focuses on one subject, individual differences are accounted for. One disadvantage of the case study method is that it is highly subjective. The data is mainly qualitative and descriptive and therefore needs to be interpreted by the researcher. This highly decreases the validity of the findings as researchers may be bias to look for evidence and behaviours that support their theory and may even ask leading questions when using the interview method. Another disadvantage is that it is incredibly difficult to generalise or apply the findings from case studies to anyone else. Unlike the case study design method, single subject designs aim to find a cause and effect relationship. The researcher has control over the situation and aims to show that the manipulation of an independent variable causes a change of the dependent variable. To do this the researcher must have control over the environment to make sure there are no extraneous or confounding variables affecting the results. Next in the intervention phase which involves the researcher applying the independent variable and then collecting more observational data. There may also be a reversal phase where the independent variable is then taken away and the dependent variable is measured again to see if the baseline is resumed. One advantage of the single subject design is that the findings allow researchers to find the differences between individuals. One criticism of group experiments is that the significant differences between individuals is not accounted for or taken into consideration and single subject designs allow researchers to discover this difference. This research design also allows researchers to see a causal relationship for a specific therapy or treatment. One disadvantage, like with case study designs, is that the results are not generalizable. The point of a single subjects design is to see the effect on individuals rather than groups.

Chapter 2 : The difference between a case study and single case designs. | ira06

Comparing Group Design and Single Case Design One of the claims that I hear from the more scientifically oriented readers or other commenters in the blogosphere is that the way to be really certain of an answer in science is to use some variant of the blinded methodology with random assignment.

Ex Post Facto Designs Pre-experimental designs are the simplest type of design because they do not include an adequate control group. A pre- and post-intervention design involves collecting information only on program participants. This information is collected at least twice: However, findings using this design may be enough to indicate your program is making a difference depending on how rigorous the proof needs to be, proximity in time between the implementation of the program and the progress on outcomes, and the systematic elimination of other alternative explanations. Not an authentic experimental design Design does not control for many extraneous factors Subject to many threats to validity Typically conducted for exploratory purposes Usually convenient and financially feasible The three types of pre-experimental designs are: Pre-experimental Designs Image taken from: A good experimental design can show a casual relationship between participation in your program and key student outcomes. The key to this design is that all eligible program participants are randomly assigned to the treatment or control group. When random assignment is used, it is assumed that the participants in both the control and treatment groups have similar attributes and characteristics. The purpose of a true experimental design is to control bias. In a true experiment, differences in the dependent variables can be directly attributable to the changes in independent variable and not other variables. Characteristics of Experimental Design Research controls manipulation of the intervention or treatment Participants are random assigned to groups Intervention or treatment occurs prior to observation of the dependent variable Strengths Causal relationships between variables can be found Limitations Limited external validity generalizability due to the controlled experimental environment Ethical concerns The image below provides a model of several experimental designs. Experimental Designs Image taken from: A quasi-experimental design is very similar to an experimental design except it lacks random assignment. Depending on treatment and comparison group equivalency, evidence generated from these designs can be quite strong. To conduct a quasi-experimental design, you will need to identify a suitable comparison group i. Characteristics of a Comparison Group Members of a comparison group may receive other types of services or no services at all. A comparison group should be similar to the treatment group on key factors that can affect your outcomes. You may have to collect data to try and control for potential differences as part of your statistical analyses. Strengths Enables experimentation when random assignment is not possible Avoids ethical issues caused by random assignment Limitations Does not control for extraneous variables that may influence findings The image below shows several examples of quasi-experimental designs. Quasi-Experimental Designs Image taken from: The ability to produce a quality evaluation with such as design is directly related to the quality and quantity of data readily available. The phenomenon of interest has already occurred at the time of observation or measurement. There is typically no control or comparison group. Main weakness of design: Essentially, your analysis will be limited to the data that is available. You can investigate research questions that are inappropriate for experimental designs. These designes are typically more logistically and financially feasible. You can pay more attention to context instead of seeking to control variables and the environment. These designs are particularly effective when Krathwohl, , p.

