

# Research Question



Finding a good research question can mean going through hundreds of studies in the relevant literature to find gaps in knowledge.

# Introduction

Research Question	Hypothesis	Research Objectives
A research question is a clear and focused question that guides your research. It identifies the specific aspects of a topic that you want to explore and sets the direction for your study.	A hypothesis is a testable statement that predicts the relationships between variables. It is based on existing theories and knowledge and serves as a foundation for testing and validation through scientific methods.	Research objectives are the specific goals that your research aims to achieve. They provide direction and focus, help structure your study, and ensure that it addresses relevant issues effectively.

# Characteristics of Research Questions

Limited to a single problem



Should be able to find the answer using data collection



Resolvable within the time limit and other restrictions



01

02

03

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Provides comprehensive and detailed results



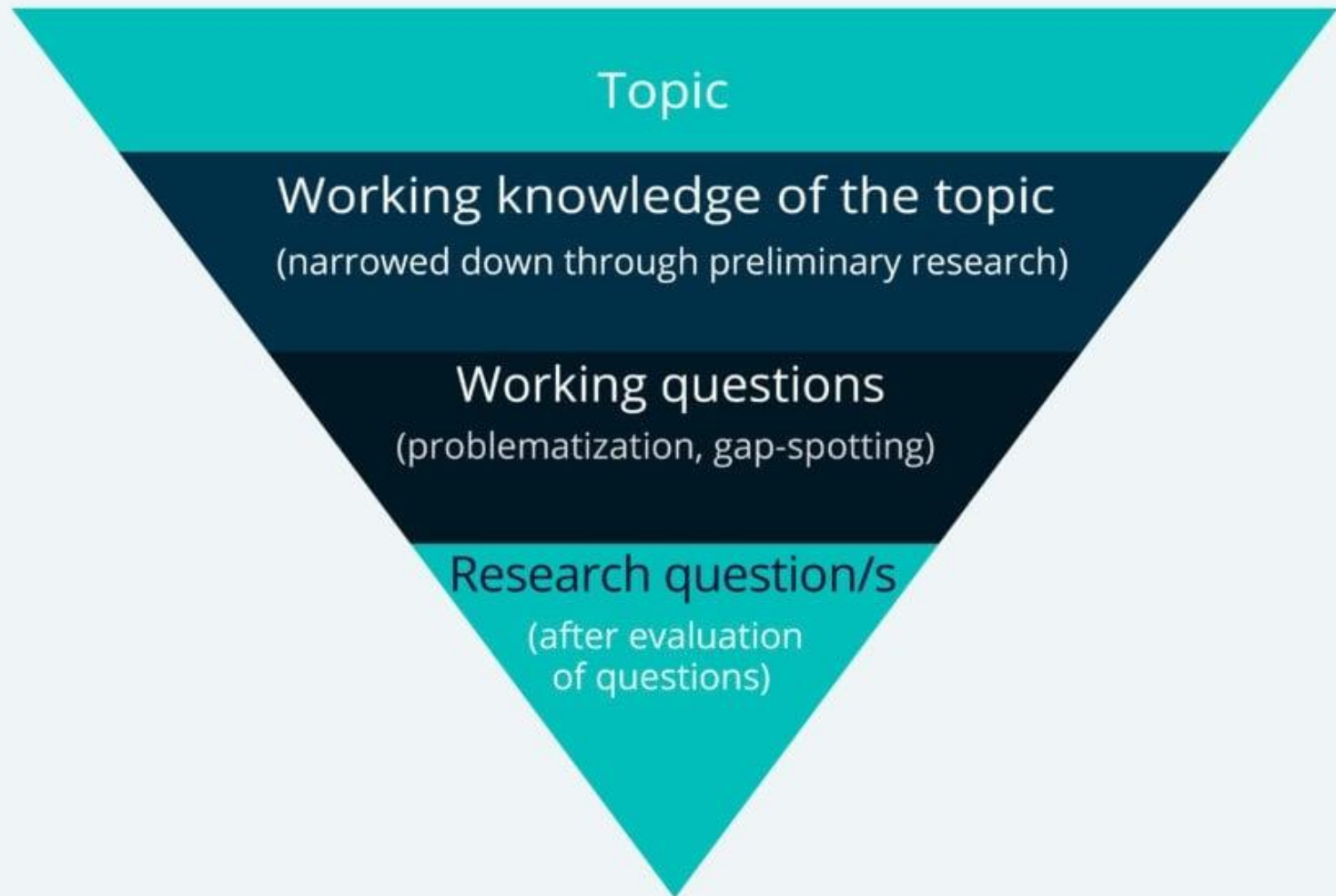
Should be relevant and realistic.



