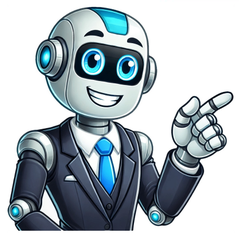
I'm not a robot



 MethodSpace will explore phases of the research process throughout 2021. In the first quarter will explore design steps, starting with a January focus on research questions. Find the unfolding series here.Dr. Gary Burkholder is a co-author of Research Design and Methods: An Applied Guide for the Scholar-Practitioner. Dr. Burkholder was a Mentor in Residence on SAGE MethodSpace in December 2019, and is a regular contributor. See his practical advice for research faculty and students here. Contrary to what you may think or have heard, creating a suitable research question to guide a thesis, dissertation, or doctoral project study does not necessarily follow a linear process. However, this does not mean that getting to the research question is not rigorous! There are clear steps to get to the research question (see Crawford, Burkholder, & Cox, 2020).Generate the initial idea.Complete a thorough investigation of the literature in the relevant domains.For those pursuing the research doctorate, identify gaps in theory and empirical knowledge that result in a research problem and purpose statement.For those pursuing the applied doctorate, draw upon expertise to identify gaps in practice that allow the development of the practice-based problem and purpose statement.Identify the principal research questions from the problem and purpose statements.Generating the Initial Idea. This is arguably the most creative part of the process and generates the initial enthusiasm in engaging in formal research. Most of the time, whether theoretical or practical, students get an idea because of something that sparks their interest. Someone having a personal experience with obesity and subsequent weight loss and have an interest in learning more about why particular weight loss programs seem to work. In professional settings, the practitioner may notice that a process or activity isn't working correctly. For example, children in school may not be adapting to online learning as quickly as they should. In a company setting, a middle manager may be surprised that employees are not adapting to working remotely as quickly as they had thought. In a healthcare setting, a nurse notices that patients are taking too much time completing forms in the clinical practice office and that there may be other more efficient ways to complete this activity that would result in less waiting time. Whatever the source, consider these observations as initial “hunches” that might lead to an interesting research study that can allow you to contribute to theory or practice in a way that suits your own expertise.Reviewing the Literature. The purpose of original research is to address a lack of knowledge in theory or practice. Therefore, once you have your initial idea, the next step is to take a look at the literature that addresses the topic of your idea. There is a vast selection of journals in all disciplines, both theoretical and practice-oriented, that provide excellent resources for your investigation. The goal for now is to read enough literature to establish that this is an important topic for further exploration and to see if anyone has written about it. Has research already been completed that provides ways to address your initial idea? If yes, then the study probably won't be worthy of doctoral level research (although you may actually find the answers to issues in the workplace that you are looking for!). Whether you are trying to solve a problem in practice or theory, reviewing the existing literature is important to see what others have already done. Remember, the goal of doctoral level scholarship is to add to the existing body of knowledge regarding theory or practice. At this stage, if you find sufficient literature to help you address your initial question, then it is time to put that idea aside and pursue others that may yield a more innovative contribution.Developing the Problem in Research or Practice. The problem statement is probably the most important part of the doctoral capstone. In your problem statement, you succinctly identify what is currently know about the area of interest and what is not known. It is what is NOT known that identifies your unique contribution to scholarship in theory or practice. If you cannot identify what is not known, or what is commonly referred to as the gap in theory or the gap in practice, then you probably don't have a study worthy of doctoral level scholarship. Once you identify the gap in theory or practice, you can then develop the statement of purpose that defines for the reader exactly what your study will add to the existing body of scholarship and/or practice.The Research Question. Once you have identified the practice or theory-based problem, you are then ready to propose the formal research question that guides your study. This is a succinct question that provides focus, describes the scope of the study, and provides insight into the direction of inquiry. There are important ideas to remember when crafting the research question.All studies are guided by one or more research questions, regardless of whether they are quantitative, qualitative, or mixed methods.Fewer research questions are better than many. In most cases, studies are addressing one primary research question (and likely never more than 2 or 3). The research question provides focus of the study. The more research questions, the more unfocused the study may become.For those doing qualitative studies or studies with qualitative components, do not confuse the research question with interview questions. There will likely be several interview questions, but interview questions are in service to addressing the key research question guiding the overall study.In general, questions should not be framed as “yes or no”. For example, “What is the extent of understanding teachers have regarding training first graders to use tablets in acquiring knowledge?” is better than “Do teachers know how to train first graders to use tablets in acquiring knowledge?” The former is worded in a way that supports depth and breadth of observation and analysis.Research questions must be aligned with other aspects of the thesis, dissertation, or project study proposal, such as the problem statement, research design, and analysis strategy.To summarize: Idea >Reviewing literature > Identifying the gap in theory or practice >Problem and Purpose Statements >Research questionThus, there is a clear process for getting to the research question. However, there is fluidity in terms of how that process unfolds. Ideas, when explored further, may turn out to be just that and have to be scrapped for a different idea that can be pursued. Ideas can come from intuitive hunches or from extensive exploration and knowledge of a particular theory or practice. They may emerge from conversations with mentors or other experts in the field. This dance of ideas creates the initial sparks of excitement in social science research that leads to a rigorous and scientific process of generating the research question ultimately guiding the study. Cecilia is living through a tough situation in her research life. Figuring out where to begin, how to start her research study, and how to pose the right question for her research quest, is driving her insane. Well, questions, if not asked correctly, have a tendency to spiral us! Image Source: Questions lead everyone to answers. Research is a quest to find answers. Not the