Module 3 Appraising Evidence: Research Designs & Methods Pre-reading

The following excerpt is from DFID's March 2014: *How To Note on Assessing the Strength of Evidence:* https://www.gov.uk/government/publications/how-to-note-assessing-the-strength-of-evidence

Part I: Describing a single study

9. The current note recommends that single studies be described and categorised as follows:

   i. by type
   ii. by design
   iii. by method.

Type of research

10. This note recommends the categorisation of research studies by overarching type as follows:

    i. *Primary research studies* empirically observe a phenomenon at first hand, collecting, analysing or presenting 'raw' data.

    ii. *Secondary review studies* interrogate primary research studies, summarising and interrogating their data and findings.

    iii. *Theoretical or conceptual studies*: most studies (primary and secondary) include some discussion of theory, but some focus almost exclusively on the construction of new theories rather than generating, or synthesising empirical data.

Research Designs, Research Methods

Introduction

11. A research design is a framework in which a research study is undertaken. It employs one or more research methods to:

    i. collect data
    ii. analyse data.

12. **Data collection** can be either quantitative or qualitative.

13. **Data analysis methods** can also be quantitative (using mathematical techniques to illustrate data or explore causal relationships) or qualitative (collating 'rich' data and inferring meaning).

14. The line between quantitative and qualitative research is blurred by mixed method designs. Mixed methods may involve the quantitative analysis of qualitative data or the interrogation of quantitative data through a qualitative lens.[6] In that sense, different research designs and methods can be 'nested' as part of a flexible methodological approach to a research question.

15. Some designs are better suited for ***demonstrating*** the presence of a causal relationship, others are more appropriate for ***explaining*** such causal relationships while some designs are more useful for ***describing*** political, social and environmental contexts.

16. **Primary** research studies tend to employ one of the following research designs. As noted above, they may employ more than one research method.

    i. *Experimental* research designs (also called 'intervention designs', 'randomized designs' and Randomised Control Trials [RCTs]) have **two key features**. First, they manipulate an independent variable (for example, the researchers administer a treatment, like giving a drug to a person, or fertilizing crops in a field). Second, and crucially, they randomly assign subjects to treatment groups (also called intervention groups) and to control groups. Depending on the group to which the subject is randomly assigned, they will/will not get the treatment.

    The two key features of experimental studies increase the chances that any effect recorded after the administration of the treatment is a direct result of that treatment (and not as a result of pre-existing differences between the subjects who did/did not receive it). Experimental research designs use quantitative analysis (often 'descriptive statistics' followed by 'inferential statistics'). The combination of random assignment and quantitative analysis enables the construction of a robust 'counter-factual' argument (i.e. "this is what would have happened in the absence of the intervention or treatment"). Such designs are useful for demonstrating the presence, and size of causal linkages (e.g. "*a* causes *b*") with a high degree of confidence.

    ii. *Quasi-Experimental* research designs[7] typically include **one, but not both of the key features of an experimental design**. A quasi-experiment might involve the manipulation of an independent variable (e.g. the administration of a drug to a group of patients), but participants will not be randomly assigned to treatment or control groups. In the second type of quasi-experiment, it is the manipulation of the independent variable that is absent. For example, researchers might seek to explore the impact of the awards of scholarships on student attainment, but it would be unethical to deliberately manipulate such an intervention. Instead, the researchers exploit other naturally occurring features of the subject groups to control for (i.e.

[6] Stern, E. and others (2012). "Broadening the Range of Designs and Methods for Impact Evaluations." Department for International Development, Working Paper 38, p. 30.
[7] See California State University: Department of Psychology. 'Quasi-experiments.' Available at: http://psych.csufresno.edu/psy144/Content/Design/Nonexperimental/quasi.html

eliminate) differences between subjects in the study (i.e. they 'simulate' randomisation). A regression-discontinuity design is an example of a quasi-experiment.

iii. *Observational* (sometimes called 'non-experimental') research designs display **neither of the key features of experimental designs**. They may be concerned with the effect of a treatment (e.g. a drug, a herbicide) on a particular subject sample group, but the researcher does not deliberately manipulate the intervention, and does not assign subjects to treatment or control groups. Instead, the researchers is merely an observer of a particular action, activity or phenomena. There are a range of methods that can be deployed within observational research designs:

- A variety of observational methods use **quantitative data collection and data analysis techniques** to to infer causal relationships between phenomena: for example, cohort and/or longitudinal designs; case control designs; cross-sectional designs (supplemented by quantitative data analysis) and large-n surveys are all types of observational research.

