Research Method in International Comparative Education

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Abstract

The purpose of this research was to review research methodology in international comparative education. The objectives of this research were: (a) to identify the different research approaches adopted in education across the world. (b) to find the best method of research for particular phenomena. This was a qualitative study that examined the different research approaches used around the world, which methods are used when, what the different components of research are, and how they are being used in education around the world. The various components of this main research are examined. Comparative research is examined to see how it proves beneficial. Or there are flaws in it. It is concluded that if we compare anything with another thing, there is a clear difference. Therefore, quantitative research is very important in education.

Keywords: Research method, international comparative education, Qualitative research, quantitative research

Research Method in International Comparative Education

Introduction

The goal of comparative research is to make inferences about two distinct groups by contrasting their differences and similarities (Mello, 2021). When comparing two different people groups, researchers look for similarities and differences between cultures. Typically, these studies are cross-national in scope. For example, comparative studies may be used to build bridges across peoples, civilizations, and societies. Both quantitative and qualitative methodologies are used in these investigations (Bargheer, 2024).

The approach used in comparative research is what sets it apart from other research methodologies. distinct countries and cultures, as well as distinct educational systems, are of particular interest to comparativists (Zajda et al., 2021). When conducting their investigations, comparativists use all of the research procedures used by other researchers, beginning with what can be realistically compared (Danijela & Jelena, 2020). Researchers can choose from a wide variety of methods in comparative research, each tailored to the specific field under study (Pappas & Woodside, 2021). It follows that the identification of several pedagogical concerns and challenges is the foundation for the interest in comparative study. Comparative pedagogy serves this purpose and makes a positive impact by shedding light on the inner workings of schools and classrooms as well as the educational process as a whole. In order to achieve its stated goal, this paper analyses theoretical understandings of comparative research's role in the cognition of pedagogical phenomena and the transformation of the comparative methodological apparatus in the contemporary context, all with an eye towards the methodology of comparative research in pedagogy (Siddique & Khurram, 2024). With an eye towards its function in educational system transformations, this study highlights the significance of comparative research in pedagogical epistemology (Rappleye & Komatsu, 2020). Using research tasks, we look at how comparative research epistemology has developed, what the methodological equipment of comparative research looks like, how it helps with teaching, and where it fits in (Kosmützky et al., 2020). Historical research and source content analysis form the backbone of the investigation.

Problem Statement

Research method in international comparative education is still is critical situation, student feel difficulties to know the different approaches and methods used in research. In this paper it is tried to identify different approaches and methods used in internationally for education research purposes and diagnose the best and appropriate approach for special phenomenon.

Objectives of Study

Following were the basic objectives of the study;

1. To identify the different approaches of research adopting in education across the world.
2. To find best method of research for special phenomenon.

Research Questions of the Study

1. **How** do specific phenomena or outcomes vary across different cases?
2. **Why** do these variations exist? What factors explain the differences?

3. **What** are the consequences of these variations for individuals, societies, or institutions?

Methods and Procedure

This research study extracted the research knowledge and different approaches from different sources like internet, papers, journals and books. Smart overview of all methods and approaches used in international perspectives for research in education. Then conclusions made.

Literature Review

Comparative Quantitative

Researchers who do quantitative research manipulate an independent variable in order to determine and explain its effect on a dependent variable (Pandey & Pandey, 2021). It is challenging to set the criteria of study in comparative research studies because the two groups studied may have extremely distinct social backgrounds. For example, such studies may compare vast volumes of demographic or employment data from countries that define or quantify key study variables in various ways (Bloomfield & Fisher, 2019).

The statistical approaches for data analysis inherent in quantitative research are still useful for identifying correlations in comparative studies, however, When it comes to quantitative research, a specialized research question helps comparative researchers concentrate their focus and produce a more precise comparative research topic.

Comparative Qualitative

Observation and recording of results without modification are the hallmarks of qualitative or nonexperimental research (Thomas & Thomas, 2021). When doing comparative research, the primary method of collecting data is observation, and the purpose is to identify similarities and contrasts between two groups based on their unique circumstances. Qualitative observation techniques are used to identify these parallels and differences (Busetto et al., 2020). The design of comparative studies around various case studies in which persons are watched, and actions are documented has also been preferred by certain researchers. The findings of each instance are then compared to those of other groups (Figgou & Pavlopoulos, 2015).

When to Use It Comparative Qualitative

Cross-national comparisons should be made via comparative research studies. To better comprehend these two groups, these studies compare and contrast their similarities and differences (Busetto et al., 2020). By comparing and contrasting, we may get fresh perspectives and a deeper knowledge of everyone involved. These investigations are also more costly since they need teamwork, strong teams, cutting-edge technology, and access to global databases. When funds and resources are available, use a comparative research design (Bartlett & Vavrus, 2020).

When Not to Use It Comparative Qualitative

There is no need to do comparison studies when there are insufficient funds for the project,

a lack of technology, and few team members. These studies should only be carried out if sufficient population samples are available due to their bigger size (Wagenaar et al., 2022). If the requisite organizational and technical resources are not available, comparison research should be avoided because of the substantial measurement analysis required. If data can't be measured reliably and evaluated with integrity and validity, don't utilize a comparison design (Braun & Clarke, 2021).

Research Study Design Types

A study's main objective is to find an answer to a specific topic. How does this issue relate to a particular demographic and a specific phenomenon or intervention? Researchers conduct experiments to discover the link between an independent variable (the intervention) and a correlated outcome (the outcome) (Rezigalla, 2020). In a non-experimental study design, the researcher does not actively modify any variables (Thiese, 2014).

Comparative Research Design

Research investigations that compare two groups are known as comparative research studies. These investigations might either be experimental or not. Socioeconomic and demographic factors are often included in comparative studies that aim to conclude nations or social groupings (Agazu et al., 2020). This research is designed to find out whether there are any similarities or differences between groups. In a comparison study, researchers may compare the effects of an intervention on students of two different races or the impact on low-income kids against high-income children. Research comparing these two groups provides insights on their similarities and differences (Berg-Schlosser & De Meur, 2009).

Qualitative Research Design

The primary method of qualitative research is direct observation. Observational data is collected and analyzed in an effort to establish a hypothesis about a certain group or

community. However, this data can be classified and measured, but the researcher is not manipulating it (Muzari et al., 2022). For a case study, the researcher observes and collects data on how a particular circumstance or environment affects a certain individual. If you're looking to investigate a particular group of people, like a grade level, you'll utilize this research design (Maxwell, 2012).

Quantitative Research Design

Experiments are carried out in a quantitative study design. Starting with a particular research topic and a specific independent variable, or intervention, the researcher starts the process of constructing a quantitative study (Duckett, 2021). For example, a quantitative study may be used to investigate the impact of a math intervention on primary school pupils in urban schools. Researchers choose a random sample of the population, and then alter the intervention to record the results (Bloomfield & Fisher, 2019).

A pretest-posttest design, in which the effects are measured both before and after the intervention, and a control group design, in which participants are randomly divided into two groups and the intervention is implemented in one and a placebo in the other, are two examples of quantitative research designs (Little et al., 2020).