vague questions that Cecilia means to answer, but definitely more focused questions that define your research. Therefore, asking appropriate question becomes an important matter of discussion. A well begun research process requires a strong research question. It directs the research investigation and provides a clear goal to focus on. Understanding the characteristics of comprising a good research question will generate new ideas and help you discover new methods in research. In this article, we are aiming to help researchers understand what is a research question and how to write one with examples. What Is a Research Question? A good research question defines your study and helps you seek an answer to your research. Moreover, a clear research question guides the research paper or thesis to define exactly what you want to find out, giving your work its objective. Learning to write a research question is the beginning to any thesis, dissertation, or research paper. Furthermore, the question addresses issues or problems which is answered through analysis and interpretation of data. Why Is a Research Question Important? A strong research question guides the design of a study. Moreover, it helps determine the type of research and identify specific objectives. Research questions state the specific issue you are addressing and focus on outcomes of the research for individuals to learn. Therefore, it helps break up the study into easy steps to complete the objectives and answer the initial question. Types of Research Questions Research questions can be categorized into different types, depending on the type of research you want to undergo. Furthermore, knowing the type of research will help a researcher determine the best type of research question to use. 1. Qualitative Research Question Qualitative questions concern broad areas or more specific areas of research. However, unlike quantitative questions, qualitative research questions are adaptable, non-directional and more flexible. Qualitative research question focus on discovering, explaining, elucidating, and exploring. i. Exploratory Questions This form of question looks to understand something without influencing the results. The objective of exploratory questions is to learn more about a topic without attributing bias or preconceived notions to it. Research Question Example: Asking how a chemical is used or perceptions around a certain topic. ii. Predictive Questions Predictive research questions are defined as survey questions that automatically predict the best possible response options based on text of the question. Moreover, these questions seek to understand the intent or future outcome surrounding a topic. Research Question Example: Asking why a consumer behaves in a certain way or chooses a certain option over other. iii. Interpretive Questions This type of research question allows the study of people in the natural setting. The questions help understand how a group makes sense of shared experiences with regards to various phenomena. These studies gather feedback on a group's behavior without affecting the outcome. Research Question Example: How do you feel about AI assisting publishing process in your research? 2. Quantitative Research Question Quantitative questions prove or disprove a researcher's hypothesis through descriptions, comparisons, and relationships. These questions are beneficial when choosing a research topic or when posing follow-up questions that garner more information. i. Descriptive Questions It is the most basic type of quantitative research question and it seeks to explain when, where, why, or how something occurred. Moreover, they use data and statistics to describe an event or phenomenon. Research Question Example: How many generations of genes influence a future generation? ii. Comparative Questions Sometimes it's beneficial to compare one occurrence with another. Therefore, comparative questions are helpful when studying groups with dependent variables. Example: Do men and women have comparable metabolisms? iii. Relationship-Based Questions This type of research question answers influence of one variable on another. Therefore, experimental studies use this type of research questions are majorly. Example: How is drought condition affect a region's probability for wildfires. How to Write a Good Research Question? 1. Select a Topic The first step towards writing a good research question is to choose a broad topic of research. You could choose a research topic that interests you, because the complete research will progress further from the research question. Therefore, make sure to choose a topic that you are passionate about, to make your research study more enjoyable. 2. Conduct Preliminary Research After finalizing the topic, read and know about what research studies are conducted in the field so far. Furthermore, this will help you find articles that talk about the topics that are yet to be explored. You could explore the topics that the earlier research has not studied. 3. Consider Your Audience The most important aspect of writing a good research question is to find out if there is audience interested to know the answer to the question you are proposing. Moreover, determining your audience will assist you in refining your research question, and focus on aspects that relate to defined groups. 4. Generate Potential Questions The best way to generate potential questions is to ask open ended questions. Questioning broader topics will allow you to narrow down to specific questions. Identifying the gaps in literature could also give you topics to write the research question. Moreover, you could also challenge the existing assumptions or use personal experiences to redefine issues in research. 5. Review Your Questions Once you have listed few of your questions, evaluate them to find out if they are effective research questions. Moreover while reviewing, go through the finer details of the question and its probable outcome, and find out if the question meets the research question criteria. 6. Construct Your Research Question There are two frameworks to construct your research question. The first one being PICOT framework, which stands for: Population or problem Intervention or indicator being studied Comparison group Outcome of interest Time frame of the study. The second framework is PEO, which stands for: Population being studied Exposure to preexisting conditions Outcome of interest. How might the discovery of a genetic basis for alcoholism impact triage processes in medical facilities? How do ecological systems respond to chronic anthropological disturbance? What are demographic consequences of ecological interactions? What roles do fungi play in wildfire recovery? How do feedbacks reinforce patterns of genetic divergence on the landscape? What educational strategies help encourage safe driving in young adults? What makes a grocery store easy for shoppers to navigate? What genetic factors predict if someone will develop hypothyroidism? Does contemporary evolution along the gradients of global change alter ecosystems function? How did you write your first research question? What were the steps you followed to create a strong research question? Do write to us or comment below. Struggling to stay focused in your research paper? Chances are, you missed the first and most critical step learning how to write a research question for your study. Without a clear, specific, and researchable question, your study can