

Writing an introduction to research

It is the first passage in a journal or dissertation

It sets the stage for the entire project

Establishes the issue leading to a research problem

Creates readers' interest in the topic

Places the study within a larger context of scholarly literature

Reaches out to a larger context

Written in a concise section or few pages

Example of a General introduction

- Struggle to increase students' racial and ethnic diversity of students and faculty member, and affirmative action has become the policy of choice to achieve that heterogeneity **(topic and hook)**
- This policy is at the center of national debate/ History of this policy/ turning down of this policy **(background)**
- Arguments in favour on the effectiveness of diversity bettering learning gains **(identifying the research problem, i.e., the need for diversity)**
- Stating previous studies in a form of groups: Only a handful of studies dealt with the degree of effect of diversity in the classroom or campus on students' achievements **(Deficiencies or the limitations in existing studies)**
- The scarcity of information on the educational benefits of the structural diversity on a campus or in its classrooms is regrettable because it is the sort of evidence the courts appear to be requiring if they are to support race-sensitive admissions policies. **[Importance of the study for campus audiences is mentioned.]**
- Exploring the influence of structural diversity in the classroom on students' development of academic and intellectual skills (Aim of the study).

Research problem

It is the problem or issue that leads a need of research.

It can originate from many sources: Extensive debate in the literature, experience of the researcher (personal life or experience), a gap that needs to be addressed, a branch that needs to be studied, and policy debates.

A qualitative research problem:

Explore a concept or phenomenon- Exploratory- to probe a topic when the variables and theory base are unknown.

Morse (1991) said this:

Characteristics of a qualitative research problem are: (a) the concept is “immature” due to a conspicuous lack of theory and previous research; (b) a notion that the available theory may be inaccurate, inappropriate, incorrect, or biased; (c) a need exists to explore and describe the phenomena and to develop theory; or (d) the nature of the phenomenon may not be suited to quantitative measures. (p. 120

Example:

Anxiety that interferes with learning (a problem), and the best way to explore this problem is to go to schools and visit directly with teachers and students.

Quantitative research problem

- The problem is best addressed by understanding what factors or variables influence an outcome.
- Researchers sometimes advance a theory to test, and they will incorporate substantial reviews of the literature to identify research questions that need to be answered.

Example: Need to understand the high divorce rate among married couples (a problem) and examine whether financial issues contribute to divorce.

Mixed methods

A mixed methods study can employ either the qualitative or the quantitative approach (or some combination) to writing an introduction.

1. The emphasis might tip in the direction of either quantitative or qualitative research, and the introduction will mirror that emphasis.
2. The emphasis will be equal between qualitative and quantitative research (In this case, the problem may be one in which a need exists to both understand quantitatively the relationship among variables in a situation and explore qualitatively the topic in further depth).

Model of an introduction

In what follows, we state a widely used template for general introductions. It consists of five parts, and a separate paragraph can be devoted to each part, for an introduction of about two pages in length:

1. State the research problem.
2. Review studies that have addressed the problem.
3. Indicate deficiencies in the studies.
4. Advance the significance of the study for particular audiences.
5. State the purpose statement

1. Statement of the Research Problem

A) Start with the introduction of the problem and narrative hook:

E.g. The Algerian educational authorities introduced CBA 20 years ago to equip learners with modern competencies, yet their educational system is still dominated by memorization and knowledge acquisition.

- **Trump says the Borders got him elected in 2016.** Voters rank the economy and cost of living as their top issue. (New York Times, 19-10-2020).

- It is like lowering a barrel to a well (we should start from more general to acclimate the reader slowly).

Tips for writing a research problem

- Write an opening sentence that will stimulate reader interest as well as convey an issue
- As a general rule, refrain from using quotations—
- Stay away from idiomatic expressions or trite phrases (e.g., “The lecture method remains a ‘sacred cow’ among most college and university instructors.”).
- Consider numeric information for impact (e.g., “Every year, an estimated 5 million Americans experience the death of an immediate family member.”)
- Clearly identify the research problem (i.e., dilemma, issue) leading to the study.
- Indicate why the problem is important by citing numerous references that justify the need to study the problem.
- Make sure that the problem is framed in a manner consistent with the approach to research in the study (e.g., exploratory in qualitative, examining relationships or predictors in quantitative, and either approach in mixed methods inquiry).
- Consider and write about whether there is a single problem involved in the proposed study or multiple problems that lead to a need for the study. Often, multiple research problems are addressed in research studies

In short, the statement of the research problem involves:

Context and background, specific problem, relevance, scope, objective and purpose.

