Workshop:
How to write a research question?

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Welcome, Introductions, and Learning Objectives

• Identify the process for how to write a meaningful research question

• Evaluate research questions
What is education research?

You may wish to:

• investigate an educational change or development that is being planned to define a new or better way of proceeding.

• plan a pilot study of an educational intervention, carried out with a view to informing how best to implement larger-scale reforms.

• review or evaluate an existing educational activity or curriculum change. These may be small-scale, local projects (such as introducing different teaching or learning methods or new clinical activities) or evaluation of large-scale national initiatives (such as the training programmes or national examinations).

• Conduct a systemic literature review. These may be carried out as part of ongoing research to inform the research process or as a discrete activity to provide information to a specific audience about the current findings from published literature.
What is the overall aim of research in medical education?

- To provide teachers, clinicians, managers and learners with systematically obtained information that helps to improve the quality of the learning process.

- Education research can play an important role in informing measures to improve the personal and professional wellbeing of healthcare professionals.
What are the challenges in medical education research?

- Education research draws largely from the social sciences in its approach, research methods and interpretation of results, and may involve a shift in perspective from the seeking of irrefutable ‘facts’ and universal ‘truths’, to offering new insights, acknowledging the subjectivity of researchers, the impact of the research process itself on subjects and outcomes, and the agency of the subjects of the research.

- The difference between doing education research and other healthcare research is that often the immediate effects of the intervention are seen and assessed on the educators or their students, rather than on the processes and outcomes of patients.

- In qualitative research the research question may change (or further questions added) later on.
The research question?

- Bordage and Dawson (2003) emphasise that ‘the single most important component of a study is the research question. It is the keystone of the entire exercise’.

- Defining the aims of your study clearly will determine all other aspects of the design. This involves selecting an appropriate topic and defining a timely and appropriate research question.

- In the same way that clearly defining learning outcomes or objectives helps us to plan learning and teaching activities, defining your research question or project aims provides a clear focus for the whole research process.
A good tip

Talk about your research.

It helps you write it down in a clear and concise way.
Exercise 1

Small group discussion:

What are your research interests?

How are you planning to approach defining your research question?
The Research Question

• Relevance is key. The question needs to be of academic and intellectual interest to people in the field you have chosen to study. The question should arise from issues raised in the literature or in practice.

• You should be able to establish a clear purpose for your research in relation to the chosen field. For example, are you filling a gap in knowledge, analysing academic assumptions or professional practice, monitoring a development in practice, comparing different approaches or testing theories within a specific population?

• You need to make sure that your research contributes to educational knowledge, even if this is in a small way or for local/organisational consumption only, rather than replicating work that has already been done.
Factors to consider

Research questions need to be carefully shaped and crafted. To develop a strong research question from your ideas, you should be mindful of the following factors:

• Researchers should begin by identifying a broader subject of interest that lends itself to investigation.

• The next step is to do preliminary exploration around research on the general topic to find out what research has already been done and what literature already exists. How much research has been done already? What types of studies? Is there a unique area that yet to be investigated or is there a particular question that may be worth replicating?

• Then begin to narrow the topic by asking open-ended "how" and "why" questions. Create a list of potential questions for consideration and choose one that interests you and provides an opportunity for exploration.
Remember, the more you work on your research question the more complicated it seems to get.

‘We know accurately only when we know little, with knowledge doubt increases.’

Johann Wolfgang von Goethe
Finally, evaluate your research question

- Is the research question one that is of interest to the researcher and potentially to others? Is it a new issue or problem that needs to be solved or is it attempting to shed light on previously researched topic.

- Is the research question researchable? Consider the available time frame and the required resources. Is the methodology to conduct the research feasible?

- Is the research question measurable and will the process produce data that can be supported or contradicted?

- Is the research question too broad or too narrow?
Remember Clarity and Simplicity

The complexity of a question can frequently hide unclear thoughts and lead to a confused research process. A very elaborate research question, or a question which is not differentiated into different parts, may hide concepts that are contradictory or not relevant. This needs to be clear and thought-through, but it is one of the hardest parts of your work.
Make sure that you have a real, grounded interest in your research question, and that you can explore this and back it up by academic and intellectual debate. It is your interest that will motivate you to keep working and to produce a good piece of research.

Research can be quite labour intensive. A keen interest in the topic helps to keep the momentum up!
Exercise 2

Small group discussion:

Critique these examples of research question .................

How would you answer these questions (and hypothesis) ?

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What are the learning experiences of HCPs of rural origin within the context of training at IHLs (Institutes of Higher Learning) in South Africa?

How do emotions experienced during workplace learning relate to medical students’ identity development?

The hypothesis was that spatial abilities are proportionally correlated to initial technical skills performance in health care.
Operationalising the research question

One of the essential parts of planning the project is to get its size right – you need to know that the research is feasible and that it can be done within the resources you have available. This means getting the level of the question right and having a really clear focus on methodology and logistics.
The size of your project

Depends on:

• Whether the research is being conducted as part of a higher degree

• If it is, do you want to publish your work (there is likely to be a difference between meeting learning outcomes and meeting the expectations of a journal).

• Your research population/sample and access to participants

• Time constraints

• The availability of internal or external funding and support

• Whether this should be a pilot project or build on existing research
Areas to consider as you operationalise your research question

• Can you map out the contemporary debates and critiques in the area? Are there any recent legal or policy changes of significance? What are the main practice issues to consider?

• Qualitative or Quantitative methodology

• Research methods
  
  Data collection

  Data analysis

  Ethical considerations / Research governance processes
Areas to consider as you operationalise your research question

- Make a list of the skills and knowledge you bring to the research task. If a qualitative approach is most appropriate, do you like interviewing? Will you be able to have the interviews transcribed? Are you keen to do surveys? Are you good at statistics? Remember that you will need to have a reasonable sample to undertake meaningful quantitative analysis.

- Are there sources of secondary data that you could access?

- Are there possibilities for documentary analysis?
Feasibility

• Ensure from the outset that the research is MANAGEABLE

• Sometimes a research question appears feasible, but when you start it proves otherwise. In this situation, it is important to write up the problems honestly and to reflect on what has been learnt. It may be possible, with your supervisor if appropriate, to develop a contingency plan to anticipate possible problems of access.

• You need to be realistic about the scope and scale of the project. The question you ask must be within your ability to tackle.

• To reiterate, are you able to access people, statistics, or documents from which to collect the data you need to address the question fully? Are you able to relate the concepts of your research question to the observations, phenomena, indicators or variables you can access? Can this data be accessed within the limited time and resources you have available to you?
Final thoughts

• Can you answer the research question set?

• Is it feasible in your given timescale?

• Let the question drive your research design, not the other way round.

• Research studies can seem to get more complicated the more you read and think about it.

• Keep the momentum up throughout your project.

• Talk about your research question. It helps to clarify issues the more you can verbalise it.
Useful references


** Research questions taken from the following papers:


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