easily drift off course. A well-crafted research question is the foundation of any successful research project. It guides your study, sharpens your direction, and defines what you're truly investigating. In this comprehensive guide, you'll discover how to write a research question that works. We'll break down the essential elements of a strong research question, walk you through the step-by-step process to develop one, explain the different types, and highlight common mistakes to avoid. A research question is a specific, focused, and answerable inquiry that your study aims to explore. It defines the core purpose of your research by identifying exactly what you want to investigate. Knowing how to write a research question ensures that your study stays structured and relevant from beginning to end. Your research question determines what data you need, how you'll collect it, and the methods you'll use to analyze it. It shapes your entire research design guiding your literature review, framing your hypothesis, and influencing your conclusions. In short, a strong research question gives your study clarity, direction, and purpose. Without it, your research can lack focus and fail to produce meaningful results. Example of a Research Question: What impact does daily screen time have on the academic performance of senior high school students? Understanding how to write a research question isn't just about formality it's essential to doing research that matters. A well-defined research question serves as the blueprint for your entire study. It ensures that your work is relevant, logical, and aligned with clear objectives. Here's why the research question is so important: Focus and Clarity: It keeps your study narrowed down and prevents scope creep. Guides Methodology: It influences your choice of research design, instruments, and data analysis methods. Drives Literature Review: It helps you identify which sources are most relevant to your topic. Shapes Hypotheses and Objectives: Your hypothesis, research goals, and even survey questions are rooted in your main question. Makes Your Study Researchable: A clear question avoids vague, abstract problems and ensures your topic can be explored through evidence. Without a strong research question, even a well-written paper can lose direction. This is why it's the first and most important step in any research journey. When learning how to write a research question, it's crucial to understand that not all research questions are the same. The type of research question you choose should match your study's purpose, whether you're describing a situation, comparing variables, identifying causes, or predicting outcomes. Here are the main types of research questions, explained with short, practical examples: 1. Descriptive Research Questions: These questions aim to describe characteristics, behaviors, trends, or conditions related to a particular population or phenomenon. They do not seek to explain relationships or causes just describe what exists. Use this when: You want to gather detailed information about a topic without exploring causes or effects. Example:What are the common stressors faced by first-year college students? 2. Comparative Research Questions These questions examine the differences or similarities between two or more groups, conditions, or variables. Use this when: You want to find out how one group or variable compares to another. Example:How does academic performance differ between students enrolled in online courses and those attending in-person classes? 3. Causal or Explanatory Research Questions These questions investigate the cause-and-effect relationship between variables. They aim to identify what factor(s) may be influencing an outcome. Use this when: You want to test a hypothesis or examine how one variable impacts another. Example:What is the effect of daily social media use on the attention span of teenagers? 4. Exploratory Research Questions These are used when the topic is new, unclear, or under-researched. They are broad and open-ended, designed to explore unknown aspects of a phenomenon. Use this when: You are entering a research area with limited existing studies and want to identify patterns or themes. Example:What factors influence student motivation in hybrid learning environments? 5. Predictive Research Questions These questions seek to forecast a possible outcome based on known variables or trends. They're often used in quantitative research, especially in fields like data science, education, or psychology. Use this when: You want to examine if one or more variables can predict an outcome. Example:Can time management skills predict academic success among engineering students? Tip: Always match your research question type with your study design. For example, causal questions often require experimental methods, while descriptive questions are typically used in surveys or observational research. Writing a research question is a step-by-step process that requires careful thought, research, and refinement. Below is a comprehensive guide on how to write a research question effectively, from selecting a broad topic to evaluating the final question. Each step builds on the previous one to ensure clarity, focus, and a well-structured approach to your research. The first step in crafting a research question is selecting a broad topic. This will be the subject area where you want to conduct research, and it should align with your academic interests and goals. Your topic should be wide enough to allow exploration, yet not so broad that it's unmanageable. Example:Mental health in university studentsThis is a broad area that covers a wide range of issues, from anxiety and depression to academic stress and coping mechanisms. Tip: Ensure that the topic is relevant to your field of study and has enough existing literature to support further investigation. Before narrowing down your topic, it's crucial to conduct preliminary research. This includes reading relevant articles, research papers, books, and reports to familiarize yourself with current trends, gaps in existing research, and ongoing debates within the field. Preliminary research helps you understand the context and significance of your topic. What to focus on: Recent studies: Look for current literature on the topic to see what has already been explored. Gaps in research: Identify areas that need further exploration or where research is lacking. Emerging trends: Look for new findings or evolving perspectives in the field. Example:Reading recent studies on mental health in university students might highlight common themes such as anxiety, stress, and depression, while pointing out that there is limited research on coping strategies specific to exam periods. Once you've done your preliminary research, the next step is to narrow your focus. A broad topic like mental health in university students can lead to several possible research questions. To make the research more manageable, choose a specific issue within the topic to explore in-depth. Example:Narrowing down from “mental health in university students” to “anxiety during exams.”This is a more focused issue that's both specific and relevant, as exam-related anxiety is a common concern for students. Tip: Avoid topics that are too broad (like “mental health” without a clear focus) or too narrow (like “anxiety among students at University XYZ during finals week”), as both can make the research process difficult. At this stage, it's