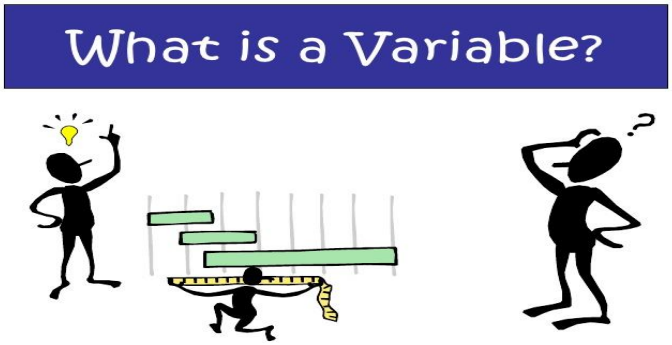
Exploratory Design

When there is few research on the subject, an exploratory design is utilized. A limited number of people were sampled in this research, which give generic information. Experimentation is an important part of the process of developing ideas and foreseeing potential hurdles or failures in the future of research. As a result of their small size and vagueness, this research cannot be utilized to establish a causal link. It is important to plan future investigations based on these findings (Stebbins, 2001).

Correlational Methods vs. Experimental Methods

Methodologies for doing research include correlational and experimental techniques. Correlational studies rely on preexisting data, while experimental studies enable researchers to manipulate the factors under examination. Researchers may derive conclusions regarding the effects of one variable on another via the use of experimental investigations (Chu, et al., 1985).

Research Variables



There are two variables of interest in an experiment: the dependent variable (the one that is being studied) and the independent variable (the one being studied). For example, the quantity of fertilizer used is the independent variable that impacts the amount of wheat that grows, which is the dependent variable in research on how fertilizer boosts wheat production on a farm (Kaur, 2013).

Correlational Methods

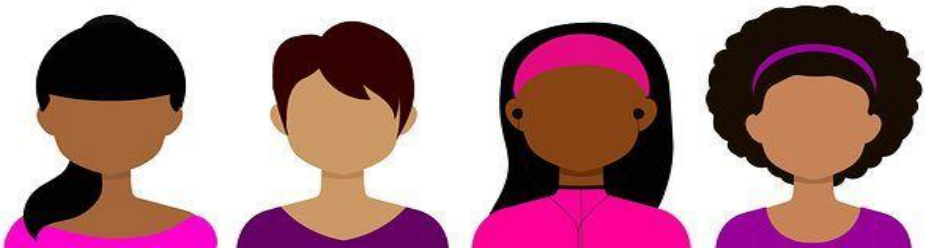
The variables in a correlation study are not under the direct control of the researcher or the research team. When a researcher is looking for information, she simply measures what she discovers (Makowski et al., 2020). To determine whether the two variables are linked, she might look at the correlation between them. Analyzing data from governments and other sources is a common practice in this kind of research. Correlation studies may sometimes lead to hypotheses that can be investigated experimentally in a more precise way (Curtis et al., 2016).

Experimental Methods

During a regulated experiment, the researchers have complete control over the independent variable and all other parts of the study. This enables researchers to conclude whether the

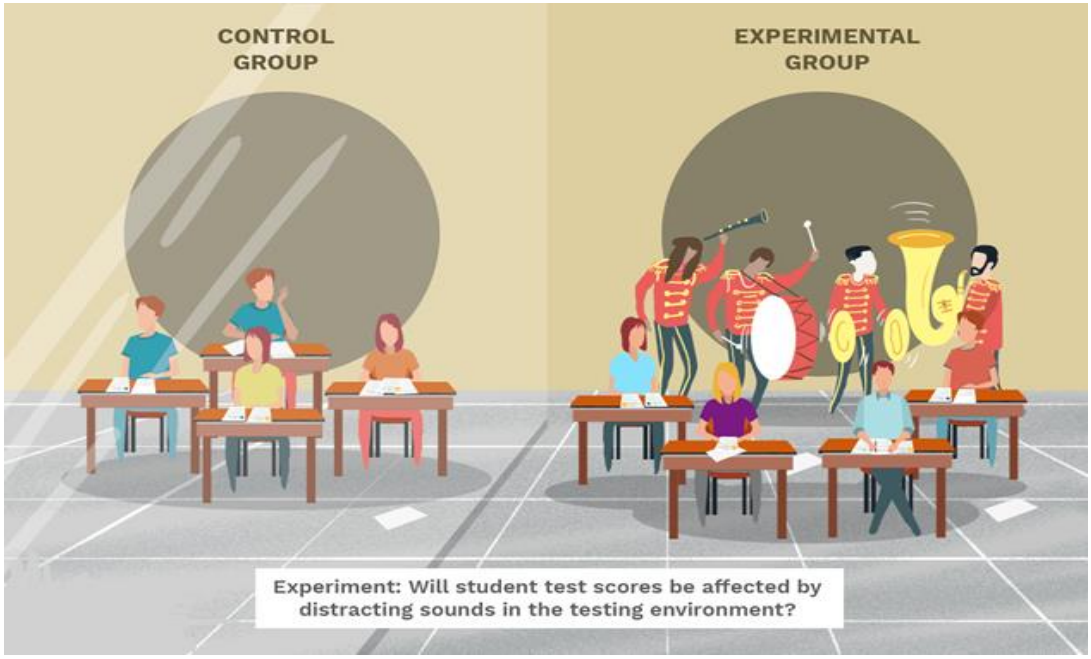
independent variable impacts the dependent variable, rather than the variables changing at the same time as a result of a random correlation (Gopalan et al., 2020). The researcher may also eliminate other factors. It is possible to assess changes in wheat yield by applying exact quantities of fertilizer to various parts of the same wheat crop while keeping other variables, such as rainfall, sun exposure and soil composition, constant (Christensen et al., 2011).

Differences and Overlap



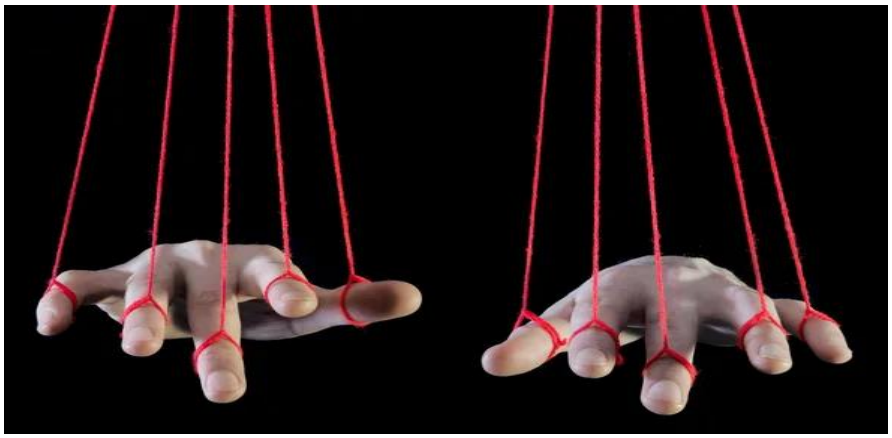
In the experimental treatment, the independent and dependent variables are separated. You could find it difficult to assess the strength of the correlation between two variables in correlation research due to various factors. Experiments are often more costly and time-consuming to carry out than other types of research. It is possible to investigate a bigger dataset than would be practicable in an experiment using correlation studies, which may help determine if a future controlled experiment is warranted. Performing an experiment and then performing a correlation analysis on the data is a strategy used by certain researchers (Sävje et al., 2021).

