

Identifying the Problem

by Sophia



WHAT'S COVERED

In this lesson, you will learn about the purpose of research questions and the process of narrowing a topic to develop an appropriate question for an assignment. You'll also apply this knowledge to build your problem solving skill. Specifically, this lesson will cover:

1. The Purpose of Research Questions

Research is often important to creating a persuasive argument. You will remember that one effective rhetorical appeal is logos, or a logical argument. Writers can research to find facts and data to support their persuasive arguments. Both professional researchers and successful student researchers develop research questions. That's because research questions are more than handy tools; they are essential to the research process. In Touchstone 1.2, you will create your own research question for a topic of your choosing.



BIG IDEA

By defining exactly what the researcher is trying to find out, these questions influence most of the rest of the steps taken to conduct the research. That's true even if the research is not for academic purposes but for other areas of our lives.

For instance, if you're seeking information about a health problem in order to learn whether you have anything to worry about, research questions will make it possible for you to more effectively decide whether to seek medical help—and how quickly.



Problem Solving: Skill in Action

By using research and data, you will improve your ability to quickly and thoroughly solve problems. For instance, you may work at a store and notice that theft has drastically increased. In order to solve the problem, you'll first need to find the cause. Possible causes may be a decrease in security, increased unemployment in the area, or employee theft. By using data, you take out the guesswork and can pinpoint the cause, and thus, find a solution.

Or, if you're researching a potential employer, having developed and used research questions will mean you're able to more confidently decide whether to apply for an internship or job there. The confidence you'll have when making such decisions will come from knowing that the information they're based on was

2. Narrowing a Topic

For many students, having to start with a research question is the biggest difference between how they did research in high school and how they are required to carry out their college research projects. It's a process of working from the outside in: you start with the world of all possible topics (or your assigned topic) and narrow down until you've focused your interest enough to be able to tell precisely what you want to find out, instead of only what you want to "write about."

2a. Process of Narrowing a Topic

Visualize narrowing a topic as starting with all possible topics and choosing narrower and narrower subsets until you have a specific enough topic to form a research question.



The table below further describes the process of narrowing a topic.

Type of Topic	Description
All Possible Topics	You'll need to narrow your topic in order to do research effectively. Without specific areas of focus, it will be hard to even know where to begin.
Assigned Topics	Ideas about a narrower topic can come from anywhere. Often, a narrower topic boils down to deciding what's interesting to you. One way to get ideas is to read background information in a source like Wikipedia.
Topic Narrowed by Initial Exploration	It's wise to do some more reading about that narrower topic to learn more about it and also to learn specialized terms used by professionals and scholars who study it.
Topic Narrowed to Research Question(s)	A research question defines exactly what you are trying to find out. It will influence most of the steps you take to conduct the research.

2b. Why Narrow a Topic

Once you have a need for research—say, an assignment—you may need to prowl around a bit online to explore the topic and figure out what you actually want to find out and write about. For instance, maybe your assignment is to develop a poster about something related to animals for your ecology course. The instructor expects you to narrow that topic to something you are interested in and that is related to your class.



BIG IDEA

Ideas about a narrower topic can come from anywhere. In this case, a narrower topic boils down to deciding what's interesting to you about animals that is related to what you're learning in your ecology class and small enough to manage in the time you have.

One way to get ideas would be to brainstorm a list of all of the words and images that come to mind when you think about this topic. Then, you can look at the list and make note of what ideas seem interesting to you. Brainstorming is a great way to generate a lot of ideas, which you can then use to narrow your focus.

Or, instead, you could just begin by looking around or taking a walk. You may be inspired to write about animal welfare after seeing a neighbor walking the dog, or to write about bird sanctuaries after seeing robins in a yard.

2c. Narrowing a Topic Effectively

Anna, an undergraduate, has been assigned a persuasive research paper on a change she would like to see in her community. Her professor expects students to:

1. narrow the topic to a specific problem.
2. come up with a research question for their papers.