important to articulate the problem your research aims to address. What issue needs further exploration? What do you want to know about the specific issue you've chosen? Your research question should address a gap in knowledge or contribute to solving a problem. Example:You may find that while general research on anxiety during exams exists, there's little insight into the coping strategies that students use during this time. This leads to the identification of a key problem: How do students manage their exam-related anxiety? Tip: Frame the problem clearly by considering why it's important to research this issue. What real-world impact could your findings have? Now it's time to put your thoughts into a clear, concise research question. Use open-ended formats like “how,” “what,” or “why,” as these types of questions encourage detailed exploration and allow for a range of responses. Example:What coping strategies do students use to manage exam-related anxiety?This question is clear, focused, and researchable, inviting further investigation into the coping mechanisms employed by students. Tip: Avoid yes/no questions or overly complex questions. A good research question should be specific, clear, and open-ended. After drafting your research question, it's essential to evaluate its quality. Use frameworks like FINER or SMART to assess whether your question meets essential criteria for research. FINER Criteria: Feasible: Can the question be answered with the resources, time, and methods available? Interesting: Does it contribute new knowledge or provide insights into an existing issue? Novel: Is it original and not too similar to existing research? Ethical: Can the research be conducted in an ethically responsible manner? Relevant: Does the question align with the field's current issues and needs? SMART Criteria: Specific: Is the question clearly defined and focused? Measurable: Can the variables be quantified or evaluated? Achievable: Is the question realistic given the resources and timeframe? Relevant: Is it meaningful in the context of your field or discipline? Time-bound: Can the question be answered within a reasonable period? Example Evaluation: What coping strategies do students use to manage exam-related anxiety? Feasible? Yes, there are existing methods to measure student anxiety and coping strategies. Interesting? Yes, it addresses a significant student concern. Novel? Yes, while anxiety is studied, coping strategies specific to exams need further research. Ethical? Yes, research on coping strategies can be ethically conducted through surveys or interviews. Relevant? Yes, it's highly relevant to educational psychology and student wellness. Tip: Take your time with each step. Developing a strong research question is key to ensuring the overall success of your study. Writing a research question for your study is one of the first and most critical steps in your research process. To ensure your research question is clear, focused, and achievable, it's crucial to use established frameworks. These frameworks will guide you in crafting a question that provides clear direction for your study, ensuring its quality from the start. To evaluate whether your research question meets these standards, consider using one of the following frameworks: FINER or SMART. These frameworks are designed to refine your question so that it can guide your research effectively. A. FINER Criteria The FINER criteria provide a set of standards to ensure your research question is appropriately formulated for academic inquiry: Feasible: Can you realistically answer the question with the time, resources, and data available? For example, a question asking about the impact of global economic shifts on all small businesses in the world might be too vast and not feasible within a limited study timeframe. Interesting: Does the question spark curiosity? Will it engage your audience and contribute to existing knowledge in your field? A question like “What are the new methods of data analysis in artificial intelligence?” is engaging because it invites exploration in a rapidly evolving field. Novel: Is your question original? Does it address a gap in current research or a less explored area? Novel questions push the boundaries of existing knowledge. For instance, “What are the effects of using machine learning in diagnosing mental health conditions?” fills a gap in both the fields of AI and mental health. Ethical: Can the question be studied ethically? Ethical considerations are paramount in research. For example, a question involving vulnerable populations (like minors or patients) must adhere to ethical guidelines concerning consent and privacy. Relevant: Does the question align with current issues in your field? The relevance of your research ensures that your work will contribute meaningfully to the academic community and real-world applications. A question like “What is the effect of urbanization on climate change?” remains highly relevant due to global concerns about climate change. B. SMART Criteria The SMART framework is widely used to ensure your research question is well-defined and measurable. Here's how it works: Specific: Your question should focus on a single issue that can be studied in detail. A broad question like “How does education affect society?” is too general. A more specific version would be “What is the impact of online education on learning outcomes in high school students?” Measurable: Can you quantify the variables involved? For example, “How many hours per week do high school students spend studying?” is measurable, while “What is the effect of studying on students' success?” is too vague. Achievable: Ensure the question can be answered within the scope of your research's available resources and timeframe. For example, a question like “How do renewable energy policies affect global economic trends?” may require resources beyond your study's scope, making it unachievable. Relevant: Your question should connect directly to the field of study and offer value. Asking about niche topics unrelated to your research's theme may not be helpful. For instance, “How do reading habits influence language learning?” is highly relevant in the field of linguistics and education. Time-bound: Can the question be answered within a defined period? For instance, “What factors influence consumer preferences for electric cars in the last five years?” provides a clear time frame for data collection and analysis. Evaluating examples of research questions helps in understanding how to write a research question for your study. Here's a comparison to guide your work: Bad Research QuestionWhy It's BadImproved VersionWhat is depression?Too broad, lacks focus.What coping strategies do college freshmen use to manage symptoms of depression?Is online learning bad?Biased, leading, and too vague.How does online learning affect engagement among senior high school students in STEM programs?What is climate change?Lacks a clear direction for research.What are the social and economic impacts of climate change on coastal communities in the last decade? In these examples, good research questions are specific, measurable, and aligned with the research focus, while bad questions are either too broad, unclear, or too biased. While learning how to write a research question for your study, there are several pitfalls to avoid. These common mistakes can hinder the clarity and effectiveness of your research question: Choosing questions that are too