What Are the Differences Between Controlled & Comparative Experiments?



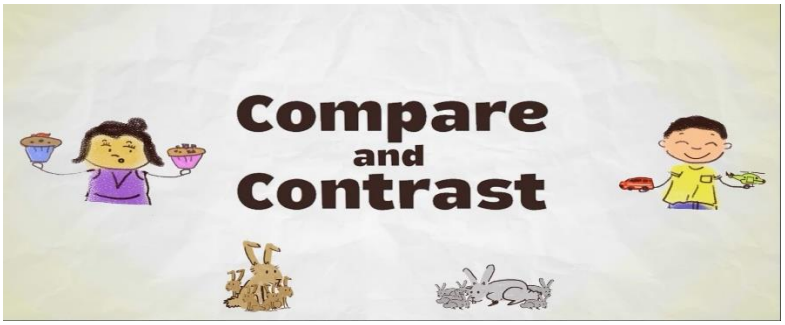
All trials may seem the same to the untrained eye. The scientist, on the other hand, recognizes that each experiment design has crucial features that make it more appropriate for certain types of study. Despite their superficial resemblance, the controlled experiment and the comparison experiment differ significantly (Giesbrecht & Gumpertz, 2004).

Scientists Are Control Freaks



All other variables in an experiment are kept constant, except for one known as the "treatment," in scientific research (Young et al., 1962). The therapy is administered only to a subset of participants in such an experiment. Non-treatment groups in medical research often gets placebos. As the name implies, "controlled" refers to the study's capacity to keep track of all potential influences on its dependent variable, such as the effectiveness of a new drug in treating a clinical condition. Researchers may thus be fairly assured that the varying outcomes across treatment groups are solely the consequence of a variation in treatment kind. One group of mice may be given a medicine to increase short-term memory, whereas another group may not be given the same treatment. Every other aspect of the mice's lives would be identical, down to the size of their shifts and the foods they ate. When scientists run the mice through mazes and witness the treatment group completing the labyrinth faster, they can almost surely attribute the speed boost to the new medicine (Weaver & Menzies, 2015).

Comparing and Contrasting



The purpose of comparative experiments is to discover the differences between various treatments (Maxwell et al., 2017). A comparison experiment consists of two or more treatment options. Researchers may already know that medication A enhances short-term memory in mice. It's possible that they'd want to see whether medication B has the same effect on short-term memory as drug A. Drug B may or may not be superior to Drug A. A controlled experiment involving the injection of mice with drug A and mice with drug B would be used to test this hypothesis. However, they would maintain control of all other aspects of the experiment, such as the surroundings and feeding of the mice. However, they would instead concentrate only on comparing how the two medications affected each mouse (Farghaly, 2018; Breitmeier et al., 2011).

It's All About Control

There are several similarities between the controlled and the comparative experiments. In contrast to the controlled experiment, there is a significant difference. A control group is always present in a regulated experiment. The term "control group" refers to a group of people who are not being treated in any way. This helps researchers to determine whether or not a therapy is having any impact (Breitmeier et al., 2011). To make sure that the medicines really do anything, scientists will frequently conduct a controlled trial first to see whether they are any better than no therapy at all. Comparative studies might be enticing. A scientist conducting a comparison experiment may conclude that "both treatments are equally effective," whereas, in reality, the appropriate choice of words would be "neither therapy is effective." In order to know this, a scientist must conduct controlled studies on the therapies she or a partner researcher has chosen (Hayes, 2021).

The Best of Both Worlds

It's not a must that you choose one of these two sorts of experiments. However difficult, expensive, and time-consuming it is, scientists are capable of conducting a controlled comparison experiment (Antony, 2023). In this sort of study, the researcher uses a variety of treatment options as well as a control group. Using this method, she may assess whether any of the therapies had an impact on the control group. So, if it turns out that both therapies affect the findings, she'll be able to compare them. Software that conducts all the comparisons at once has made it easier for scientists in this sort of experiment to do data analysis. "Do the therapies work?" and "Do they work?" are the two queries today's computer programmes can answer using a scientist's data. and "Which therapy is more effective?" (Bourner & Brook, 2019).

Examples of Limitations of a Study

Despite the fact that scientists have developed a well-defined technique over centuries, no one study is flawless (Laudan, 1978). Despite the fact that a hypothesis may be valid, it may not be proven, or bias may be introduced, or the study's scope and application may be limited. However, a smart researcher is aware of any limits and addresses them in her article, regardless of the circumstances (Ambrose et al., 2010).

Science Doesn't Tool Around

A scientist's toolbox is only as powerful as the weakest link in the chain (Metzger, 2023). A study might be hampered by the methods used by the researchers themselves. As a result of the strong reliance on instruments in modern research, investigations previously unimaginable have been made feasible, such as the detection of quantum particles. A study's ability to communicate its findings is directly correlated with the quality of the instruments used to conduct the research. Microscopes, for example, are limited in what they can measure. While a two-dimensional picture of bacteria may be seen under a microscope and findings recorded, the height of the bacterium cannot be recorded (Ubbink & Schär-Zammaretti, 2005). If you are reporting the volume of bacteria in your research, you will need to determine the height and multiply it by the observed area to produce a volume. Using a microscope in this manner reduces research accuracy.

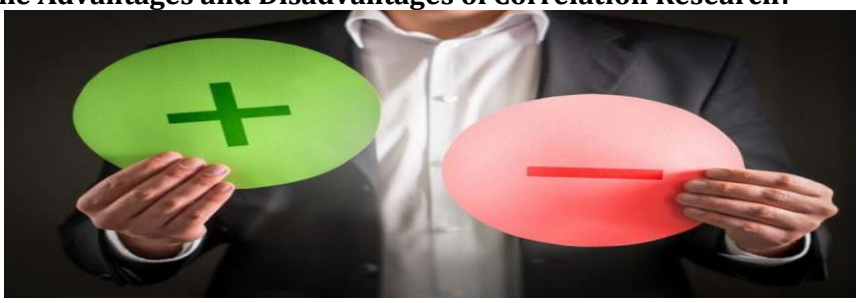
Subjects' Defects

Researchers use "subjects," or the things they're trying to learn about, throughout their research, from physics to medicine (McGee & Keller, 2007). For the most part, the qualities of topics are not constant in most scientific fields. Making conclusions may be difficult due to the participants' inconsistency. Medical professionals may administer one of two medications to two distinct groups of patients as part of a clinical trial, as an example. It's possible that physicians sought to ensure that the two groups were identical in demographics, such as the age, gender, and health condition of the participants. However, even seemingly little variations in the individuals' lifestyles and genes might distort the results of the experiments. As a result, scientists throughout the world have varying sources and levels of financing; therefore, big groups of subjects are not always possible (Birkle et al., 2020). For example, a biologist may not be able to purchase many chimpanzees for her research. It is possible that a study's conclusions may not be robust or statistically significant because of the tiny sample sizes that are common in research studies.