- Interviews, focus groups, case studies, historical analyses, ethnographies, political economy analysis are also all forms of observational research design, usually relying more on **qualitative methods** to gain rich understanding of the perspectives of people and communities.[8] When such studies are underpinned by structured design frameworks that enable their repetition in multiple contexts, they can form a powerful basis for **comparative research**.

Box 2: Research designs and methods as a means of reducing bias

If research is all about the quest for 'answers', then the consumers of research (whether they are policy-makers or community members) are entitled to expect that those 'answers' are credible and trustworthy. This is especially important in studies which seek to explore cause and effect, or action and reaction: users of research often have an appetite for patterns and predictability, and are curious to know if initiating action 'x' will result in consequence 'y'.

Some of the research designs and methods described explicitly seek to demonstrate **cause and effect** relationships, and are able to do so with varying degrees of confidence. Because they construct a 'counter-factual', experimental studies significantly reduce the risks of important biases affecting the findings of research, and for this reason, they are often regarded as the 'gold standard' for research which aims to isolate cause and effect.

However, research is not just about identifying cause and effect: it is also about understanding **why** some events unfold as they do, and learning more about why people have particular perspectives and interpretations of the events that affect them. This is often where the rich variety of observational (especially qualitative) research designs and methods add substantial value.

[8] Stern, E. et al. (2012). "Broadening the Range of Designs and Methods for Impact Evaluations." Department for International Development, Working Paper 38.

17. **Secondary review studies** tend to employ one of the following research designs:

i. *Systematic Review* designs adopt exhaustive, systematic methods to search for literature on a given topic. They interrogate multiple databases and search bibliographies for references. They screen the studies identified for relevance, appraise for quality (on the basis of the research design, methods and the rigour with which these were applied), and synthesise the findings using formal quantitative or qualitative methods. DFID Systematic Reviews are always labelled as such. They represent a robust, high quality technique for evidence synthesis. Even Systematic Reviews must demonstrate that they have compared 'like with like' studies.

ii. *Non-Systematic Review* designs also summarise or synthesise literature on a given topic. Some non-systematic reviews will borrow some systematic techniques for searching for and appraising research studies and will generate rigorous findings, but many will not.

iii. *Theoretical or conceptual* research studies may adopt structured designs and methods, but they do not generate empirical evidence. Theoretical or conceptual research may be useful in designing policy or programmes and in interrogating underlying assumptions and empirical studies, but should not be referred to as 'evidence'. Nor should existing policy papers or institutional literature.

Box 3: Research designs and methods: which is best?

This Note has already explained how some research designs and methods seek to address typical forms of bias in research. Some academic disciplines explicitly consider designs and methods hierarchically according to their relative ability to eliminate biases.[9]

However, DFID's work covers a huge span of economic, political and social policy and programmes. Given the range of purposes for which research is required in international development, this Note is clear that there **is no universally applicable hierarchy of research designs and methods**.

Instead, the Note argues that different designs are more or less appropriate for different research questions.[10] Indeed, some of the most powerful and evidence is produced when a range of methods are either 'mixed' together or used independently of one another (i.e. 'nested' within a broader methodological approach) to allow triangulation of findings. Typically, stronger bodies of evidence are likely to be characterised by the availability of a wide spectrum of evidence which uses, and triangulates findings from several research designs and methods.

[9] See for example, 'Levels of Evidence' diagram, Evidence-Based Practice in the Health Sciences, Evidence Based Nursing Tutorial.

