

Generating Good Research Questions in Health Professions Education

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- Generating a specific research question is an integral part of the overall research design.
- It lays the foundation for the research study and informs each step of the study design.

Steps		Examples
Identify an idea or problem A general research question lays the foundation for the entire study design.	Use local problems or ideas to formulate a general question <ul style="list-style-type: none"> • Problems, interests, or changes at your institution • Ideas from reading medical education journals 	Lapses during handoffs have been occurring at your institution. You are wondering how to improve handoff practices.
Perform a literature review A literature review helps identify what has already been published and a conceptual framework.	Review prior publications <ul style="list-style-type: none"> • Identifies prior methodology, gaps in understanding, and areas for elaboration Identify a conceptual framework¹ <ul style="list-style-type: none"> • Organizes related ideas into an overarching theme • Informs your research including the selection of study variables and the interpretation of results 	Few studies have looked at whether simulated handoffs improve the quality of handoffs (literature review). You begin to read more about simulation-based mastery learning ² (conceptual framework).
Generate a specific research question The general research question is narrowed to state the specific goal of the study.	Narrow your general research question to a more specific question <ul style="list-style-type: none"> • FINER question³ • Needs to be answerable 	Your first question: Does handoff simulation reduce unnecessary test ordering? You are unable to determine what is necessary ordering, and refine your question to whether handoff simulation decreases handoff errors on call.
Develop a study design The specific research question and conceptual framework identify study variables and inform the study design.	Consider common medical education study designs^{1,4} <ul style="list-style-type: none"> • Experimental • Quasi-experimental • Nonexperimental • Qualitative⁵ 	You plan a quasi-experimental design. Interns on half of the services will participate in the handoff simulation. You plan to use a validated tool identified in the literature to assess quality of handoffs in the two groups.

The “FINER” criterion is an example of available frameworks that can be used to “test” the specific research question.³

FINER research question	Feasible Is this question answerable with the resources you have available to you?
	Interesting and Important Is this question interesting to you as the investigator, as well as to the general health professions education community?
	Novel Does the question add to the current body of knowledge?
	Ethical Can you answer this question without putting anyone at risk?
	Relevant Does the answer to the question matter not only at your institution but also at others?

References:

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Types of Research Designs*

Quantitative Designs		Qualitative Designs	
<i>Design</i>	<i>Focus</i>	<i>Design</i>	<i>Focus</i>
Descriptive	Explore how, what, when, and where questions, instead of why. This allows the researcher to gain insight into the problem itself before investigating why it even happens in the first place.	Narrative	Describe the lives of individual(s) to get meaning from them. Stories about lived experiences become the raw data.
Correlational	Explore the relationship between two or more variables through a correlational analysis. The intent is to determine if and to what degree the variables are related. It does not imply one causes the other.	Ethnography	Explore data collected by observations and interviews to draw conclusions about collective experiences of certain groups. Ethnographers observe life as it happens in authentic settings as opposed to trying to control or manipulate variables.
Quasi-experimental	Similar to experimental in that there is a control and test group. However, existing groups are used as is rather than randomly assigning people to the two groups. Both groups receive the pre and post- test in a traditional design.	Phenomenology	Studies a human experience at an experiential level such as understanding what it means for a woman to lose a child. It is about understanding the essence or meaning of the experience.
Experimental	Test an idea, treatment, program to see if it makes a difference. There is a control group and a test group. Individuals are randomly assigned to the two groups. One group gets the study intervention and the other group gets the standard treatment. There is a pre and post-test for both groups in a traditional experimental design.	Grounded Theory	The focus is to develop an understanding of a phenomenon or situation in order to be able to develop a theory/model for items such as factors, a form of interaction, or a process.
Mixed-Methods Research Designs			
<p>A mixed research design involves having both a quantitative design and qualitative design. Mixed designs are the best approach if the study requires both quantitative and qualitative designs to address the problem statement. Mixed design studies take significantly more time, more resources, and require the researcher to develop expertise in qualitative analysis techniques and quantitative analysis techniques. Qualitative studies can use numbers, counts and even descriptive statistics. Using numbers does not mean the study has to be quantitative or mixed methods.</p>			

*Adapted from: <https://cirt.gcu.edu/research/developmentresources/tutorials/researchdesigns>