Acts of Nature

Scientists are nonetheless fallible people. Scientists sometimes make mistakes, are unwell, and have to take time off from their work or encounter technological difficulties (Ravetz, 2020). These kinds of issues are likely to be reported in the article of a scientist who suffers from them. Regent University points out that scientists often encounter problems that are beyond their control. For example, if a botanist returns to his plot of land and discovers that numerous plants have vanished, he may be lacking data on the link between the number of pests on a particular plant and the amount of sunshine that plant gets. He may believe that a wild ruminant ate the vegetation. Because he can't control the factors that lowered the size of his sample, he risks underestimating the significance of his findings (Levy, 2022).

What Are the Advantages and Disadvantages of Correlation Research?



Every day, universities and private research organizations throughout the world are undertaking studies that unearth exciting new facts about our planet and its inhabitants. When two variables interact, correlational research examines the link between them. Many scientific investigations, especially in the health and social sciences, benefit from correlation research since it is both popular and effective. Correlation studies, like many other types of study, have both advantages and disadvantages (Filipowich, 2018).

Experimentation and Correlation

There are two ways to perform a study: correlation and regression. Experimentation is also a kind of this. Generally, experimentation is favored because it allows the researcher to control and directly measure the relevant variable. Rowing, for example, researchers may calculate precisely how much time and technique is spent rowing and then test the results after a certain period; they can also adjust for other factors that might alter their findings. This is not the case with correlational research (Gelman et al., 2021).

Principles of Correlation Research

Analyzing the correlation between two variables is known as correlation (Schober et al., 2018). In contrast to laboratory settings, this link may be detected in the wild. In the absence of an experimenter, variables interact outside of the laboratory rather than being controlled by an experimenter. No correlational investigation can reveal the source of a phenomenon since there is no experimenter to control how factors interact. An important theme has emerged: correlation does not always imply causality. Nonetheless, correlational discoveries may be quite helpful when making broad but important observations (Rutter, 2007).

Advantages of Correlation Research

More data may be gathered via correlational research than through experimentation. As a consequence, correlational research tends to be more relevant to daily life since it is

conducted outside of the laboratory. It is also an advantage of correlational studies because it allows other researchers to do countless additional investigations (Toyon, 2023). First-time researchers might start with correlational research as an excellent place to begin their investigations. It allows for further investigation into causality, as well as narrowing down the results and determining causation empirically by determining the intensity and direction of the association (Opić, 2019).

Disadvantages of Correlation Research

A correlation study can only show that there is a connection, but it cannot explain why there is a connection. In a correlative study, there is no indication of which variable is responsible for the other one (Curtis et al., 2016). A correlation between money and education does not tell us whether wealth leads to greater education or the other way around. Until additional study is done, causality cannot be shown for either. A third, unidentified factor may also be to blame. Living in New York, for example, may provide access to both financial security and higher education.

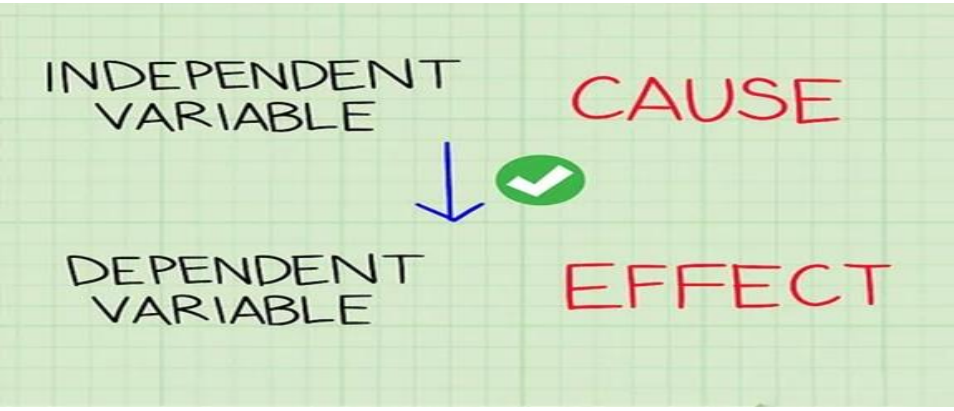
Independent vs. Dependent Variables in Sociology

Sociology is a branch of social science that uses scientific techniques to examine human society. Sociologists are interested in a wide range of social units, from the family to the contemporary industrial society. Sociological studies, like any scientific study, look for a cause-and-effect link between two variables. Sociologists categorize social phenomena as independent and dependent variables in order to better understand them. In order to understand social research, you need to know which variables go under which category (Woolley, 1997).

Dependent Variables

In sociology and other social sciences, a dependent variable is anything that is impacted or altered by another thing. In sociology, dependent variables include the amount of crime or poverty in an area, the prevalence of racism, or the order in a civil society. – There are many programmes, events, and other phenomena studied by sociologists that influence these and other dependent variables. For example, sociologists interested in urban crime may inquire about how specific variables influence crime rates in the city. Urban crime rate is the dependent variable in this case. Sociologists use the letter "Y" to denote the dependent variable in arithmetic (Ledford et al., 2018).

Independent Variables



A dependent variable's value or level may be altered or affected by a variety of independent variables. The letter "X" is often used by sociologists to signify mathematically independent variables. A common sociological study topic asks how and to what degree X impacts Y. Urban crime rates may be examined by a sociology professor who studies criminal behavior. The independent variable in such research is the absence of economic opportunity, while the urban crime rate is the dependent (Lewis-Beck & Mohr, 1976).

How to Collect Data from a Science Project

Whether the project is short-term or long-term, proper and effective data collecting provides several advantages: It is substantially more efficient in tracking anomalies and maximizing the information that can be recovered from a given dataset. Measurements such as height and weight may be used to objectively gather data. Qualitative methods, such as utilizing terms like "light-colored" or "dark-colored," may also be used to gather data. It is also important to keep track of trials, treatment groups, and samples so that data analysis may be as efficient as possible (Brossard et al., 2005).

Measure It

Quantitative measurements provide a numerical representation of the experiment's progress. As a result, they are able to provide very precise measurements of change. As an example, testing various batteries by measuring the speed of a solar-powered automobile provides valuable insight into their strength. In chemical reactions, measuring the amount of solid precipitate that formed tells us how easily the reactants interact. It is possible to

quantify the percentage of error in repeated observations or experiments, which is called a standard deviation. It is possible to do statistical analysis using quantitative metrics to determine if the findings are based on more than random chance (Olesko & Holmes, 1993).

Describe It

It is possible to categorize the outcomes of qualitative measurements. Clear, pink, or crimson liquids are produced as a result of chemical reactions. Qualitative measurements are simpler to implement, but they provide less useful data. Semi-quantitative measurements, on the other hand, are qualitative measurements that are repeated several times throughout the data gathering process. Since "clear," "pink," and "red" aren't numbers, three repeated trials may all return around 10% clear and 90% red liquid, indicating that the experiment consistently generates 90% red liquid. It is possible to conduct statistical tests to establish if the impact is genuine or merely a matter of chance using semi-quantitative analysis (Hinkelmann & Kempthorne, 2007).