broad or too narrow: Broad questions are often unmanageable and lack the focus necessary for deep analysis, while overly narrow questions may limit the scope of your study. For example, “What causes depression?” is too broad, while “How does depression affect teenagers living in New York City?” is too narrow unless specifically focusing on that population. Asking questions that are not researchable or measurable: Ensure your question can be studied with available data or resources. Questions that require subjective or immeasurable data, such as “What is happiness?”, are difficult to answer academically. Using biased or leading language: Research questions should be neutral and not suggest a particular answer. A question like “Why are online classes terrible?” leads to a biased answer, whereas “How do online classes compare to traditional classes in terms of student performance?” is neutral. Phrasing the question so it can be answered with a yes or no: Questions that result in a simple yes or no answer often lack depth for academic research. For example, “Is technology good for students?” is too simplistic for meaningful study. Focusing on questions that lack academic or practical relevance: A research question must contribute to the field's knowledge or solve a real-world problem. Questions that don't contribute to advancing knowledge or practical applications may not be useful. Once you've formulated your research question, it's important to validate it. Here's how to ensure your research question is viable when learning how to write a research question for your study: Cross-check with recent studies: Are there existing studies that already answer your question? Validate your question by looking at the current literature to avoid redundancy or duplication. Research databases like Google Scholar or JSTOR are useful tools for this. Seek expert feedback: Feedback from mentors, professors, or colleagues can help identify if your question is too broad or needs refinement. Experts may point out gaps or flaws you've missed. Test it using the FINER or SMART framework: Run your question through these criteria to see if it fits well with the desired research outcomes. Ask yourself: Can this question realistically be answered with the data, time, and resources available? Ensure the question is answerable given your study's scope. For your study to be coherent and focused, you need to align your research question with your study's objectives and outcomes. Here's how: Ensure your research objectives stem directly from the question: Your research objectives should break down the question into manageable components that you can explore through data and analysis. Each objective should reflect part of what the question aims to uncover: For example, if your question is about the influence of technology on student performance, your objectives might include measuring the usage of technology in classrooms and comparing academic outcomes between different methods of instruction. Ensure your methodology clearly connects with the variables or phenomena in your question: Choose a research methodology that will allow you to test the relationship between the variables in your question. Design outcomes that can be traced back to the original question: The findings from your study should directly connect with and answer your research question, providing logical coherence. To improve your ability to write clear and concise research questions, here are a few strategies: Practice reworking vague questions into researchable formats: Constant practice can refine your ability to narrow down broad questions into focused ones. Analyze research questions from high-impact studies: Reviewing well-formulated questions from reputable studies can provide you with examples of good practices and techniques for writing your own. Join peer writing groups or workshops: Collaborating with others in research writing groups can help improve your question formulation skills. Get regular feedback from experienced researchers or supervisors: Gaining insights from experienced mentors or faculty will help you avoid common mistakes and improve the quality of your questions. Formal education, particularly in research methods, provides valuable resources and techniques for writing research questions. Here's how it helps: Research methods courses teach frameworks and logic essential for question design, enabling you to form clear and effective research questions. Thesis or capstone projects provide hands-on practice with real-world data, allowing you to test and refine your question-formulating skills. Courses in logic, statistics, and writing further develop your analytical thinking and ability to craft specific, measurable, and answerable research questions. Yes, online certifications in areas such as research methods, data analysis, and critical thinking can help you improve your research question formulation. Here's how: Improve your technical understanding: Learn methodologies and strategies to design strong research questions that align with advanced research practices. Expose you to diverse types of questions and study designs: Online certifications often offer exposure to a wide range of research questions, helping you broaden your perspective and adaptability. Provide templates and structured guidance: Online courses offer structured guidance, sample questions, and templates to help you develop your own research questions. Recommended platforms include Coursera, edX, Udemy, and FutureLearn. Knowing how to write a research question for your study is one of the most important things you need to learn as a student or researcher. A good research question helps you stay focused, gives your study a clear direction, and makes it easier to find useful answers. If your question is too broad, unclear, or hard to answer, your whole research project can become confusing. That's why it's important to follow the right steps like starting with a broad topic, narrowing it down, checking if the question is specific and possible to answer, and making sure it connects to your goals. A strong research question helps you write better papers, get better results, and finish your study with confidence. Was this article helpful? Developing a research question can be a challenging task, especially when you are new to the field of research. You may have too many ideas, or none at all. You may feel overwhelmed by the scope, complexity, or novelty of the research methods. You may wonder if your question is interesting, relevant, original, or feasible. Selecting an appropriate research question is however critical to the success of your project, even though it may seldom be explicitly stated in the final paper. First of all, choosing the right research question can help you avoid frustration and disappointment. If you pick a topic or a problem that is too broad, too narrow, too complex or too simple, you may encounter difficulties in finding relevant sources, defining your research objectives, designing your methodology or presenting your findings. Secondly, developing the right research question can help you achieve your academic or professional goals more effectively. It guides you on choosing the appropriate research design and methods. You should develop a question that aligns with your objectives and expectations, thus maintaining your focus. You should also consider the feasibility, relevance and contribution of your question to your field of study or