[10] Stern, E. et al. (2012), p. 2. For a helpful overview of the different sorts of questions which are best answered by different research designs and methods, see Petticrew, M. & H. Roberts (2003), "Evidence, hierarchies and typologies: horses for courses." *Journal of Epidemiology and Community Health, 57*: 527-529, and Sandbrook, C. (2013), "Biodiversity, Ecosystem Services and Poverty Alleviation: What constitutes good evidence? A discussion paper." The Poverty and Conservation Learning Group Discussion Paper No. 10.

The following table on types of research designs is drawn from information for the University of Southern California Libraries: http://libguides.usc.edu/content.php?pid=83009&sid=818072

12 Major Types of Research Designs

Action Research Design

Definition and Purpose

The essentials of action research design follow a characteristic cycle whereby initially an exploratory stance is adopted, where an understanding of a problem is developed and plans are made for some form of interventionary strategy. Then the intervention is carried out (the "action" in Action Research) during which time, pertinent observations are collected in various forms. The new interventional strategies are carried out, and this cyclic process repeats, continuing until a sufficient understanding of (or a valid implementation solution for) the problem is achieved. The protocol is iterative or cyclical in nature and is intended to foster deeper understanding of a given situation, starting with conceptualizing and particularizing the problem and moving through several interventions and evaluations.

Important characteristics:	**Bear in mind:**
1. This is a collaborative and adaptive research design that lends itself to use in work or community situations. 2. Design focuses on pragmatic and solution-driven research outcomes rather than testing theories. 3. When practitioners use action research, it has the potential to increase the amount they learn consciously from their experience; the action research cycle can be regarded as a learning cycle. 4. Action research studies often have direct and obvious relevance to improving practice and advocating for change. 5. There are no hidden controls or pre-emption of direction by the researcher.	1. It is harder to do than conducting conventional research because the researcher takes on responsibilities of advocating for change as well as for researching the topic. 2. Action research is much harder to write up because it is less likely that you can use a standard format to report your findings effectively [i.e., data is often in the form of stories or observation]. 3. Personal over-involvement of the researcher may bias research results. 4. The cyclic nature of action research to achieve its twin outcomes of action (e.g. change) and research (e.g. understanding) is time-consuming and complex to conduct. 5. Advocating for change requires buy-in from participants.

Case Study Design

Definition and Purpose

A case study is an in-depth study of a particular research problem rather than a sweeping statistical survey or comprehensive comparative inquiry. It is often used to narrow down a very broad field of research into one or a few easily researchable examples. The case study research design is also useful for testing whether a specific theory and model actually applies to phenomena in the real world. It is a useful design when not much is known about an issue or phenomenon.

Important characteristics:	**Bear in mind:**
1. Approach excels at bringing us to an understanding of a complex issue through detailed contextual analysis of a limited number of events or conditions and their relationships.	1. A single or small number of cases offers little basis for establishing reliability or to generalize the findings to a wider population of people, places, or things.

2. A researcher using a case study design can apply a variety of methodologies and rely on a variety of sources to investigate a research problem. 3. Design can extend experience or add strength to what is already known through previous research. 4. Social scientists, in particular, make wide use of this research design to examine contemporary real-life situations and provide the basis for the application of concepts and theories and the extension of methodologies. 5. The design can provide detailed descriptions of specific and rare cases.	2. Intense exposure to the study of a case may bias a researcher's interpretation of the findings. 3. Design does not facilitate assessment of cause and effect relationships. 4. Vital information may be missing, making the case hard to interpret. 5. The case may not be representative or typical of the larger problem being investigated. 6. If the criteria for selecting a case is because it represents a very unusual or unique phenomenon or problem for study, then your interpretation of the findings can only apply to that particular case.

Causal Design

Definition and Purpose

Causality studies may be thought of as understanding a phenomenon in terms of conditional statements in the form, "If X, then Y." This type of research is used to measure what impact a specific change will have on existing norms and assumptions. Most social scientists seek causal explanations that reflect tests of hypotheses. Causal effect (nomothetic perspective) occurs when variation in one phenomenon, an independent variable, leads to or results, on average, in variation in another phenomenon, the dependent variable.