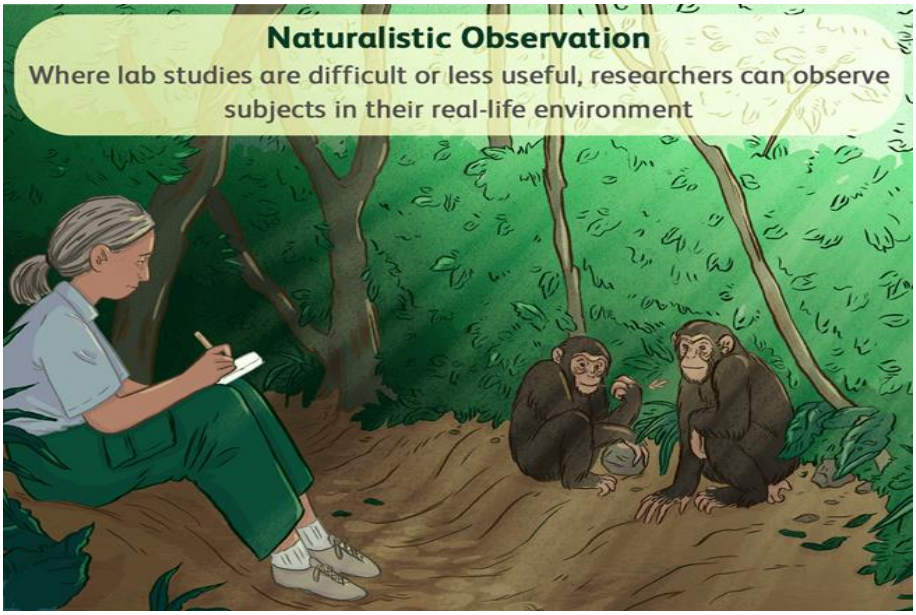
Have Triplicates and Repeats

There should be a minimum of three samples per treatment group for each condition being studied, referred to as "triplicates." For example, if you're investigating the influence of sunshine on the development of potatoes, you should have more than one potato in each group. This ensures that there are no surprises down the road. In the event that just one potato is available, your lengthy experiment will be ruined. You don't have to worry about natural variances in the rate of development of individual potatoes skewing the impact of sunshine if you have two, three, or even more potatoes in each treatment group. Your siblings may not all be the same height while being members of the same family. Finally, experiment a minimum of two more times to verify your findings and compile your data into a table (Cook et al., 2008).

Making a Quantitative Observation

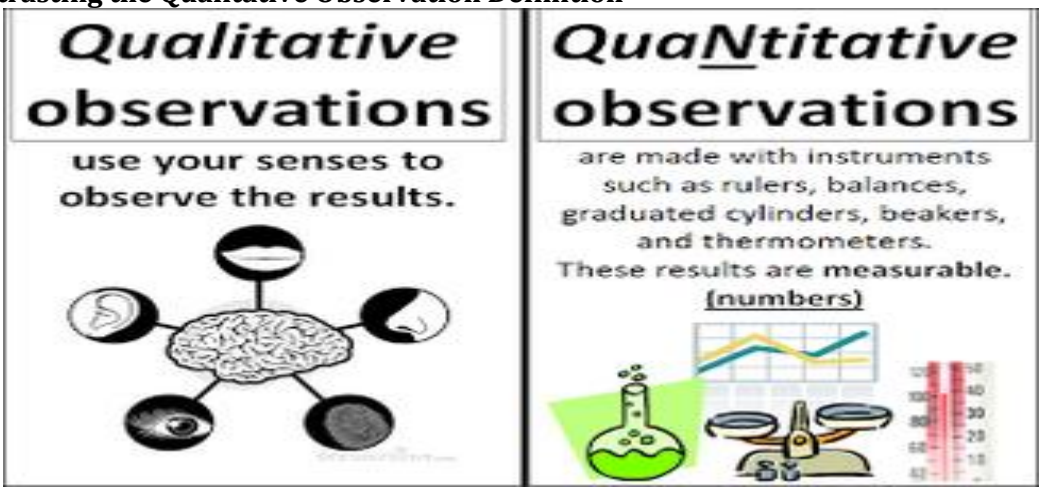
Observing how people, animals, and things behave and interact in diverse settings is a valuable tool for scientists. One of the numerous methods scientists use to make discoveries and get a better knowledge of the world is observation. Quantitative observation is required in research that uses a broad range of techniques to manipulate variables, measure responses, analyze data, and make conclusions (Watson, 2015).

Using Quantitative Observation Methods



Quantitative research entails making observations and gathering data with the use of instruments and procedures that make it possible to assign numerical values to the findings. Social sciences, where subjective human emotions are being observed, do not employ quantitative research as often as other fields of study. Observing variations in size, colour, or quantity is known as quantitative observation (Dawkins, 2007).

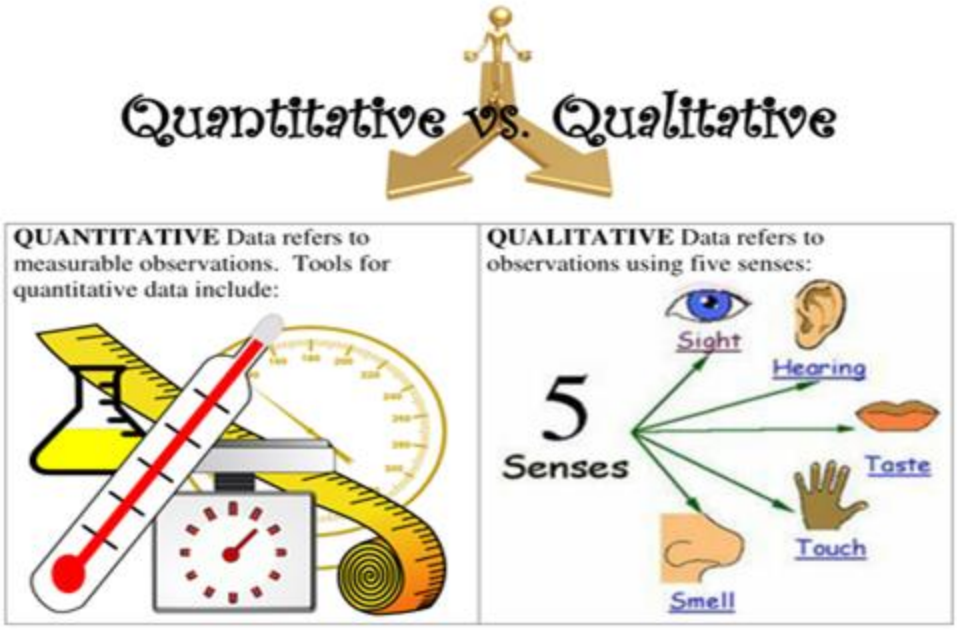
Contrasting the Qualitative Observation Definition



In contrast to the quantitative definition, the qualitative observation definition is vaguer. That's because qualitative observation focuses on acquiring information that's harder to measure, like human behaviour study, therefore it's more subjective. Interviews, participant

observation, and passive observation are all common methods for gathering qualitative data, but they may also be used in conjunction with each other. Qualitative research is widely used by psychologists, sociologists, and other social scientists since the phenomena they are studying cannot be assessed in any other manner. When it comes to qualitative observation, human emotion, cultural diversity, and life experiences are only few of the examples (Gnisci et al., 2008).