Previous studies

It is not a complete literature review

A summary of a large group of major studies, not individual ones

Justify the importance of the study

Create distinction between past studies and current one (setting the research problem within the ongoing dialogue in the literature.”)

It is best to review empirical studies

If no pertinent on the topic exist like in exploratory research, look for neighboring studies

Find recent literature to summarize, such as that published in the past 10 years. Cite older studies if they are valuable because they have been widely referenced by others.

Deficiencies in past literature

- Deficiencies in past literature may exist because topics have not been explored with a particular group; the literature may need to be replicated or repeated to see if the same findings hold because of mixed results given new samples of people or new sites for study; or the voices of underrepresented groups have not been heard in published literature.

- Inadequate longitudinal data
- Cite as many deficiencies as possible to make the study stronger
- They can be found in “suggestions for future research.
- Inadequate methodology (methodological flaws)
- Write about areas overlooked by past studies, including topics, special statistical treatments, significant
- You need to tell how to address the problem. For example, a scholar can say how the study will focus on a given variable which has been overlooked.
E.g., many studies have focused on the impact of mind mapping on writing performance (reference, reference, reference) , **little is known about** its effect on the quality of content.
You can use also the expression **what remains to be known is**

Significance of a Study for Audiences

- It conveys the importance of the problem for different groups that may profit from **reading** and **using** the study.
- It creates a clear rationale for the importance of the study. The more audiences that can be mentioned,
- The greater the importance of the study and the more it will be seen by readers to have wide application.
- Three or four reasons that the study adds to the scholarly research and literature in the field
Three or four reasons about how the study helps improve practice
- Three or four reasons as to why the study will improve policy or decision making

The Purpose Statement

It may also be called a study aim or the research objective of a project.

- It establishes the intent of the entire research study
- the purpose statement indicates why you want to conduct the study and what you intend to accomplish.

A Qualitative Purpose Statement

- Good qualitative purpose statements contain information about the central phenomenon explored in the study, the participants in the study, and the research site.
- Use words such as purpose, intent, study aim, or objective to signal attention to this statement as the central controlling idea.
- Better use past in articles and dissertations and use future in proposals
- Focus on a single phenomenon (concept or idea)
- Avoid relating variables
- The aim is to understand how individuals cognitively represent AIDS (Anderson & Spencer, 2002).
- Use action verbs and phrases, such as, understand, develop, explore, examine the meaning of, generate, or discover, keep the inquiry open and convey an emerging design.
- Use neutral words and phrases—nondirectional language—such as, **exploring** the “self-expression experiences of individuals” rather than the “**successful** self-expression of individuals
- Other words and phrases that may **be problematic** include **useful**, **positive**, and **informing**—all words that suggest a directional outcome that may or may not occur.

- Provide a general working definition of the central phenomenon or idea, especially if the phenomenon is a term that is not typically understood by a broad audience.
- Include words denoting the strategy of inquiry to be used in data collection, analysis, and the process of research, such as whether the study will use an ethnographic, grounded theory, case study, phenomenological, narrative approach, or some other strategy
- Mention the participants in the study, such as one or more individuals, a group of people, or an entire organization.
- Identify the site for the research, such as homes, classrooms, organizations, programs, or events.

Script of qualitative purpose statement

The purpose (or study aim) of this _____ (strategy of inquiry, such as ethnography, case study, or other type) study is (was? will be?) to _____ (understand? explore? develop? generate? discover?) the _____ (central phenomenon being studied) for _____ (the participants, such as the individual, groups, organization) at _____ (research site). At this stage in the research, the _____ (central phenomenon being studied) will be generally defined as _____ (provide a general definition).

A Quantitative Purpose Statement

- Include words to signal the major intent of the study, such as purpose, intent, or objective.
- Identify the theory, model, or conceptual framework.
- Identify the independent and dependent variables, as well as any mediating or moderating variables used in the study.
- Use words that connect the independent and dependent variables to indicate that they are related, such as “the relationship between” two or more variables or a “comparison of” two or more groups.
- Position or order the variables from left to right in the purpose statement—with the independent variable followed by the dependent variable. Place intervening variables between the independent and dependent variables.
- Mention the specific type of strategy of inquiry (such as survey or experimental research) used in the study.
- Make reference to the participants (or the unit of analysis) in the study, and mention the research site
- Generally define each key variable, preferably using set and accepted established definitions found in the literature. General definitions are included at this point to help the reader best understand the purpose statement. They do not replace specific, operational definitions found later when a writer has a “Definition of Terms” section in a proposal.