The professor explained that the research question should be something they are interested in answering and that it must be more complicated than what they could answer with a quick Google search. He also said that research questions often start with either the word “how” or “why.”

You'll want to follow these steps to determine how effectively Anna narrows her topic:



STEP BY STEP

1. Read what Anna is thinking below as she tries to do the assignment.
2. After the reading, answer the questions at the end of the monologue in your own mind.
3. Check your answers with ours at the end of Anna's interior monologue.
4. Keep this demonstration in mind as you begin Touchstone 1.2, and you can mimic her actions in thinking about your own topic.



See if you can recognize the process of narrowing a topic in action in the following example.

Okay, I have to write something, a research project, about a problem in my community. Goodness, I don't know, I feel like I complain about things a lot, but I'm not sure how I would use research to write about any of them. I think I'll go for a walk.

Well, here are some people walking their dogs. Is there something there I could write about? Maybe I could write about people cleaning up after their pets? No, I'm not sure what research I would use for that. I don't think that topic would support an assignment. Better keep looking.

Oh, here is the bus stop. I see several people getting on the bus. Maybe I could write about something related to public transportation? That has some promise, but I am not sure how I want to improve our public transportation system. I'm going to make a mental note of that topic and maybe come back to it.

Now we are at the park. I remember coming here when I was younger. I really enjoyed playing with my brother. Wow, it looks different than the last time I came over here. There is litter on the ground, and an overflowing trash can. That doesn't make it seem like an attractive place to play, much less safe for young children. That is a shame. You know, that really bothers me.

Hmm, since I feel strongly about this, I wonder if I can turn this into my project? Come to think of it, I definitely saw a lot of trash on my walk this morning. What could we do to help the trash problem in our community? Could the city hire more people to clean? Buy more trash cans? Well, I am not sure how I would use that as a topic, and in addition, it would probably be better if we didn't have as much trash to begin with. How about something with recycling?

Recycling sounds promising, and I bet I can find a lot of research to support that topic. The library is right around the corner, so I will stop by there and see what I can find in a quick Google search.

Okay, let me start with a broad topic of recycling and see what is available. Goodness, that is a lot of information. Okay, I see some locations for recycling centers, but none of them are nearby. I think I may be on the right track. Here is some information from the EPA about the benefits of recycling, that may be interesting. This is a long article on this webpage. I wonder if there is any information about starting a recycling center. Let me use the Ctrl+F feature my professor mentioned. It will search on this page for a key term. Oh okay, that worked, but it looks like this page doesn't have what I am looking for. I am going to go back to Google.

I think I will try a more specific search. Let me try "starting a recycling program." Wow, there is a lot of

information about this as well. I see a lot of websites with steps on how to start a program, and I also see some information about costs. I don't know that I realized that it costs money to recycle. I wonder how much it costs and what we would need?

You know, I bet it is also expensive to maintain trash clean-up. I know that many homeowners pay a waste fee. I wonder how much it costs the city each year in landfills, and trash clean-up? Maybe I can compare the amount that trash clean-up costs the city each year, with how much recycling costs. It would probably be interesting to know how much trash the city generates a year as well. Wow, I'm really getting a lot of ideas for information, so I need to jot these down so I don't forget them

Okay, I really like this topic. Let me email my professor and get her opinion. My topic will be bringing a recycling program to our city. My research questions seem to center around economics, so my research question will be: "How can a recycling program save the city money, both now and in the future?" Okay, the email is sent. While I am here at the library, I think the next step is to see if the librarians can point me towards some local data.

Was Anna's choice to start with a walk a good choice? Why or why not?

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Anything that gets the ideas moving can work. Maybe you would prefer to take a drive, or brainstorm on a piece of paper, just start browsing the internet. Ideas can come from anywhere

Have you ever used that Ctrl+F technique?

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If you haven't used the Ctrl+F technique, we hope you will. It can save you a lot of time and effort reading online material. Just press the "Ctrl" key (or the "⌘" symbol on an Apple computer) and the "F" key at the same time, then type the word you want to find on the webpage or PDF you're reading.