Quantitative and Qualitative Observation Examples



The primary methodological distinction between qualitative and quantitative research is the manner in which information is gathered and processed. As an example of a qualitative observation, a recorded interview-based biography might be a good illustration. Research on the efficacy of a new blood pressure medication is an example of a quantitative observation that is more objective. Analyzing qualitative data is done in real time, while quantitative data is usually examined after it has been obtained. Field observations are often used for qualitative observations, while laboratory observations are typically used for quantitative observations (Bryman, 2017).

Good Qualitative Research Topics in Education

Quantitative research offers the advantage of allowing researchers to establish their results in statistically significant ranges. In addition, it has a restricted scope in terms of what it can look into. However, Qualitative Research has the advantage of allowing for the exploration of subtleties that statistics cannot. These distinctions are particularly important in educational studies (Lichtman, 2023).

What Are the Advantages & Disadvantages of Non-Experimental Design?

Researchers of all hues may use quantitative approaches to collect data on a wide range of topics. Although one form of quantitative technique design may not be suitable for all types of study, researchers must choose their approaches wisely. It is necessary for specific research to be conducted in a manner that does not interfere with the study's subject matter. The term "non-experimental" design refers to this sort of strategy, which has both benefits and downsides (Clark-Carter, 2009).

Advantage: Low-effort

Occasionally, research necessitates the collection of just a small amount of data, such as a survey. Applying a treatment or otherwise engaging the researcher in the process rather than merely asking questions, for example, might disturb research if you want to perform a census. Additionally, short surveys don't need researchers to administer them. Just distribute the questionnaires and then analyze the results. When dealing with a small number of researchers or limiting the number of variables in a study, this may be a huge benefit (Guerin, 2018).

Disadvantage: Shallow

When it comes to non-experimental design, the lack of post-treatment data collection is a drawback. Post-treatment data may open up a whole new world of possibilities for researchers. When experiments or treatments are not employed, the study tends to be limited to a restricted number of factors. Non-experimental quantitative design can't provide the same depth of findings as experimental design since it's so rapid and easy to do. In many cases, researchers can't draw complex, illuminating, or genuinely significant conclusions from data generated via non-experimental design (Crano et al., 2014).

Advantage: Non-Invasive

Research applications in which the researchers' engagement or experimentation may be unethical benefit greatly from a non-experimental approach. Human participants' ability to work normally, safety, or peace of mind may be jeopardized in studies involving therapy or experimentation. Anthropological research displays this effectively. Experiment design in human studies may sometimes objectify and, at its extreme, dehumanize study participants. Non-experimental design is a great way to retain the natural, visible behaviours of a

community or to protect the dignity and self-possession of an individual (Allen et al., 2017).

Disadvantage: Proving Correlation

Data collection is at the heart of research, and it is used to establish a connection between variables. Experimentation or applied treatments may increase the number of variables that can be manipulated in quantitative research. Observing a single person's behavior to a particular circumstance may only offer knowledge about the few factors in that scenario. For example. Because of therapy or treatment, researchers are able to collect a lot more data in that situation. Correlation is greater when researchers notice an impact in a range of distinct contexts. Non-experimental quantitative technique designs may fail to give enough data to prove even a correlation, much alone a causal relationship (Rosenthal et al., 2010).

Methods of Research Design

The design of a research endeavor has a lot of moving parts. A single hypothesis or issue is investigated using a research design. When doing research, the hypothesis serves as a guide for the researcher in determining what methodologies to utilize and what results to anticipate. It is common for investigators to choose one of a handful of fundamental study designs or procedures before embarking on their quest (Abutabenjeh & Jaradat, 2018).

Functions

Most research investigations are aimed at discovering the link between two factors. A hypothesis is a statement that predicts the relationship between an independent variable and a dependent variable. This association may be found by an experiment or descriptive research, for example. In order to examine the link between two variables in detail and to find causation, researchers sometimes resort to experiments. Descriptive studies, on the other hand, do not conduct experiments but instead merely observe and describe a phenomenon as it now exists (Caruth, 2013).

Types

In a pre-experimental or non-experimental design, the researcher does not compare the results of one group to those of another. A quasi-experimental design, on the other hand, uses an experiment to compare various groups, but the groups are not randomly selected. An experimental study design uses at least two groups, one of which serves as a control group. Groups that are not provided treatment throughout the trial are referred to as control groups. The findings can be generalized since the individuals are chosen at random in a real experimental design (Dannels, 2018).

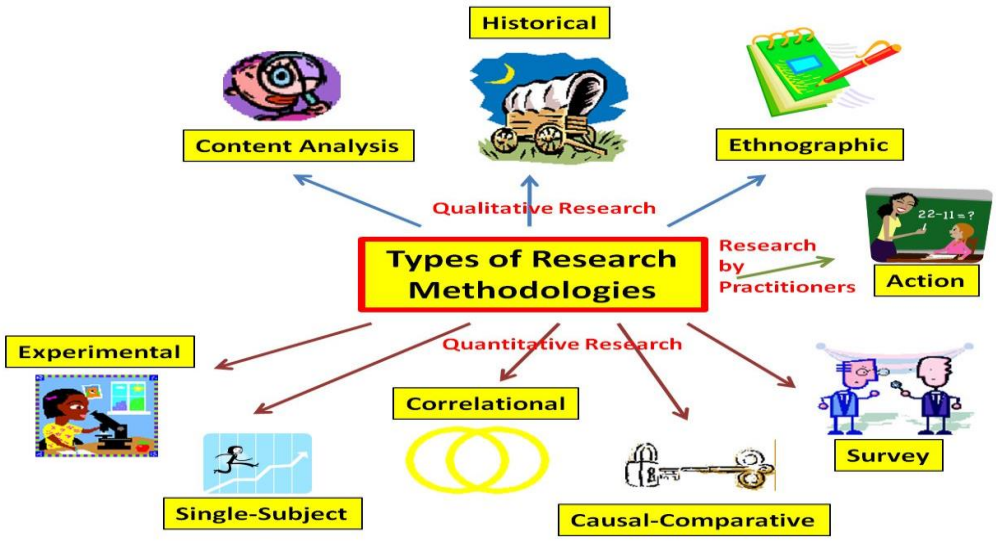
Features

There is a problem with pre-experimental designs since they don't compare two groups and don't employ control groups; that is, those that don't get the therapy. They are useful for gaining a better understanding of phenomena, but they cannot establish a link between the two. Quasi-experimental designs have greater validity because they employ comparison groups and can show a difference between the groups. As a consequence, the findings cannot be extrapolated to other situations. A genuine experimental design is the only technique to establish or refute a hypothesis or link between two variables (Salkind, 2010).

Considerations

Because they do not compare two groups and do not provide control groups, pre-experimental designs are faulty. It's possible to get knowledge from them, but you can't infer a connection between the two. The validity of quasi-experimental designs is enhanced by the inclusion of comparison groups and the ability to demonstrate a difference between the groups. These approaches, on the other hand, do not include randomization; hence, it is impossible to extrapolate the findings from them. False predictions or relationships between two variables cannot be validated or refuted without the use of a genuine experimental design (Sileyew, 2019).