practice. Finally, developing a good research question can help you enjoy the research process and learn new things. If you are passionate about your question, you will develop more curiosity, creativity and persistence in exploring it. You will find research more rewarding and satisfying if you choose a question that sparks your interest and challenges your skills. In this blog post, we will provide you with some tips on how to develop a research question that is interesting, relevant, feasible, and most importantly, that works for you. We will also provide you with some examples of effective research questions. We will cover the following aspects in detail: How to brainstorm and identify research needs How to conduct a literature review and identify gaps How to formulate a research question How to evaluate and refine your ideas By the end of this blog post, you should have a better understanding of how to develop a research question that will help you achieve your research goals. i. Start with Curiosity Start with what you're curious about. What topics or questions interest you? What are the gaps in this field of study or unresolved issues? What field or fact do you want to explore? For example, you may be curious about the impact of nutrition on maternal and child health in Cameroon. You may want to solve the problem of malnutrition and its consequences among pregnant women and children under five. ii. Exploration Techniques Mind Mapping Technique: Write your general topic in the center of a page Branch out with related concepts, questions, and sub-topics Look for connections between branches that might suggest unique angles The Five Ws Approach: Who is affected by this topic/problem? What exactly is the issue or phenomenon? When does this occur (historically, seasonally, etc.)? Where is this most relevant geographically or contextually? Why does this matter to the field and broader society? iii. Journal Browsing: Explore different sources of information. Read books, articles, blogs, podcasts, videos, etc. that spark your interest. See what other researchers are doing or have done and what gaps or opportunities they identify, such as the lack of data, the need for more evaluation, the potential for innovation, or the importance of context-specific solutions. You will usually identify these aspects under the discussion, limits/limitations sections in most research papers. Exploring these sources, a particular theme or field might feel inspiring to you or may capture your curiosity iv. Focus and Feasibility Narrow down your focus. Once you have a general idea of your field of interest, try to define it more specifically. What aspect or angle do you want to explore? What can be the main question or goal of your research? What are the sub-questions or objectives that support it? Consider the feasibility and relevance of your research. How realistic is your research question? Do you have the time, resources, and skills to conduct it? How will your research contribute to the existing knowledge or practice in your field? How will it benefit you or others? This step is crucial to the success of any research project. You should always review the existing literature and find the gaps in the knowledge that your study can address. A literature review is not just a summary of what has already been done, but a critical analysis of how your research question fits into the current state of knowledge. It contextualizes your research question. Here are some ways on how you can conduct a literature review and identify the gaps in the knowledge: Start Broad, Then Narrow: Make a broad search of your topic and narrow it down as you go. Use keywords, and apply them in databases, journals, books, and other sources that are relevant to your field and topic. For example, search databases such as Google Scholar, PubMed, Scopus, Web of Science, AJOL, etc. Example Search Process: Suppose your research idea is about investigating the impact of climate change on infectious diseases in Africa. You may start by using keywords such as “climate change”, “infectious diseases”, and “Africa” to search for relevant sources on Google Scholar or PubMed. You may then narrow down your search by adding more specific keywords, such as “malaria”, “dengue”, “cholera”, or “vector-borne diseases”. You may also filter your search by publication date, language, or type of source. Digital Tools to Enhance Your Literature Review ToolPurposeBenefitsZoteroReference managementOrganize sources, generate citations, annotate PDFsMendeleyReference managementSimilar to Zotero with social networking featuresConnected PapersVisual bibliographyDiscover relevant papers based on citation networksSemantic ScholarAI-powered searchFind influential papers with citation contextElicitAI-based research assistantSearches and synthesizes literature Quality Assessment Evaluate the quality and credibility of the sources you find. Check the author's credentials, the publication date, the publication journal, the methodology and the results. Avoid sources that are outdated, biased, or unsupported by evidence. For example, you may check the author's affiliation, qualifications, and publications to see if they are experts in the field of your topic. You may also check the publication date to see if the source is current and up-to-date. Also ensure to check the publication journal to see if it is peer-reviewed, reputable, and has a high impact factor. You may also check the methodology and the results to see if they are valid, reliable, and relevant to your research question. Organization and Analysis Organize your literature review into themes or categories that reflect the main aspects of your research question. For each theme or category, summarize the main findings, compare and contrast different perspectives, and highlight the strengths and weaknesses of the existing literature. This can easily be done with the use of referencing managers such as Zotero or Mendeley. Identify areas where further exploration is needed or that previous research studies have not addressed. These can be theoretical, methodological, empirical, or practical gaps or challenges that have not been adequately explored or resolved. Reflect on which research can fill these gaps or challenge these assumptions and contributions and contribute to the advancement of knowledge in that field. Here are some tips to help you out brainstorming on possible research questions after your thorough literature review and exploration: i. Initial Question Development Start by stating a broad research question that you think can help filling the gap you noticed while doing the literature search. For example, you may have noticed that there is a lack of studies on the mental health impacts of the COVID-19 pandemic in Africa, especially among vulnerable groups such as refugees, internally displaced persons (IDPs) or HIV patients. Therefore, you may state a broad research question like this: Does the COVID-19 pandemic affects the mental health of vulnerable populations in Africa? Do some preliminary research on your research question to see what has been done before and what are the current issues or debates. You can use online search strategies with keywords. For example, you may use keywords such as “COVID-19”, “mental health”, “refugees”, “IDPs”, “PLHIV” and “Africa” to search for relevant articles, reports, and websites. You may find some sources that provide background information, statistics, and evidence on the