Conditions necessary for determining causality:

- Empirical association -- a valid conclusion is based on finding an association between the independent variable and the dependent variable.
- Appropriate time order -- to conclude that causation was involved, one must see that cases were exposed to variation in the independent variable before variation in the dependent variable.
- Non-spuriousness -- a relationship between two variables that is not due to variation in a third variable.

Important characteristics:	**Bear in mind:**
1. Causality research designs assist researchers in understanding why the world works the way it does through the process of proving a causal link between variables and by the process of eliminating other possibilities. 2. Replication is possible. 3. There is greater confidence the study has internal validity due to the systematic subject selection and equity of groups being compared.	1. Not all relationships are casual! The possibility always exists that, by sheer coincidence, two unrelated events appear to be related [e.g., Punxatawney Phil could accurately predict the duration of Winter for five consecutive years but, the fact remains, he's just a big, furry rodent]. 2. Conclusions about causal relationships are difficult to determine due to a variety of extraneous and confounding variables that exist in a social environment. This means causality can only be inferred, never proven. 3. If two variables are correlated, the cause must come before the effect. However, even though two variables might be causally related, it can sometimes be difficult to determine which variable comes first and, therefore, to establish

	which variable is the actual cause and which is the actual effect.

Cohort Design

Definition and Purpose

Often used in the medical sciences, but also found in the applied social sciences, a cohort study generally refers to a study conducted over a period of time involving members of a population which the subject or representative member comes from, and who are united by some commonality or similarity. Using a quantitative framework, a cohort study makes note of statistical occurrence within a specialized subgroup, united by same or similar characteristics that are relevant to the research problem being investigated, rather than studying statistical occurrence within the general population. Using a qualitative framework, cohort studies generally gather data using methods of observation. Cohorts can be either "open" or "closed."

- Open Cohort Studies [dynamic populations, such as the population of Los Angeles] involve a population that is defined just by the state of being a part of the study in question (and being monitored for the outcome). Date of entry and exit from the study is individually defined, therefore, the size of the study population is not constant. In open cohort studies, researchers can only calculate rate based data, such as, incidence rates and variants thereof.
- Closed Cohort Studies [static populations, such as patients entered into a clinical trial] involve participants who enter into the study at one defining point in time and where it is presumed that no new participants can enter the cohort. Given this, the number of study participants remains constant (or can only decrease).

Important characteristics:	**Bear in mind:**
1. The use of cohorts is often mandatory because a randomized control study may be unethical. For example, you cannot deliberately expose people to asbestos, you can only study its effects on those who have already been exposed. Research that measures risk factors often relies upon cohort designs. 2. Because cohort studies measure potential causes before the outcome has occurred, they can demonstrate that these "causes" preceded the outcome, thereby avoiding the debate as to which is the cause and which is the effect. 3. Cohort analysis is highly flexible and can provide insight into effects over time and related to a variety of different types of changes [e.g., social, cultural, political, economic, etc.]. 4. Either original data or secondary data can be used in this design.	1. In cases where a comparative analysis of two cohorts is made [e.g., studying the effects of one group exposed to asbestos and one that has not], a researcher cannot control for all other factors that might differ between the two groups. These factors are known as confounding variables. 2. Cohort studies can end up taking a long time to complete if the researcher must wait for the conditions of interest to develop within the group. This also increases the chance that key variables change during the course of the study, potentially impacting the validity of the findings. 3. Due to the lack of randominization in the cohort design, its external validity is lower than that of study designs where the researcher randomly assigns participants.

Cross-Sectional Design

Definition and Purpose

Cross-sectional research designs have three distinctive features: no time dimension; a reliance on existing differences rather than change following intervention; and, groups are selected based on existing

differences rather than random allocation. The cross-sectional design can only measure differences between or from among a variety of people, subjects, or phenomena rather than a process of change. As such, researchers using this design can only employ a relatively passive approach to making causal inferences based on findings.