Different Types of Methodologies



Research Method in International Comparative Education

You must choose a methodology before commencing any research endeavor. This will direct your research, assist in the selection of data collection methods, and aid in the analysis. Mixed methods are a third methodological approach used by researchers. Case studies, self-reporting, and surveys are only a few of the many possibilities available under these broad categories (Jonker & Pennink, 2010).

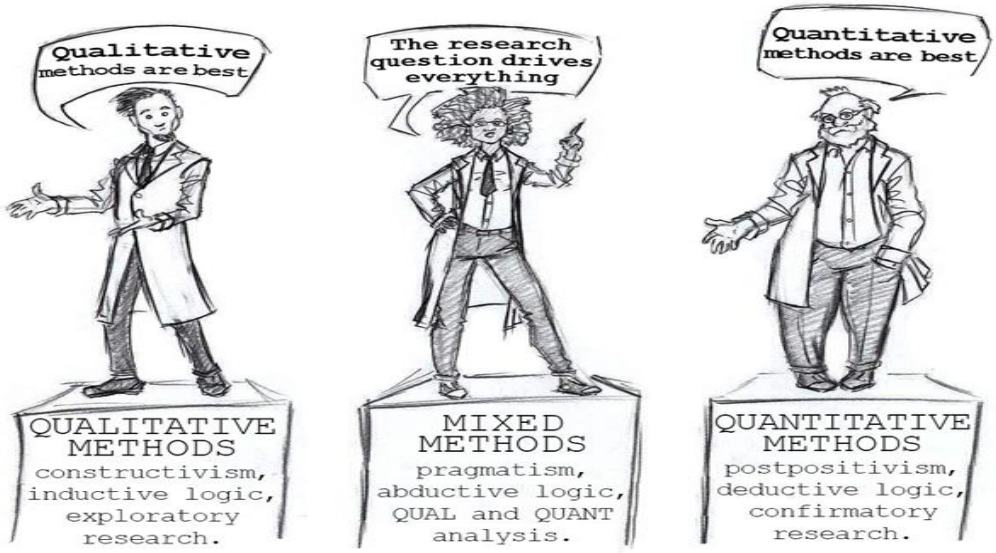
Qualitative Research

According to "Qualitative Research Methods: A Data Collector's Field Guide," published by Family Health International, qualitative research aims to investigate a particular occurrence rather than establish a prediction (Mack, 2005). Qualitative approaches, such as interviews, focus groups, and observations, are used in the social sciences and education. Qualitative approaches allow for deeper, more personal and culturally relevant analyses of the subject matter (Fossey et al., 2022).

Quantitative Methods

It is more objective to use quantitative research approaches than qualitative ones The researcher formulates a hypothesis and then conducts a controlled experiment to verify or disprove it. Quantitative approaches focus on the collection and analysis of data rather than the exploration or description of a phenomena. In science and medicine, this form of study is often used (Stockemer et al., 2019).

Mixed Methods



Qualitative and quantitative research are both included in mixed methods studies (Lund, 2012). This approach makes use of a variety of tools, such as interviews and observations, as well as hard data like numbers or facts. It is possible to explore a topic using a variety of methodologies, allowing the researcher to get a more complete understanding of the issue. More than one philosophical viewpoint may be included into a study using a mixed technique (Sale et al., 2002).

Methodologies and Design

There are a variety of designs within each primary technique. As a framework or philosophy, they vary from accurate methodologies utilized in the research. Case studies are an example of a design that focuses on the investigation and description of a single individual or group. Observations, interviews, and self-reports from the subject may all be used by a researcher to generate a comprehensive picture. Using this example, we may extrapolate the phenomena to a larger group of people with comparable characteristics (Abbott & McKinney, 2012).

What Is the Meaning of the Descriptive Method in Research?

Scientists formerly reported such natural occurrences like Galapagos finch beak forms. The descriptive approach is used in this sort of study. In other words, instead of tinkering with the system to see what happens, someone makes an observation and then draws inferences from it (Siedlecki, 2020).

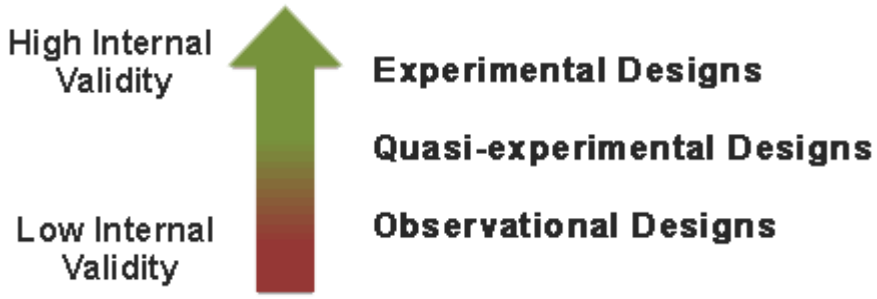
Descriptive Studies

In contrast to experimental research, descriptive studies do not test hypotheses (Siedlecki, 2020). Questions like who, what, when, and where may be answered through descriptive research (Morgan & Harmon, 2000). On the other hand, questions about why and how often need an experiment. When conducting a descriptive study, researchers look at how people act over time. Observe, for instance, that people on the sidewalk prefer to avoid huge dogs on leashes, but they stop to touch smaller dogs. Observations like these may drive you to examine behavior and plan research that manipulates the environment in some manner. You are no longer engaged in descriptive research when you begin to change the environment to answer a particular research topic (Bell, 2014).

What Is the Difference Between the Internal and external Validity of the Research Study Design?

Experimental design relies heavily on validity to ensure that the results are reliable. The degree to which a study design is able to measure what it seeks to assess is referred to as validity. Good research is constantly concerned with maximizing the validity of the results, both internally and externally (Baldwin, 2018).

Internal Validity

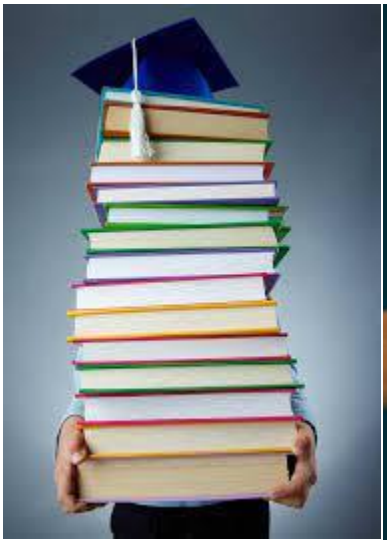


To put it another way, internal validity relates to the study's validity. It is possible to say with certainty that the study's modification led to the observed results. In their chapter in the "Handbook of Research Methods in Abnormal and Clinical Psychology," clinical psychologist Steven Taylor and clinical researcher Gordon J. G. Asmundson discuss the importance of a design's internal validity (McDermott, 2011).

External Validity

If the study's findings can be extrapolated to other populations, they have external validity. If a study's results can be duplicated in and across different populations, periods, and situations, then it has a high degree of validity. It is possible to replicate the findings of an experiment with strong external validity and get comparable results in other settings (Findley et al., 2010).

What is a Dissertation?