Reflects your chosen field of study



# The Path to a Research Question: From Broad Topic to a Specific Question





# Steps to Write Research Questions



**1**

Select an  
Interesting Topic



**2**

Do Preliminary  
Research on the  
Topic



**3**

Consider Your  
Audience



**4**

Ask Questions



**5**

Start Your  
Research

## What is a Research Question?

- ❑ A research question is a question that a study or research project, through its thesis statement, aims to answer.
- ❑ This question often addresses an issue or a problem, which, through analysis and interpretation of data, is answered in the study's conclusion.
- ❑ In most studies, the research question is written so that it outlines various aspects of the study, including the population and variables to be studied and the problem the study addresses.
- ❑ As their name implies, a research question is often grounded on research. As a result, these questions are dynamic; this means researchers can change or refine the research question as they review related literature and develop a framework for the study.
- ❑ While many research projects will focus on a single research question, larger studies often use more than one research question.

A **research question** pinpoints exactly what you want to find out in your work. A good research question is essential to guide your **research paper, dissertation, or thesis**.

All research questions should be:

- **Focused** on a single problem or issue
- **Researchable** using **primary and/or secondary sources**
- **Feasible** to answer within the timeframe and practical constraints
- **Specific** enough to answer thoroughly
- **Complex** enough to develop the answer over the space of a paper or thesis
- **Relevant** to your field of study and/or society more broadly

# Characteristics of a strong research question





A research question is a clear, concise, and open-ended question that centers your research for a paper, project, or literature review.



It forms the foundation of a research-based assignment and helps guide the entire research process.



As a researcher, you are not only summarizing a topic; you are attempting to find a gap in the literature where you can answer a researchable, narrow question.



A well-made research question is essential to define the scope and direction of your paper, guiding you in collecting relevant information for drawing conclusions later.

# How to write a research question

You can follow these steps to develop a strong research question:

- ✓ Choose your **topic**
- ✓ Do some **preliminary reading** about the current state of the field
- ✓ Narrow your focus to a **specific niche**
- ✓ Identify the **research problem** that you will address

# Types of Research Questions



# Developing a Research Question

Identify your topic, Read background information, and Refine your search.



**Who?**

**To What  
Extent?**

**Why?**

**When?**

**Where?**

Specific group?

Gender? sex?

Age? ethnicity?

Socioeconomic  
status?

Key figures?

What are the issues?

Are there subtopics?

Are there any  
unanswered  
questions?

Why is this issue  
interesting?

Why should other be  
interested?

Is this a current issue?

Is it related to a specific  
period of time?

Was there an event  
related to this issue?

Can you narrow  
to a specific  
geographic  
location?

**The Wakefield Library**

## Research objectives

## Research question formulations

Describing and exploring

- What are the characteristics of X?
- How has X changed over time?
- What are the causes of X?
- How has X dealt with Y?

Explaining and testing

- What is the relationship between X and Y?
- What is the role of X in Y?
- What is the impact of X on Y?
- How does X influence Y?

Evaluating and acting

- What are the advantages and disadvantages of X?
- How **effective** is X?
- How can X be improved?



Research Question Type	Question
Descriptive	What are the properties of A?
Comparative	What are the similarities and distinctions between A and B?
Correlational	What can you do to correlate variables A and B?
Exploratory	What factors affect the rate of C's growth? Are A and B also influencing C?
Explanatory	What are the causes for C? What does A do to B? What's causing D?
Evaluation	What is the impact of C? What role does B have? What are the benefits and drawbacks of A?
Action-Based	What can you do to improve X?

## Using your research problem to develop your research question

### Example research problem

Teachers at the school do not have the skills to recognize or properly guide gifted children in the classroom.

### Example research question(s)

What practical techniques can teachers use to better identify and guide gifted children?

Young people increasingly engage in the “gig economy,” rather than traditional full-time employment. However, it is unclear why they choose to do so.

What are the main factors influencing young people’s decisions to engage in the gig economy?