Important characteristics:	**Bear in mind:**
1. Cross-sectional studies provide a clear 'snapshot' of the outcome and the characteristics associated with it, at a specific point in time. 2. Unlike an experimental design, where there is an active intervention by the researcher to produce and measure change or to create differences, cross-sectional designs focus on studying and drawing inferences from existing differences between people, subjects, or phenomena. 3. Entails collecting data *at* and *concerning* one point in time. While longitudinal studies involve taking multiple measures over an extended period of time, cross-sectional research is focused on finding relationships between variables at one moment in time. 4. Groups identified for study are purposely selected based upon existing differences in the sample rather than seeking random sampling. 5. Cross-section studies are capable of using data from a large number of subjects and, unlike observational studies, is not geographically bound. 6. Can estimate prevalence of an outcome of interest because the sample is usually taken from the whole population. 7. Because cross-sectional designs generally use survey techniques to gather data, they are relatively inexpensive and take up little time to conduct.	1. Finding people, subjects, or phenomena to study that are very similar except in one specific variable can be difficult. 2. Results are static and time bound and, therefore, give no indication of a sequence of events or reveal historical or temporal contexts. 3. Studies cannot be utilized to establish cause and effect relationships. 4. This design only provides a snapshot of analysis so there is always the possibility that a study could have differing results if another time-frame had been chosen. 5. There is no follow up to the findings.

Descriptive Design

Definition and Purpose

Descriptive research designs help provide answers to the questions of who, what, when, where, and how associated with a particular research problem; a descriptive study cannot conclusively ascertain answers to why. Descriptive research is used to obtain information concerning the current status of the phenomena and to describe "what exists" with respect to variables or conditions in a situation.

Important characteristics:	**Bear in mind:**
1. The subject is being observed in a completely natural and unchanged natural environment. True experiments, whilst giving analyzable data, often adversely influence the normal behavior	1. The results from a descriptive research cannot be used to discover a definitive answer or to disprove a hypothesis. 2. Because descriptive designs often utilize

of the subject [a.k.a., the Heisenberg effect whereby measurements of certain systems cannot be made without affecting the systems]. 2. Descriptive research is often used as a pre-cursor to more quantitative research designs with the general overview giving some valuable pointers as to what variables are worth testing quantitatively. 3. If the limitations are understood, they can be a useful tool in developing a more focused study. 4. Descriptive studies can yield rich data that lead to important recommendations in practice. 5. Approach collects a large amount of data for detailed analysis.	observational methods [as opposed to quantitative methods], the results cannot be replicated. 3. The descriptive function of research is heavily dependent on instrumentation for measurement and observation.
Experimental Design **Definition and Purpose** A blueprint of the procedure that enables the researcher to maintain control over all factors that may affect the result of an experiment. In doing this, the researcher attempts to determine or predict what may occur. Experimental research is often used where there is time priority in a causal relationship (cause precedes effect), there is consistency in a causal relationship (a cause will always lead to the same effect), and the magnitude of the correlation is great. The classic experimental design specifies an experimental group and a control group. The independent variable is administered to the experimental group and not to the control group, and both groups are measured on the same dependent variable. Subsequent experimental designs have used more groups and more measurements over longer periods. True experiments must have control, randomization, and manipulation.	
Important characteristics: 1. Experimental research allows the researcher to control the situation. In so doing, it allows researchers to answer the question, "What causes something to occur?" 2. Permits the researcher to identify cause and effect relationships between variables and to distinguish placebo effects from treatment effects. 3. Experimental research designs support the ability to limit alternative explanations and to infer direct causal relationships in the study. 4. Approach provides the highest level of evidence for single studies.	**Bear in mind:** 1. The design is artificial, and results may not generalize well to the real world. 2. The artificial settings of experiments may alter the behaviors or responses of participants. 3. Experimental designs can be costly if special equipment or facilities are needed. 4. Some research problems cannot be studied using an experiment because of ethical or technical reasons. 5. Difficult to apply ethnographic and other qualitative methods to experimentally designed studies.
Exploratory Design **Definition and Purpose** An exploratory design is conducted about a research problem when there are few or no earlier studies to refer to or rely upon to predict an outcome. The focus is on gaining insights and familiarity for later investigation or undertaken when research problems are in a preliminary stage of investigation. Exploratory designs are often used to establish an understanding of how best to proceed in studying an issue or what methodology would effectively apply to gathering information about the issue.	