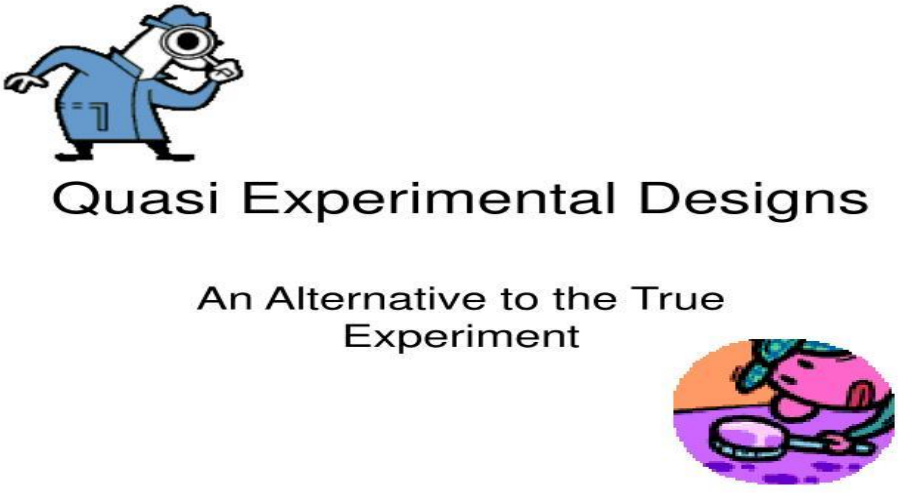
Students seeking a doctor of philosophy degree are expected to write a lengthy and comprehensive dissertation. Ph.D. students are required to do a dissertation in addition to

their regular courses in order to deepen their knowledge on a certain subject area. According to "Writing the Winning Thesis or Dissertation: A Step-by-Step Guide," the typical dissertation is 200 pages long. By delivering novel research results or critical analysis of past studies, dissertations add to the student's area of study. Students must present a defense of their dissertation before a committee of professors (Thompson, 2012; Borden, 2006).

Important Components of a Dissertation

It is common for a doctoral student's dissertation to begin with the selection of a research issue or problem. Dissertations may include hypotheses to be tested depending on the nature of their research. The dissertation then describes relevant theories and credible studies related to the topic. Statistical tests and other research methods, such as focus groups and case studies, are explained in the methodology section. The dissertation concludes with a summary of the results, as well as suggestions for further research (Randolph, 2019).

What Is a Quasi-Experimental Study?



The first step in writing a dissertation is identifying a subject or issue that was addressed in the doctoral student's research paper. Hypotheses may also be included in a dissertation, depending on the nature of the research. The dissertation then discusses important ideas and

findings that are reliable. Ph.D. students obtain and evaluate data via the use of statistical tests or other research methods like focus groups or case studies, which are explained in this section. The dissertation concludes with a summary of the results, as well as suggestions for further research (Chiang et al., 2015; Thyer, 2012).

Quasi-Experimental Topics

Numerous quasi-experimental issues are concerned with a person's surroundings or social context. Researchers may study two boys of the same age who live in the same area, attend the same schools, and have the same access to opportunities. For example. A quasi-experimental study may examine the factors that led to the two boys' disparate results, if one is a Harvard-bound student and the other is a drug dealer (Gopalan et al., 2020).

Advantages

A quasi-experimental approach may assist researchers identify the tendencies that contribute to certain results in specific communities, schools or ethnic groups. Sociologists and psychologists may use these tendencies to gather data on a range of subjects. Psychology journals, textbooks, and research papers all use these numbers to illustrate points. The data may be used by community initiatives, legislators, and neighborhood activists to achieve beneficial changes for people and communities (Price et al., 2015).

Disadvantages

Social scientists often dismiss quasi-experimental studies as useless since there are so many variables that might affect an experiment's outcome that it is impossible to isolate each one. Human behaviour tests, according to some experts, can never be completely correct. Social scientists indeed conduct quasi-experimental research in order to acquire more accurate findings by manipulating and controlling the stimuli they use (Andrade, 2021; Shadish & Luellen, 2012).

When to Use Quasi-Experimental Research

When it's impossible to randomly allocate people to treatment groups, social scientists turn to this method. Pregnant women who aren't using drugs can't be randomly selected to participate in a study by researchers looking into the consequences of drug misuse on pregnancy. It is impossible to conduct quasi-experiments without pre-existing conditions. If you're looking for a more lighthearted approach to understanding why individuals act in various ways in certain social contexts, you may want to conduct a series of entertaining experiments (Maciejewski, 2020; Reichardt, 2009).

Conclusions

A simple definition of comparative study is the process of comparing two or more items in order to learn anything about one or more of the objects being compared. In many cases, this method is used to examine a wide range of subjects at the same time. The majority of researchers think that comparative research does not have a unique approach. However, comparative programmes have a case to answer against the claim that their research lacks a "seamless whole" because of their interdisciplinary approach.

In comparative studies, certain methodologies are significantly more prevalent than others. The vast majority of comparative studies that make use of quantitative data do so because it is much more common than qualitative analysis. Comparative study employs the same broad strategy of comparison that we use in our daily lives. Like instances are handled alike, whereas distinct cases are treated differently depending on the degree of difference. Research results will not be very useful if one is able to discriminate between two carries enough.

Due to the high costs associated with gathering primary data on such vast topics as a country's policy environment, secondary quantitative analysis is rather common in comparative research studies. Overall, this research involves looking at big data sets. It's common practice to compare big amounts of data (particularly government-sourced data). A common way to compare welfare states is to take the average amount of expenditure on social welfare for each country into account.

Comparative study seldom examines "big ideas," such as Marxism, in keeping with how much thinking has gone in the previous century or so in general. Some theories don't claim to represent our complete social structure but rather a component of it. Consider the typical study program, which searches for variances between two or more social systems and then examines these variations in connection to some other characteristic residing in these cultures in order to discover whether they are connected. Research by Epping-Andersen on social welfare systems is a prominent example of this kind of study. There was a noticeable variation in the extent of decommodification of social welfare commodities across different social welfare systems, and he compared them accordingly. There are three categories of welfare states depending on their extent of decommodification, according to his findings. A mix of class alliances, mobilization, and the regime's legacy, according to his theory, was required for decommodification to occur. Using comparative research, Epping-Andersen evaluates the decommodification levels of several Western nations and then builds a hypothesis of the divergence based on the results.

There are several ways to do comparative research. There are two main elements to consider: space and timing. Comparisons across nations, regions, cultures, and even governments are ubiquitous, but cross-national comparisons are by far the most popular. This is particularly true in places like New Zealand, where legislation often varies depending on which race it applies to. Similar or dissimilar nations or groups of countries are often compared in cross-regional research, as well as comparing one's own country to others or the whole globe.

There are several ways in which historical comparisons may be made. Both snapshots and time series may be used to compare the impacts of a policy over some time, or a policy can be compared to the effects of a similar policy at other points in time.

Comparative research topics, according to many, have no special significance. This may be the case, but a quick look at comparative efforts indicates that certain issues are more often addressed than others. It's a well-worn debate to see whether socioeconomic or political issues have a greater role in government activity. However, the only thing that can be guaranteed in comparative study is the presence of differences to be examined.

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