# What makes a strong research question?

Research questions anchor your whole project, so it's important to spend some time refining them. The criteria below can help you evaluate the strength of your research question.

## Focused and researchable

Criteria	Explanation
Focused on a single topic	Your central research question should work together with your research problem to keep your work focused. If you have multiple questions, they should all clearly tie back to your central aim.
Answerable using <b>credible sources</b>	Your question must be answerable using <b>quantitative</b> and/or <b>qualitative data</b> , or by reading scholarly sources on the <b>topic</b> to develop your argument. If such data is impossible to access, you likely need to rethink your question.
Not based on value judgements	<p>Avoid subjective words like <i>good</i>, <i>bad</i>, <i>better</i> and <i>worse</i>. These do not give clear criteria for answering the question.</p> <div><div>✗</div> Is X or Y a better policy?</div> <div><div>✓</div> How effective are X and Y policies at reducing rates of Z?</div>

## Feasible and specific

Criteria	Explanation
<b>Answerable within practical constraints</b>	<p>Make sure you have enough time and resources to do all research required to answer your question. If it seems you will not be able to gain access to the data you need, consider narrowing down your question to be more specific.</p>
<b>Uses specific, well-defined concepts</b>	<p>All the terms you use in the research question should have clear meanings. Avoid vague language, jargon, and too-broad ideas.</p> <ul style="list-style-type: none"><li>✗ What effect does social media have on people's minds?</li><li>✓ What effect does daily use of Twitter have on the attention span of 16-year-olds at your local high school?</li></ul>

**Does not demand a conclusive solution, policy, or course of action**

Research is about informing, not instructing. Even if your project is focused on a practical problem, it should aim to improve understanding rather than demand a ready-made solution.

If ready-made solutions are necessary, consider conducting [action research](#) instead. Action research is a research method that aims to simultaneously investigate an issue as it is solved. In other words, as its name suggests, action research conducts research and takes action at the same time.

- ✗ What should the government do about low voter turnout?
- ✓ What are the most effective communication strategies for increasing voter turnout among those aged 18-30?



# Complex and arguable

Criteria	Explanation
Cannot be answered with <i>yes</i> or <i>no</i>	<p>Closed-ended, <i>yes/no</i> questions are too simple to work as good research questions—they don't provide enough <b>scope</b> for robust investigation and discussion.</p> <ul style="list-style-type: none"><li>✗ Has there been an increase in those experiencing homelessness in the US in the past ten years?</li><li>✓ How have economic and political factors affected patterns of experiencing homelessness in the US over the past ten years?</li></ul>
Cannot be answered with easily-found facts	<p>If you can answer the question through a single Google search, book, or article, it is probably not complex enough. A good research question requires original data, synthesis of multiple sources, and original interpretation and argumentation prior to providing an answer.</p>

## Relevant and original

Criteria	Explanation
<b>Addresses a relevant problem</b>	Your research question should be developed based on initial reading around your <b>topic</b> . It should focus on addressing a problem or gap in the existing knowledge in your field or discipline.
<b>Contributes to a timely social or academic debate</b>	The question should aim to contribute to an existing and current debate in your field or in society at large. It should produce knowledge that future researchers or practitioners can later build on.
<b>Has not already been answered</b>	You don't have to ask something that nobody has ever thought of before, but your question should have some aspect of originality. For example, you can focus on a specific location, or explore a new angle.

## Importance of the research question

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graph LR; A[Importance of the research question] --- B[The primary importance of developing a research question is that it narrows down a broad topic of interest into a specific area of study (Creswell, 2014).]; A --- C[Research questions, along with hypotheses, also serve as a guiding framework for research.]; A --- D[These questions also specifically reveal the boundaries of the study, setting its limits, and ensuring cohesion.]; A --- E[Moreover, the research question has a domino effect on the rest of the study. These questions influence factors, such as the research methodology, sample size, data collection, and data analysis (Lipowski, 2008).];
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Research questions, along with hypotheses, also serve as a guiding framework for research.

These questions also specifically reveal the boundaries of the study, setting its limits, and ensuring cohesion.

Moreover, the research question has a domino effect on the rest of the study. These questions influence factors, such as the research methodology, sample size, data collection, and data analysis (Lipowski, 2008).

## **Sustainable Materials Development**

- How can biodegradable composites replace traditional plastics in packaging applications?
- What are the environmental trade-offs of using recycled carbon fibers in automotive components?