Chapter 3 : Comparing Group and Single-Case Designs - SAGE Research Methods

Chapter2 COMPARING GROUP AND SINGLE-C ASE DESIGNS T hroughoutthebehavioralandhealthsciences,correlationalandexperimental studiesdominatetheresearchdesignlandscape.

Provide structured review of current literature; include articles that are critically evaluated; synthesize many small studies and help validate evidence from small studies CON: Aerosolized magnesium sulfate for acute asthma: Chest, 1 , Annals of Internal Medicine, 1 , Randomized controlled trial RCT True experimental design which manipulates a therapeutic intervention; participants in the research are randomized to experimental or control groups; control may be placebo or standard treatment; answer the question: Randomization helps control for bias inherent differences among groups ; use of control groups provides better comparison, helps mitigate placebo effect; blinding masking when possible also helps; best for establishing efficacy; provide strong evidence of causality CON: Not possible for some kinds of research that may present ethical dilemmas; take a long time; require sound methodology; expensive George, J. Initial management of immune thrombocytopenic purpura in adults: American Journal of Hematology, 74 3 , Cohort study Data collected from a defined group of people cohort ; look forward in time, from an exposure, intervention, or risk factor to an outcome or disease; answer the question: A population-based, multisite cohort study of the predictors of chronic idiopathic thrombocytopenic purpura in children. Pediatrics, 3 , e Case control study Look backward in time, from an outcome or disease to a possible exposure, intervention, or risk factor; answers the question: Quick and cheap; good for rare disorders with a long time between exposure and outcome; efficient-data often collected from record reviews; convenient patient already have disease CON: No randomization; groups with possible inherent differences selection bias ; difficult to choose appropriate control group Berends, F. Hematological long-term results of laparoscopic splenectomy for patients with idiopathic thrombocytopenic purpura: Surgical Endoscopy, 18 5 , Preliminary observation of a problem; new or rare diagnosis; low cost; can lead to further studies CON: No control group; no statistical validity; not planned; no research hypothesis; limited scientific merit Galbusera, M. Rituximab prevents recurrence of thrombotic thrombocytopenic purpura: Blood, 3 , Web Resources on Research Design.

Chapter 4 : SAGE Books - Comparing Treatments: The Alternating-Treatments Designs

Group research typically involves comparing Group A to Group B regarding some demension(s) or variable(s). A basic design will compare Group A (who we'll call the "Control" group) to Group B (who we will refer to as the "Experimental" group).

The top design in the figure shows a "posttest-only" single group design. Here, a group of people receives your program and afterwards is given a posttest. In the bottom part of the figure we see a "pretest-posttest" single group design. In this case, we give the participants a pretest or baseline measure, give them the program or treatment, and then give them a posttest. In the post-only design, we would give the first graders the program and then give a math achievement posttest. We might choose not to give them a baseline measure because we have reason to believe they have no prior knowledge of the math skills we are teaching. In the pre-post design we are not willing to assume that they have no prior knowledge. We measure the baseline in order to determine where the students start out in math achievement. We might hypothesize that the change or gain from pretest to posttest is due to our special math tutoring program. This is a compensatory program because it is only given to students who are identified as potentially low in math ability on the basis of some screening mechanism. The Single Group Threats With either of these scenarios in mind, consider what would happen if you observe a certain level of posttest math achievement or a change or gain from pretest to posttest. You want to conclude that the outcome is due to your math program. How could you be wrong? Here are some of the ways, some of the threats to interval validity that your critics might raise, some of the plausible alternative explanations for your observed effect: And, we know that in every Sesame Street show they present some very elementary math concepts. Perhaps these shows cause the outcome and not your math program. Maturation Threat The children would have had the exact same outcome even if they had never had your special math training program. All you are doing is measuring normal maturation or growth in understanding that occurs as part of growing up -- your math program has no effect. How is this maturation explanation different from a history threat? Testing Threat This threat only occurs in the pre-post design. This is what is meant by a testing threat -- taking the pretest not getting your program affects how participants do on the posttest. Instrumentation Threat Like the testing threat, this one only operates in the pretest-posttest situation. What if the change from pretest to posttest is due not to your math program but rather to a change in the test that was used? Perhaps part or all of any pre-post gain is attributable to the change in instrument, not to your program. Instrumentation threats are especially likely when the "instrument" is a human observer. The observers may get tired over time or bored with the observations. Conversely, they might get better at making the observations as they practice more. Mortality is used metaphorically here. It means that people are "dying" with respect to your study. Usually, it means that they are dropping out of the study. And, assume that the kids who are dropping out are the low pretest math achievement test scorers. If you look at the average gain from pretest to posttest using all of the scores available to you at each occasion, you would include these low pretest subsequent dropouts in the pretest and not in the posttest. This subsample would certainly not be representative even of the original entire sample. Furthermore, we know that because of regression threats see below these students may appear to actually do worse on the posttest, simply as an artifact of the non-random dropout or mortality in your study. When mortality is a threat, the researcher can often gauge the degree of the threat by comparing the dropout group against the nondropout group on pretest measures. If there are no major differences, it may be more reasonable to assume that mortality was happening across the entire sample and is not biasing results greatly. But if the pretest differences are large, one must be concerned about the potential biasing effects of mortality. Regression Threat A regression threat, also known as a "regression artifact" or "regression to the mean" is a statistical phenomenon that occurs whenever you have a nonrandom sample from a population and two measures that are imperfectly correlated. Let me try again. Furthermore, assume that your sample consists of low pretest scorers. Regression is a confusing threat to understand at first. I like to think about it as the "you can only go up from here" phenomenon. If you include in your program only the kids who constituted the lowest ten percent of the class on the pretest, what are the chances that they would