topic. ii. Advanced Brainstorming Techniques The Contrarian Approach: Take existing research conclusions and ask “What if the opposite is true?” Examine underlying assumptions in the field and question them Look for contexts where established principles might not apply Interdisciplinary Integration: Identify concepts from other disciplines that could inform your field Consider methodologies from different fields that could offer new insights Look for parallel problems in other domains that might have transferable solutions Problem-Solution Mapping: List all the problems or challenges identified in your literature review For each problem, brainstorm potential solutions or approaches Consider which problems align with your interests and expertise Develop questions that examine the efficacy of your proposed solutions iii. Formulate specific and focused questions that address the gaps that you identified. These questions should be clear, concise, and answerable with data. They should also be relevant and meaningful to your field of interest and your audience. You may formulate some specific and focused questions like: What are the most common and severe mental health disorders among IDPs in Douala Cameroon, and how do they vary by age, gender, and location? Or What are the barriers and facilitators to accessing and utilizing mental health services and resources for refugees, IDPs and PLHIV in Africa, and how can they be addressed or enhanced? These questions are not yet refined but they help you enumerate and focus on the aspects you would like to explore. You may now want to refine your research question to a specific issue, population, or context by revising, expanding, or narrowing it based on your research findings. You can use different strategies to refine your research question, such as adding or removing variables, specifying the population or context, comparing, or contrasting different aspects, or using different types of questions (such as descriptive, explanatory, evaluative or predictive). When applicable, your research question should answer all or some of the following key questions: “What”, “how”, “why”, “who/where/when”. The PICOTS framework is widely recommended in medical and epidemiological research for defining research questions. PICO stands for Population P, Intervention I, Comparison C, Outcome O, Time T and Setting S. Population: It also includes the patient or the problem of interest. In order to define this aspect of PICOTS, you can ask yourself the following questions: Who is the population of interest of my study? Who do I define as a patient? What are the characteristics of the population (age, gender, health condition…)? What are the eligibility criteria for participants (age, gender, health condition…)? Intervention or the exposure: What is the intervention, exposure or factor being studied? Interventions such as drug therapy, behavioral therapy, diagnostic tests, etc or if there is no intervention, what is the exposure (smoking, alcohol intake…)? Comparison What is the alternative or control group that is compared with the intervention? For example, in clinical trials we usually compare treatment groups with Placebo groups or Gold and standard treatments. Similarly, we can compare groups of people exposed to a particular factor with unexposed groups. Outcome What result/outcome are you measuring? How will you measure it? It can be a clinical or epidemiological outcomes such as prevalence, incidence, mortality, quality of life, etc. Time When will the study take place? What period? Will there be a follow up period? Setting Where will the study take place? A whole country, a specific country, a specific city, hospital or facility? You should be specific about the setting of your study. It is also important to mention that this framework varies with the type of research question (such as descriptive, explanatory, evaluative or predictive). The table below summarizes the application of the PICO components per question type. Table. PICO by type of Research Question Question TypeFocusPICO ComponentsDescriptiveWhat is happening?P: Population O: Outcome (prevalence, trends)Aetiology/Causal P: Population E: Exposure C: Control O: Outcome (disease/effect)DiagnosticHow accurate is the test?P: Population I: Diagnostic test C: Standard test O: AccuracyPrognosticWhat is the likely outcome?P: Population E: Exposure/Prognostic factor C: Comparison/Absence of factor O: Outcome (e.g. survival, recovery)Intervention/TherapyDoes it work?P: Population I: Treatment C: Control/placebo O: Clinical outcomeQualitativeWhat are the experiencesP: Population O: Experiences, Perceptions (PICO less applicable; consider SPIDER framework) Source: Formulating the Research Question PICO Framework, CRENC (2025) For example, we have a broad causal research question: What are the effects of antidepressants on the anxiety levels in Yaounde? Breakdown of the PICOTS components: P (Population): Individuals with anxiety disorders in Yaoundé I (Intervention): Antidepressant treatment (e.g., SSRIs, SNRIs) C (Comparison/Control): No treatment or an alternative treatment (e.g., psychotherapy, placebo) O (Outcome): Change in anxiety levels (measured via standardized scales, e.g., GAD-7, HAM-A) T (Time): Over a 12-week period (or another appropriate time frame) S (Setting): Clinical and outpatients in Jamot Hospital in Yaounde Now the refined question will look like this: “In individuals diagnosed with anxiety disorders in Yaoundé, how does treatment with antidepressants (e.g., SSRIs or SNRIs) compared to no treatment or psychotherapy affect anxiety levels over a 12-week period in clinical and outpatients of Jamot hospital?” This version makes the research question more specific, measurable, and applicable to research design, relevant and is additionally time bound (SMART). When you will have a list of research questions you want to pursue, you will ask yourself “how do I decide which ones are worth your time and effort?” The following points will help you evaluate the feasibility, originality and significance of your research questions. Feasibility: Suppose you want to research the effectiveness of a mobile app for improving the adherence to antiretroviral therapy (ART) among people living with HIV in Cameroon. To answer this question, you need to consider the feasibility of your research project. Can you realistically answer the question with the resources, data skills and time that you have? Do you have access to the data, methods and tools that you need? Are there any ethical, legal or practical barriers that might prevent you from conducting the research? Originality: Is the question new or novel in your field of study? Does it address a gap in the existing literature or challenge a dominant paradigm? Does it offer a new perspective or a different angle on a familiar topic? For example: How does exposure to air pollution affect the cognitive development of children in urban areas? This question is original and novel because it explores a relatively under-researched topic in public health, namely the impact of air pollution on cognitive outcomes. It addresses a gap in the existing literature by focusing on a specific population (children in urban areas) and a specific outcome (cognitive development) that have not been extensively studied in relation to air pollution. Significance: Does the question matter to your discipline, society or institution? Does it have implications for theory, policy or