The goals of exploratory research are intended to produce the following possible insights:

- Familiarity with basic details, settings, and concerns.
- Well grounded picture of the situation being developed.
- Generation of new ideas and assumptions.
- Development of tentative theories or hypotheses.
- Determination about whether a study is feasible in the future.
- Issues get refined for more systematic investigation and formulation of new research questions.
- Direction for future research and techniques get developed.

Important characteristics:	**Bear in mind:**
1. Design is a useful approach for gaining background information on a particular topic. 2. Exploratory research is flexible and can address research questions of all types (what, why, how). 3. Provides an opportunity to define new terms and clarify existing concepts. 4. Exploratory research is often used to generate formal hypotheses and develop more precise research problems. 5. In the policy arena or applied to practice, exploratory studies help establish research priorities and where resources should be allocated.	1. Exploratory research generally utilizes small sample sizes and, thus, findings are typically not generalizable to the population at large. 2. The exploratory nature of the research inhibits an ability to make definitive conclusions about the findings. They provide insight but not definitive conclusions. 3. The research process underpinning exploratory studies is flexible but often unstructured, leading to only tentative results that have limited value to decision-makers. 4. Design lacks rigorous standards applied to methods of data gathering and analysis because one of the areas for exploration could be to determine what method or methodologies could best fit the research problem.

Historical Design

Definition and Purpose

The purpose of a historical research design is to collect, verify, and synthesize evidence from the past to establish facts that defend or refute a hypothesis. It uses secondary sources and a variety of primary documentary evidence, such as, diaries, official records, reports, archives, and non-textual information [maps, pictures, audio and visual recordings]. The limitation is that the sources must be both authentic and valid.

Important characteristics:	**Bear in mind:**
1. The historical research design is unobtrusive; the act of research does not affect the results of the study. 2. The historical approach is well suited for trend analysis. 3. Historical records can add important contextual background required to more fully understand and interpret a research problem. 4. There is often no possibility of researcher-subject interaction that could affect the findings. 5. Historical sources can be used over and over to study different research problems or to	1. The ability to fulfill the aims of your research are directly related to the amount and quality of documentation available to understand the research problem. 2. Since historical research relies on data from the past, there is no way to manipulate it to control for contemporary contexts. 3. Interpreting historical sources can be very time consuming. 4. The sources of historical materials must be archived consistently to ensure access. This may especially challenging for digital or online-only sources. 5. Original authors bring their own perspectives

replicate a previous study.	and biases to the interpretation of past events and these biases are more difficult to ascertain in historical resources. 6. Due to the lack of control over external variables, historical research is very weak with regard to the demands of internal validity. 7. It is rare that the entirety of historical documentation needed to fully address a research problem is available for interpretation, therefore, gaps need to be acknowledged.
Longitudinal Design **Definition and Purpose** A longitudinal study follows the same sample over time and makes repeated observations. For example, with longitudinal surveys, the same group of people is interviewed at regular intervals, enabling researchers to track changes over time and to relate them to variables that might explain why the changes occur. Longitudinal research designs describe patterns of change and help establish the direction and magnitude of causal relationships. Measurements are taken on each variable over two or more distinct time periods. This allows the researcher to measure change in variables over time. It is a type of observational study sometimes referred to as a panel study.	
Important characteristics: 1. Longitudinal data facilitate the analysis of the duration of a particular phenomenon. 2. Enables survey researchers to get close to the kinds of causal explanations usually attainable only with experiments. 3. The design permits the measurement of differences or change in a variable from one period to another [i.e., the description of patterns of change over time]. 4. Longitudinal studies facilitate the prediction of future outcomes based upon earlier factors.	**Bear in mind:** 1. The data collection method may change over time. 2. Maintaining the integrity of the original sample can be difficult over an extended period of time. 3. It can be difficult to show more than one variable at a time. 4. This design often needs qualitative research data to explain fluctuations in the results. 5. A longitudinal research design assumes present trends will continue unchanged. 6. It can take a long period of time to gather results. 7. There is a need to have a large sample size and accurate sampling to reach representativeness.
Meta-Analysis Design **Definition and Purpose** Meta-analysis is an analytical methodology designed to systematically evaluate and summarize the results from a number of individual studies, thereby, increasing the overall sample size and the ability of the researcher to study effects of interest. The purpose is to not simply summarize existing knowledge, but to develop a new understanding of a research problem using synoptic reasoning. The main objectives of meta-analysis include analyzing differences in the results among studies and increasing the precision by which effects are estimated. A well-designed meta-analysis depends upon strict adherence to the criteria used for selecting studies and the availability of information in each study to properly analyze their findings. Lack of information can severely limit the type of analyses and conclusions that can be reached.	