constitute exactly the lowest ten percent on the posttest? This purely statistical phenomenon is what we mean by a regression threat. To see a more detailed discussion of why regression threats occur and how to estimate them, click here. How do we deal with these single group threats to internal validity? While there are several ways to rule out threats, one of the most common approaches to ruling out the ones listed above is through your research design. For instance, instead of doing a single group study, you could incorporate a control group. In this scenario, you would have two groups: In fact, the only difference between these groups should be the program. In other words, a good control group is one of the most effective ways to rule out the single-group threats to internal validity. Of course, when you add a control group, you no-longer have a single group design. And, you will still have to deal with threats two major types of threats to internal validity:

Chapter 5 : Single-subject research - Wikipedia

comparison-group estimates replicate the benchmark estimates from the randomized design. These design-replication studies have been carried out by a number of leading researchers over the past 20 years, and have tested a diverse range of non-experimental comparison -group designs.

Part 1 Researchers are usually trained in either group or "between group" research or "single subject" research. One design is not necessarily better than the other. I am by birth a single-subject design guy. So I am biased. It took me a majority of my graduate training to be able to acknowledge the merits of group research designs. But all designs have a place. Which of the two are used is in large part based on the type of research question being asked. Group research typically involves comparing Group A to Group B regarding some demension s or variable s. Group B is exposed to the treatment variable where Group A was not. For example, if we are looking at a new 3rd grade science curriculum, we will assess Group A Control Group who is not using the new curriculum against Group B Experimental Group who is using the new curriculum. Both groups recieve 7 weeks of science education. At the end of 7 weeks, we administer a post-test to both groups. We are looking to see if the performance of Group A differes "Significantly" from Group B on the post-test. In this case, Group B performed signicantly better than Group A on the post-test. This information allows us to make a statement about the research results. In this case, the new 3rd grade science curriculum was "correlated" with higher post-test scores. There are some things to be aware of when reviewing group design research. In general, information gathered from group designs are treated with common statistical procedures. These are referred to as inferential statistics and allow us to group, norm, average, and make overall inferences about the data. Where problems start is when "inferences" start getting stated as "fact" or as an indication of "causality". Group designs can have difficulty controling for variables that can confound the data. Confounding variables are events that might effect the data that you were not aware of. Going back to our example, what if we found out that during the 7 weeks of science instruction, Group B just happened to also be watching a special a 7 week Discovery Channel special on the curriculum begin taught. This is a confounding variable. Is the better performance on the post-test from Group B a result of the curriculum, or the show? There is no way to know. Researchers are normally on the look-out for these variables. Group designs have strong "external validity" and weak "internal validity". Where as Single-Subject designs have strong "internal validity" and weak "external validity". What this means is that Group designs are good about telling you something about a large group of people but not good at all telling you about an individual performance within that group. How can you tell what type of research design was used? If you have the actual study, you can usually determine the type of group design used in the abstract. If not, it will be detailed in the "methods" section. As a last ditch effort, the way the data is being described is usually a dead give away. If the study is talking about "average", "median", "standard deviation", "percentage", "positive or negative correlation", then it is a group design. Group design researchers get themselves into trouble with they make statements of fact, or causality based on their data. When a researchers makes statements outside of the scope of their data, they are making a critical mistake. In our day and age of the minute-to-minute news cycle, and the role of the "sound bite", a mistake such as saying, "In our study we proved If you hear someone with a lot of initials after their name making these kind of statements, be very leary. It just so happened that Victoria Beck was speaking to the audience about how Secretin "cured" her son of autism. That night the local media was devoting a lot of time to the conference, and of course, this amazing course of developments regarding autism. I will also not forget the next 2 years in which parents desperately tryied to get their hands on viles of Secretin. The financial strain, emotional strain, and the pure hope that these parents were exposed to, in my mind, was unforgiveable. Not to mention the trauma caused because of holding a child with autism down to a table while they were either inected or given an IV of this hormone. It took the scientific community about 2 years to conduct enough experiments to make some descernable conclusions about the effects Secretin had on the symptoms of autism. Secritin was found to have no effect on the symptoms of autism. This little diversion of a summary was intended to emphasize the importance of science. And why its so important for those educated in the scientific