What were some of Anna's concerns in choosing a topic? Why did she reject some of her earlier ideas?

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As Anna went on her walk, she had several ideas for topics. However, it was important for her to choose something in which she felt invested. That is a good strategy because strong feelings make for strong writing. As you choose and narrow your topic in Touchstone 1.2, choose something you care about so you enjoy your research and the process. Anna also wanted to make sure her topic choice could support an argument and a research paper. Some of her ideas may be valid, but wouldn't be a great topic for this assignment. It is important to think about the assignment requirements for any project to make sure we meet them successfully. Too broad, and our paper won't be very focused; too narrow, and we may struggle to find information.

Anna uses Google for her initial search, but what are some other resources she can use for her research? Why may those be better?

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Google, of course, has millions of websites, but there are some resources that will have different

results. Anna's university most likely has access to databases, which will allow her to read periodicals and scholarly journals. Universities and libraries pay subscription fees for such databases, giving us access to information that isn't on Google. There may also be some city and local records she can use for her project, and the librarian can help her get access to those.

At the end of this session, Anna has a rough idea of her topic and research question. Do you think she made a good choice? +

It sounds as if this project about a community recycling center will fit the assignment, and Anna definitely seems interested. She may find during her research that she needs to revise her topic a bit before she writes her thesis, but that is okay. She has a strong beginning. Prewriting, outlining, and drafting are all important parts of the planning process, but none of them are set-in-stone contracts. It is okay to revise and adjust based on your research, or advice from your professor.

3. Background Reading

It's wise to do some more reading about that narrower topic once you have it. For one reason, you probably don't know much about it yet. For another, such reading will help you learn the terms used by professionals and scholars who have studied your narrower topic. Those terms are certain to be helpful when you're looking for sources later, so jot them down or otherwise remember them.

For instance, if you were going to do research about an increased interest in farming in society as part of a course. You may find some other terms that would be helpful for your research: agriculture, permaculture, and homesteading. If you didn't learn that, you would miss the kinds of sources you'll eventually need for your assignment.

Most sources other than journal articles are good sources for this initial reading, including the New York Times or other mainline American news outlets, encyclopedias for the discipline your topic is in (ecology for the animal welfare topic, for instance), dictionaries for the discipline, and manuals, handbooks, blogs, and webpages that could be relevant.



BIG IDEA

This initial reading could cause you to narrow your topic further, which is fine because narrower topics lead to greater specificity for what you have to find out. After this upfront work, you're ready to start developing the research question(s) you will try to answer for your assignment.



HINT

While you are in the background reading phase of your research, you will come across a lot of sources and won't know yet if they will prove useful in the long run. A handy type of software to help you keep track of all your findings is called citation management software. It will also be extremely valuable when it comes to using the resources you end up needing.



HINT

It's worth remembering that reading, scanning, looking at, and listening to information resources is very

useful during any step of the process to develop research questions. Doing so can jog our memories, give us details that will help us focus, and help us connect disparate information—all of which will help us come up with research questions that we find interesting.



Get ready to sharpen your persuasive writing skills. In the following *Sophia Stories* video, journalist Lenore Skenazy explains how researching your argument is crucial for convincing your audience.

SUMMARY

In this lesson, you learned about the **purpose of research questions** and the process of developing an appropriate question for an assignment. The key to developing a research question is **narrowing a topic** until you find a subject of interest. You learned about the **process of narrowing a topic** and **why narrowing a topic** is important. You then observed an example of a student **narrowing a topic effectively** by brainstorming ideas and researching those that interested her until she could pose a “how” or “why” question. Finally, you learned about the importance of **background reading** to further familiarize yourself with your topic. Often, background reading will lead you to modify your research question, which is all part of the writing process. Finally, you learned how problem solving is an important aspect of identifying a problem.

Best of luck in your learning!

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