Based on these points, a quantitative purpose statement script can include these ideas:

The purpose of this _____ (experiment? survey?) study is (was? will be?) to test the theory of _____ that _____ (describes outcomes) or _____ (compares? relates?) the _____ (independent variable) to _____ (dependent variable), controlling for _____ (mediating or moderating variables) for _____ (participants) at _____ (the research site). The independent variable(s) _____ will be defined as _____ (provide a definition). The dependent variable(s) will be defined as _____ (provide a

definition), and the intervening variable(s), _____, (identify the intervening variables) will be defined as _____ (provide a definition).

A Mixed Methods Purpose Statement

Mixed methods purpose statements contains the overall intent of the study, information about both the quantitative and qualitative strands of the study, and a rationale of incorporating both strands to study the research problem.

- Begin with words that signal intent, such as “The purpose of,” “The study aim is,” or “The intent of.”
- Indicate the overall purpose of the study from a content perspective, such as “The intent is to learn about organizational effectiveness” or “The intent is to examine families with stepchildren.” In this way, the reader has an anchor to use to understand the overall study before the researcher divides the project into quantitative and qualitative strands.
- Indicate the type of mixed methods design, such as a convergent design, an explanatory sequential design, an exploratory sequential design or a complex design
- Discuss the reasons or justification for combining both quantitative and qualitative data. This reason could be one of the following reasons:
 - . To develop a complete understanding of a research problem by comparing quantitative and qualitative results from the two databases (a convergent design).
To understand the data at a more detailed level by using qualitative follow-up data collection to help explain quantitative results, such as a survey.
 - . To develop a new measurement instrument that actually fits the culture of a sample by first exploring qualitatively (e.g., through interviews) and then testing the instrument with a large sample (an exploratory sequential design).
To incorporate these reasons (and designs) into a larger design, methodology, or theory such as an experimental design, a case study or evaluation methodology, or a theory of participatory–social justice research

Script of mixed methods statement of purpose

This mixed methods study will address _____ [overall content aim]. A convergent mixed methods design will be used, and it is a type of design in which qualitative and quantitative data are collected in parallel, analyzed separately, and then merged. In this study, _____ [quantitative data] will be used to test the theory of _____ [the theory] that predicts that _____ [independent variables] will _____ [positively, negatively] influence the _____ [dependent variables] for _____ [participants] at _____ [the site]. The _____ [type of qualitative data] will explore _____ [the central phenomenon] for _____ [participants] at _____ [the site]. The reason for collecting both quantitative and qualitative data is to _____ [the mixing reason].

Research Questions

Research questions or hypotheses narrow the purpose statement to predictions about what will be learned or questions to be answered in the study. This section begins by advancing several principles in designing qualitative research questions and helpful scripts for writing these questions.

Qualitative Research Questions

In a qualitative study, research questions assume two forms: (a) a central question and (b) associated sub questions. They neither involve specific objectives, nor do they involve hypotheses. Here are several principles in designing qualitative research questions and helpful scripts for writing these questions.