method to be responsible when reporting and dicussing their findings.

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Chapter 6 : Choose an Evaluation Design Â« Pell Institute

The difference between a case study and single case designs. February 3, at pm (Uncategorized) this is my first blog in this semester and I apologise if it is a little bit boring ðŸ™, Hopefully, you will at least find it informative.

Single Subject Design vs. There are many different designs and types of experiments, but why do we need them? Can we not just conduct the experiment the way it suits it best and not have to name it differently. So in order to begin our research we have to decide who we are going to study. Single subject designs focus purely on single individuals and investigate the effectiveness of an intervention. The researcher establishes the baseline behaviour or actions by observation or multiple tests each day for a set amount of time. After the baseline is set, an intervention would be introduced to change or better the behaviour. This would be an A-B design where there is a simple baseline phase and an intervention phase. Depending on the circumstances and needs, A-B-A design can occur where the baseline is monitored, the intervention is introduced and then the intervention is taken away to see whether it helped long term or whether it is a shot term effect only. This however is unethical if the intervention is taken away and the participants get worse, therefore a third possible design was introduced to fight with the unethicality of it. The A-B-A-B design monitors the progress and investigates what happens if the intervention is taken away, however it is later put back in again to better the behaviour. Case studies are non-experimental observations that are going to happen, or have happened due to natural or economic or personal causes. There are two different types of case studies, the retrospective and the prospective case studies. In the prospective case study psychologists measure the individual before they undergo the occurrence and after they experienced the occurrence. A few examples to demonstrate the workings of the different designs. Then an intervention would be introduced where the child practices for 10 minutes before sitting the daily test. To monitor how they do without the intervention, the new baseline would be monitored again, and then a more intense intervention could be introduced where the child practices twice a day for 20 minutes. Genie was locked up for most of her young life, not being able to learn a language. This resulted in her having great language acquisition problems. Concluding, there are many different types of designs and we as scientists have to make sure we know which designs to use.

Chapter 7 : Single Subject Design vs. Case Studies â€“ whatâ€™s the difference? | thelittleblogofpsi

Covers conventional research design so that students and beginning researchers or professionals have the proper foundation for comparing the features and advantages of large-scale group designs versus small group or single-case designs.

Chapter 8 : Single-subject design - Wikipedia

In contrast to an experimental group design in which one group is compared with another, participants in a single-subject experiment research provide their own control data for the purpose of comparison in a within-subject rather than a between-subjects design.

Chapter 9 : Social Research Methods - Knowledge Base - Single Group Threats

I think single case design focuses more on putting a subject in a different situation and looking for changes whereas a case study generally follows a subject through something, for example an illness or unique life situation.