practice? Does it contribute to the advancement of knowledge or the solution of a problem? For example, what are the effects of community-based interventions on the prevention and control of malaria in sub-Saharan Africa? This question is significant because it matters to the discipline of public health, as malaria is one of the leading causes of morbidity and mortality in the region. It contributes to the advancement of knowledge by providing evidence-based recommendations for the optimal design and implementation of community-based interventions for malaria prevention and control. Note that your research question should be ethical, meaning that it does not harm or exploit any individuals or groups involved in your research. To narrow down your list of research questions, you can use these criteria to rank them from high to low priority. You can also ask for feedback from your peers, mentors or supervisors to get their opinions and suggestions. Remember that you can always revise your research question as you go along. Like mentioned above, your final research question must be specific, measurable, achievable, relevant and time bounded. You must ask yourself whether it can be answered using research methods. Choosing a research question is one of the most important and challenging steps in any research project. It requires curiosity, creativity, and critical thinking. A good research question should be feasible, original, significant, and ethical. It should also reflect your own interests and goals, as well as the needs and expectations of your field. To choose a research question, you should start with a broad topic, review the existing literature, identify the gaps or challenges, and formulate specific and focused questions. You should also seek feedback from your peers, mentors, or supervisors, and be ready to revise your question as you progress with your research. By following these directories, you will be able to find a research question that is both interesting and meaningful to you and your field of study. How to Write About Your Research Interests. Accepted Admissions Blog (2023, December 8). Brainstorming and Deciding On Questions—Mann Learning Technologies Committee—Dashboard. (n.d.). Retrieved January 24, 2024, from and+Deciding+On+Questions CRENC. (2025, January 30). Formulating the research question PICO Framework [Video]. YouTube. DeCarlo, M. (2018). 8.5 Feasibility and importance. How do I identify a research gap during the literature review? (2021, January 29). Editage Insights. Identify Your Research Interests | Undergraduate Research | University of Arizona. (n.d.). Retrieved January 24, 2024, from McCombes, S. (2022, October 30). 10 Research Question Examples to Guide Your Research Project. Scribbr. McCombes, S. (2023, January 2). How to Write a Literature Review | Guide, Examples, & Templates. Scribbr. Researching Programs: Profiling Your Research Interests—Purdue OWL®—Purdue University. (n.d.). Retrieved January 24, 2024, from Because of all their influence, you might worry that research questions are very difficult to develop. Sometimes it can seem that way. But we'll help you get the hang of it and, luckily, none of us has to come up with perfect ones right off. It's more like doing a rough draft and then improving it. That's why we talk about developing research questions instead of just writing them. Steps for Developing a Research Question The steps for developing a research question, listed below, can help you organize your thoughts. Step 1: Pick a topic (or consider the one assigned to you). Step 2: Write a narrower/smaller topic that is related to the first. Step 3: List some potential questions that could logically be asked in relation to the narrow topic. Step 4: Pick the question that you are most interested in. Step 5: Change the question you're interested in so that it is more focused and specific. As you view this short video on how to develop research questions, think about the steps. Which step do you think is easiest? Which do you think is the hardest? Practice Once you know the steps and their order, only three skills are involved in developing a research question: Imagining narrower topics about a larger one, Thinking of questions that stem from a narrow topic, and Focusing questions to eliminate their vagueness. Every time you use these skills, it's important to evaluate what you have produced—that's just part of the process of turning rough drafts into more finished products. Three steps for developing a research question Maybe you have a topic in mind but aren't sure how to form a research question around it. The trick is to think of a question related to your topic but not answerable with a quick search. Also, try to be specific so that your research question can be fully answered in the final product for your research assignment. For each of the narrow topics below, think of a research question that is logically related to that topic. (Remember that good research questions often, but not always, start with “Why” or “How” because questions that begin that way usually require more analysis.) Topics: U.S. investors' attitudes about sustainability College students' use of Snapchat The character Scout in To Kill a Mockingbird Nature-inspired nanotechnologies Marital therapy After you think of each research question, evaluate it by asking whether it is: Logically related to the topic In question form Not answerable with a quick Google search Specific, not vague Sometimes the first draft of a research question is still too broad, which can make your search for sources more challenging. Refining your question to remove vagueness or to target a specific aspect of the topic can help. The first draft research questions below are not focused enough. Read them and identify at least one area of vagueness in each. Check your vagueness with what we identified. It's great if you found more than we did because that can lead to research questions of greater specificity. See the bottom of the page for our answers. First Drafts of Research Questions: Why have most electric car company start-ups failed? How do crabapple trees develop buds? How has NASA helped America? Why do many first-time elections soon after a country overthrows a dictator result in very conservative elected leaders? How is music composed and performed mostly by African-Americans connected to African-American history? Some answers to the “Focusing Questions” Activity above are: Question 1: Why have most electric car company start-ups failed? Vagueness: Which companies are we talking about? Worldwide or in a particular country? Question 2: How do crabapple trees develop buds? Vagueness: There are several kinds of crabapples. Should we talk only about one kind? Does it matter where the crabapple tree lives? Question 3: How has NASA helped America? Vagueness: NASA has had many projects. Should we should focus on one project they completed? Or projects during a particular time period? Question 4: Why do many first-time elections soon after a country overthrows a dictator result in very conservative elected leaders? Vagueness: What time period are we talking about? Many dictators have been overthrown and many countries have been involved. Perhaps we should focus on one country or one dictator or one time period. Question 5: How is music composed and performed mostly by African-Americans connected to African-American history? Vagueness: What kinds of music? Any particular performers and composers? When?