- **Ask one or two central research questions.** The central question is a broad question that asks for an exploration of the central phenomenon or concept in a study. The inquirer poses this question, consistent with the emerging methodology of qualitative research, as a general issue so as to not limit the views of participants. In contrast to quantitative research, qualitative research requires asking the broadest research questions on the topic. Actually, qualitative research involves investigating the general and broad factors that concerns a given topic from the participants' lens.
- **Ask no more than five to seven subquestions in addition to your central questions.** Several subquestions follow each general central question; they narrow the focus of the study but leave open the questioning.
- **Relate the central question to the specific qualitative strategy of inquiry.** For example, ethnography strategy requires asking detailed more specific questions to collect details whereas critical ethnography could involve broader questions.
- **Begin the research questions with the words what or how to convey an open and emerging design.** The word *why* often suggests probable cause-and-effect thinking that is associated with quantitative research and that limits the explanations rather than opening them up for participant views.
- **Focus on a single phenomenon or concept.** As a study develops over time, factors will emerge that may influence this single phenomenon, but begin a study with a single focus to explore in great detail. We often ask, "What is the one, single concept that you want to explore?"
- **Use exploratory verbs that convey the language of emerging design. These verbs tell the reader that the study will do the following:** Report (or reflect) the stories (e.g., narrative research) Describe the essence of the experience (e.g., phenomenology) Discover or generate (e.g., grounded theory) Seek to understand (e.g., ethnography) Explore a process (e.g., case study).
- **Use these more exploratory verbs as nondirectional rather than directional words of quantitative research,** such as affect, influence, impact, determine, cause, and relate.
- **Expect the research questions to evolve and change during the study in a manner consistent with the assumptions of an emerging design.** Often in qualitative studies, the questions are under continual review and reformulation (as in a grounded theory study).
- **Use open-ended questions without reference to the literature or theory unless otherwise indicated by a qualitative strategy of inquiry**
- **Specify the participants and the research site for the study if the information has not yet been given.**
- Here is a typical script for a qualitative central question:
- _____ (How or what?) is the _____ ("story for" for narrative research; "meaning of" the phenomenon for phenomenology; "theory that explains the process of" for grounded theory; "culture-sharing pattern" for ethnography; "issue" in the "case" for case study) of _____ (central phenomenon) for _____ (participants) at _____ (research site).
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Hypotheses

Quantitative hypotheses: Quantitative hypotheses are predictions the researcher makes about the expected outcomes of relationships among variables. They are numeric estimates of population

values based on data collected from samples. For example, a researcher might hypothesize that the average height of a population is 170 cm. The researcher uses statistical methods to evaluate whether a hypothesis is true or false. For example, the researcher might hypothesize that there is no difference in mean heights between men and women.

A script for a quantitative null hypothesis might be as follows:

There is no significant difference between _____ (the control and experimental groups on the independent variable) on _____ (dependent variable).

There is no significant difference between the types of exercises and weight loss in individuals' participating in fitness program.

Guidelines for writing good quantitative hypotheses include the following.

- The use of variables in hypotheses is typically limited to three basic approaches. The researcher may compare groups on an independent variable to see its impact on a dependent variable (this would be an experiment or group comparisons).

E.g., there is a significant difference in academic performance between individuals who sleep less than 6 hours, 6-8 hours, and more than 8 hours.

The investigator may relate one or more independent variables to one or more dependent variables (this would be a survey that correlates variables).

E.g., there is a significant relationship between social media usage, study skills and academic performance.

Third, the researcher may describe responses to the independent, mediating, or dependent variables (this would be a descriptive study).

E.g., College students report studying predominantly in quiet environment

- If hypotheses are used, there are two forms: (a) null and (b) alternative. A null hypothesis (H_0) represents the traditional approach: It makes a prediction that in the general population, no relationship or no significant difference exists between groups on a variable. The wording is, "There is no difference (or relationship)" between the groups.

- The second form, popular in journal articles, is the alternative or directional hypothesis. The investigator makes a prediction about the expected outcome, basing this prediction on prior literature and studies on the topic that suggest a potential outcome. For example, the researcher may predict that "scores will be higher for Group A than for Group B" on the dependent variable or that "Group A will change more than Group B" on the outcome. These examples illustrate a directional hypothesis because an expected prediction (e.g., higher, more change) is made.

- Another type of alternative statement is the nondirectional hypothesis—a prediction is made, but the exact form of differences (e.g., higher, lower, more, less) is not specified because the researcher does not know what can be predicted from past literature.

- Unless the study intentionally employs demographic variables as predictors, use nondemographic variables (i.e., attitudes or behaviors) as mediating variables. These are variables that "stand between" the independent and dependent variables. Demographic variables are often used as moderating variables that affect the influence of the independent variable on the dependent variable. Because quantitative studies attempt to verify theories, demographic variables (e.g., age, income level, educational level) typically enter these studies as moderating variables instead of major independent variables.

Mixed methods hypothesis

. A strong mixed methods study should contain at least three research questions: the qualitative question, the quantitative question or hypothesis, and a mixed methods question. This mixed methods question represents what the researcher needs to know about the integration or combination of the quantitative and qualitative data. This configuration is necessary because mixed methods does not rely exclusively on either qualitative or quantitative research but on both forms of inquiry.

- Hypotheses can be advanced at the beginning or emerge during a later phase of the research. For example, if the study begins with a quantitative phase, the investigator might introduce hypotheses. Later in the study, when the qualitative phase is addressed, the qualitative research questions appear.