## **Plastic Pollution Mitigation**

- What are the most effective strategies to reduce microplastic contamination in marine ecosystems?
- How can circular economy principles be applied to plastic waste management systems?
- What role can biopolymers play in mitigating single-use plastic consumption?

## **Energy-Efficient Building Materials**

- How can phase-change materials enhance thermal regulation in residential buildings?
- What are the economic and environmental benefits of using 3D-printed concrete for low-cost housing?

## **Water Scarcity Solutions**

- How effective are 3D-printed desalination devices in addressing water scarcity in arid regions?
- What role can AI play in optimizing urban water distribution networks?



**Example Unclear Research Question:**  
**How does the environment  
affect people?**

**Example Clear Research Question:**  
**How does prolonged exposure  
to air pollution in urban areas  
impact the respiratory health  
of adults aged 50 and above  
over a five-year period?**

Example Wordy Research Question:  
What are the various factors (parental involvement, teacher-student relationships, school budget) that contribute to student performance in academic settings, and how do they interact with each other in shaping the overall academic success or failure of students in different educational institutions across diverse socioeconomic backgrounds and cultural contexts?

- ❑ The first is that the question is overly complex, attempting to address multiple factors in student performance, including socioeconomic backgrounds, cultural contexts, and educational institutions.
- ❑ An overly complex research question will be a challenge, resulting in a paper that is too broad to execute.
- ❑ The second reason is that this question contains multiple sub-questions; a concise research question should ideally contain *one* central issue to maintain clarity.
- ❑ To fix this, the author may want to focus on one aspect of their research question instead of including all the details.

Example Concise Research Question:

**How does parental involvement  
impact the academic  
performance of high school  
students in urban public  
schools?**

Finally, a research question should be open-ended and worthy of extended research/discussion.

Example Non-Open-Ended Research  
Question:

**Is Khan Academy beneficial  
in improving student test  
scores in mathematics?**



Example Open-Ended Research Question:

**How does student use of Khan Academy in mathematics improve students' understanding of mathematical concepts over time?**

## Research question

## Explanation

- ✗ What effect does social media have on your mind?
- ✓ What effect does daily use of Twitter have on the attention span of 12- to 16-year-olds?

The first question is not **specific** enough. The second question is more **researchable**, using **qualitative and quantitative data collection**.

- ✗ Why is there a housing crisis in the Netherlands?
- ✓ What impact have university internationalization policies had on the availability and affordability of housing in the Netherlands?

Starting with “why” often means that your question is not **focused** enough: there are too many possible answers. By targeting just one **specific** aspect of the problem, the second question offers a clear path for research.

- ✗ Does the US or the UK have a better healthcare system?
- ✓ How do the US and the UK compare in health outcomes among low-income people with chronic illnesses?

The first question is too broad and subjective: there’s no clear criteria for what counts as “better.” The second question is much more **researchable**. It uses clearly defined terms and narrows its focus to a specific population.

- ✗ What should political parties do about low voter turnout in the region?
- ✓ What are the most effective communication strategies for increasing voter turnout among those under 30 living within city limits?

It is generally not **feasible** for academic research to answer broad normative questions. The second question is more specific, aiming to gain an understanding of possible solutions in order to make informed recommendations.

- ✗ Has there been an increase in homelessness in San Francisco in the past ten years?
- ✓ How have economic, political, and social factors affected patterns of homelessness in San Francisco over the past ten years?

The first question is too simple: it can be answered with a simple yes or no. The second question is **more complex**, requiring in-depth investigation and the development of an original argument.

- ✗ What factors led to women gaining the right to vote in the UK in 1918?
- ✓ How did Irish women perceive and relate to the British women's suffrage movement?

The first question is too broad and not very **original**. The second question identifies an underexplored aspect of the topic that requires investigation of various **primary and secondary sources** to answer.

- ✗ Where do the majority of immigrants to Germany come from?
- ✓ What are the similarities and differences in the experiences of recent Syrian immigrants in Berlin?

The first question is too simple, asking for a straightforward fact that can be easily found online. The second is a more **complex** question that requires **data collection** and detailed discussion to answer.

- ✗ How is race represented in Shakespeare's *Othello*?
- ✓ How have modern adaptations of Shakespeare's *Othello* dealt with the theme of racism through casting, staging, and allusion to contemporary events?