In addition, the more dissimilarity there is in the results among individual studies [heterogeneity], the more difficult it is to justify interpretations that govern a valid synopsis of results.

A meta-analysis needs to fulfill the following requirements to ensure the validity of your findings:

- Clearly defined description of objectives, including precise definitions of the variables and outcomes that are being evaluated;
- A well-reasoned and well-documented justification for identification and selection of the studies;
- Assessment and explicit acknowledgment of any researcher bias in the identification and selection of those studies;
- Description and evaluation of the degree of heterogeneity among the sample size of studies reviewed; and,
- Justification of the techniques used to evaluate the studies.

Important characteristics:	**Bear in mind:**
1. Can be an effective strategy for determining gaps in the literature. 2. Provides a means of reviewing research published about a particular topic over an extended period of time and from a variety of sources. 3. Is useful in clarifying what policy or programmatic actions can be justified on the basis of analyzing research results from multiple studies. 4. Provides a method for overcoming small sample sizes in individual studies that previously may have had little relationship to each other. 5. Can be used to generate new hypotheses or highlight research problems for future studies.	1. Small violations in defining the criteria used for content analysis can lead to difficult to interpret and/or meaningless findings. 2. A large sample size can yield reliable, but not necessarily valid, results. 3. A lack of uniformity regarding, for example, the type of literature reviewed, how methods are applied, and how findings are measured within the sample of studies you are analyzing, can make the process of synthesis difficult to perform. 4. Depending on the sample size, the process of reviewing and synthesizing multiple studies can be very time consuming.

Observational Design

Definition and Purpose

This type of research design draws a conclusion by comparing subjects against a control group, in cases where the researcher has no control over the experiment. There are two general types of observational designs. In direct observations, people know that you are watching them. Unobtrusive measures involve any method for studying behavior where individuals do not know they are being observed. An observational study allows a useful insight into a phenomenon and avoids the ethical and practical difficulties of setting up a large and cumbersome research project.

Important characteristics:	**Bear in mind:**
1. Observational studies are usually flexible and do not necessarily need to be structured around a hypothesis about what you expect to observe [data is emergent rather than pre-existing]. 2. The researcher is able to collect in-depth information about a particular behavior. 3. Can reveal interrelationships among multifaceted dimensions of group interactions.	1. Reliability of data is low because seeing behaviors occur over and over again may be a time consuming task and are difficult to replicate. 2. In observational research, findings may only reflect a unique sample population and, thus, cannot be generalized to other groups. 3. There can be problems with bias as the researcher may only "see what they want to

4. You can generalize your results to real life situations. 5. Observational research is useful for discovering what variables may be important before applying other methods like experiments. 6. Observation research designs account for the complexity of group behaviors.	see." 4. There is no possibility to determine "cause and effect" relationships since nothing is manipulated. 5. Sources or subjects may not all be equally credible. 6. Any group that is knowingly studied is altered to some degree by the presence of the researcher, therefore, potentially skewing any data collected.