The first question is not **original or relevant** — it would be very difficult to contribute anything new. The second question takes a specific angle to make an original argument, and has more relevance to current social concerns and debates.

- ✗ How can drunk driving be prevented?
- ✓ What effect do different legal approaches have on the number of people who drive after drinking in European countries?

The first question asks for a ready-made solution, and is not **focused or researchable**. The second question is a clearer comparative question, but note that it may not be practically **feasible**. For a smaller research project or thesis, it could be narrowed down further to focus on the effectiveness of drunk driving laws in just one or two countries.

# WRITING RESEARCH QUESTIONS

Research questions help you stay laser focused on your passion.  
Questions should be specific, measurable, and realistic:

**SPECIFIC** • *What exactly do you want to accomplish?*

**MEASURABLE** • *How will you measure success?*

**REALISTIC** • *Is it possible to achieve?*

Here are some examples of research questions and how they rank. How would you revise these questions to ensure they are specific, measurable and realistic?

<b>TOO NARROW</b> <i>What is the number of students currently enrolled in art in our school district?</i>	<b>LESS NARROW</b> <i>How does the education level of arts specialists impact enrollment in art courses in our school district?</i>
<b>TOO BROAD</b> <i>What are the effects of art on students' long term academic success?</i>	<b>MORE FOCUSED</b> <i>How does enrollment in art courses correlate with academic performance in middle school students?</i>
<b>TOO OBJECTIVE</b> <i>How much time do young students spend making art per day?</i>	<b>MORE SUBJECTIVE</b> <i>What is the relationship between art making and academic success in math among elementary students?</i>
<b>TOO SIMPLISTIC</b> <i>How are schools addressing creative development in students?</i>	<b>MORE COMPLEX</b> <i>What are the effects of interdisciplinary measures by classroom teachers incorporating art on a weekly basis among 4th grade students?</i>

# Types of Research Questions

Research questions can be classified into different categories, depending on the type of research to be done.

Knowing what type of research one wants to do—

- ❑ quantitative,

- ❑ qualitative,

- ❑ or mixed-methods studies

# Categories of quantitative research questions

<b>Descriptive research questions</b>	Attempt to describe the behavior of a population in regard to one or more variables or describe characteristics of those variables that will be measured. These are usually "What?" questions.
<b>Comparative research questions</b>	Seek to discover differences between groups within the context of an outcome variable. These questions can be causal as well. Researchers may compare groups in which certain variables are present with groups in which they are not.
<b>Relationship research questions</b>	Designed to elucidate and describe trends and interactions among variables. These questions include the dependent and independent variables and use words such as "association" or "trends."



# Categories of qualitative research questions

<b>Contextual research questions</b>	Attempt to identify and describe existing conditions.
<b>Descriptive research questions</b>	Attempt to describe a phenomenon.
<b>Evaluation research questions</b>	Assess the effectiveness of existing methods, protocols, theories, or procedures.
<b>Explanatory research questions</b>	Examine a phenomenon or analyze the reasons or relationships between subjects or phenomena.
<b>Exploratory research questions</b>	Focus on the unknown aspects of a particular topic.

# Quantitative and Qualitative Research Question Examples

Research Question Type	Question Formulation/Example
Descriptive research question	<i>What are the characteristics of ATP synthase?</i>
Comparative research question	<i>How does human growth hormone mimic the action of testosterone?</i>
Correlational research question	<i>What is the relationship between baldness and age?</i>
Exploratory research question	<i>Is it possible that VEGF has an effect in plant photosynthesis?</i>
Explanatory research question	<i>What is the cause of increased violence among young adults?</i>
Evaluation research question	<i>What is the efficacy of using toothpaste to heal mosquito bites?</i>

# Good and Bad Research Question Examples

## Research Question Example 1

<b>Vague Research Question</b>	<i>How are children affected by exposure to social media?</i>
<b>Specific Research Question</b>	<i>What is the effect of Instagram Likes on the self-esteem of young children under the age of 12?</i>

## Research Question Example 2

<b>Overly Simplistic Research Question</b>	<i>Has there been an increase in bullying in the US over the past 10 years?</i>
<b>Focused Research Question</b>	<i>What has been the effect of after-school and community programs on student disciplinary actions among elementary students?</i>