

### Lecture 3: Developing Research Questions, Aims, and Objectives.

#### Content

##### Introduction

#### 1. What is a research Questions

By the end of this lesson, students will be able to

2. Distinguishes between a research objectives, aims, and questions or what is called the Golden Thread
3. Be able to write research questions, research objectives, and research aims

##### Introduction

Once the literature review is complete; the next step is to determine the research questions, aims, and objectives. The research questions, aims, and objectives provide critical information to readers about the direction of your research study since they pose the question that the study aims to answer through the data collection process. These three elements are bundled together because it's extremely **important that they align** with each other, and that the entire research project aligns with them. The research aims, objectives and research questions collectively make what is called **"The golden thread"**. **The golden thread defines the focus and scope of your study**. They also help **keep you on track**, as they act as a litmus test for relevance. In other words, if you're ever unsure whether to include something in your document, simply ask yourself the question, "does this contribute toward my research aims, objectives or questions?". If it doesn't, chances are you can drop it.

#### 1. Research Questions

##### What is a Research Question?

A research question is the main question that your study is seeking to answer. Research questions have been defined in several ways. Some important definitions have been given in the following quotes:

**According to Creswell (2015 p. 110),**

**"Research questions are questions in quantitative or qualitative research that narrow the purpose statement to specific questions that researchers seek to answer. Researchers typically develop them before identifying the methods of the study (i.e., the types of data to be collected, analyzed, and interpreted in a study). Unlike the single statement found in a purpose statement, researchers typically state multiple research questions so that they can fully explore a topic.** Research

questions are found in both quantitative and qualitative research, but their elements differ depending on the type of research you are conducting”.

**According to Macintyre (2000, P. 30)**

“The research question is the central focus of your investigation. It must be clear, unambiguous, and genuine i.e. not something obvious that can be answered ‘yes’ or ‘No’; and if possible concise!”

**According to Leavy, (2022)**

**“Research Questions are the central questions that guide a research project.** They are the questions you seek to answer or explore. Once you have developed your research purpose statement, which details your objectives, you can develop questions that will help you achieve those objectives. The questions must be researchable. In other words, these are questions that can be directly answered through research”.

**According to Johnson & Christensen (2014),**

**“A research question** is a statement of the specific question(s) the researcher seeks to answer via empirical research. Although research questions are found in both quantitative and qualitative studies, they differ somewhat in their structure. Quantitative research questions state exactly the relationship being investigated between the target variables. Qualitative research questions are not as specific. Instead, qualitative research questions are more likely to ask a general question about a process or express intent to explore or understand the participants’ meanings of a particular phenomenon”.

According to Leavy (2022), **there** is no set rule for how many research questions you can ask in a study. Typically, there are anywhere from one to three primary research questions. There may be additional, more focused, secondary questions attached to the primary question, aimed at narrowing down the focus. (The research questions assume two forms: (a) a central question and (b) associated subquestions).

**For example;**

**Research question1 (primary question):** How do students describe the impact of zero-bullying policy in their school?

**Research question 1a** (secondary): Do students feel safer because of the policy?

**Research question 1b** (secondary): Are students more likely to report bullying they experience or witness?

This example shows that the primary aim of the study is for students to describe the **impact of these policies**, and the secondary questions are aimed at **assisting that primary goal**.

After you identify a research problem, you should also consider if it better fits a quantitative or a qualitative approach. Because the two approaches differ in their essential characteristics, there should be a match between your problem and the approach you use. What factors are important in determining this match? What type of research problem is best suited for quantitative research and what type for qualitative research?

Your **approach to research design** impacts **question construction**. What you are able to ask and the language used to write the research question are dependent on whether the study is quantitative, qualitative, or mixed methods.

## Qualitative Research Question

“A qualitative research questions is an interrogative sentence that asks a question about some **process, issue, or phenomenon** that is **to be explored**” (Johnson, & Christensen , 2014, P. NM and 163)

“Qualitative research questions are **inductive** (open-ended) and often begin with the words *what* or *how*. These questions may employ **nondirectional language**, including words and phrases such as *explore, describe, illuminate, unearth, unpack, generate, build meaning, and seek to understand*”. (Leavy, 2017, P.128)

### For example,

Bodycott, Walker, and Kin, (2001) investigated the belief that pre-service teachers held about their principals. Their statement of purpose was as follows:

The purpose of this study was to explore how the social context of schools and schooling influenced pre-service teachers’ personal constructs of the principals

The research question that followed from this purpose statement is this:

**How does the social context of a school influence pre-service teachers’ beliefs about the principals?**

**Example 2:** How do employees perceive digital transformation in retail HR?

**Example 3:** What are the barriers and facilitators of digital transformation in retail HR?

**Question 4:** What types of Internet experiences do parents have with teachers about the performance of the parents' children?

## Quantitative Research Questions

“Quantitative research questions inquire about the relationships among variables that the investigator seeks to know. They are frequently used in social science research and especially in survey studies” (Creswell 2014)

“Quantitative research questions are **deductive**. Questions center on how the variables under investigation relate to each other, affect different groups, or how they might be defined. They may employ **directional language**, including words such as *cause, effect, determine, influence, relate, associate, and correlate*.” (Leavy, 2017, P. 92)

A **quantitative research question** is question about the relationship that exists between two or more variables. Common forms are descriptive, predictive, and causal research questions, (Johnson, & Christensen , P. 2014, P. NM and 163)

### Examples

**Example 1** What effect does playing football have on students’ overall grade point average during the football season? (This question specifies exactly the variables that are to be investigated: the extracurricular activity of playing football and academic performance as measured by overall grade point average.

**Example 2** Does student self-care predict the well-being scores of engineering graduate students?

**Example 3** Does student support predict the well-being scores of engineering students?

**Example 4** Do student self-care and student support interact when predicting well-being in engineering graduate students?

Example 5 (Creswell) Do parent-teacher Internet communications affect student performance in the classroom?

### **Research Aims: Examples**

True to the name, research aims usually start with the wording “this research aims to...”, “this research seeks to...”, and so on. For example:

- *“This research aims to explore employee experiences of digital transformation in retail HR.*
- *“This study sets out to assess the interaction between student support and self-care on well-being in engineering graduate students”*

As you can see, these research aims provide a **high-level description** of what the study is about and what it seeks to achieve. They’re not hyper-specific or action-oriented, but they’re clear about **what the study’s focus is** and what is being investigated.

### **Research Objectives: What are they?**

The research objectives take the research aims and make them more **practical** and **actionable**. In other words, the research objectives showcase the **steps** that the researcher will take to achieve the research aims.

The research objectives need to be far more specific (higher resolution) and actionable than the research aims. In fact, it’s always a good idea to craft your research objectives using the “SMART” criteria. In other words, they should be specific, measurable, achievable, relevant and time-bound”.

### **Research Objectives: Examples**

Let’s look at two examples of research objectives. We’ll stick with the topic and research aims we mentioned previously.

For the digital transformation topic:

1. *To observe the retail HR employees throughout the digital transformation.*
2. *To assess employee perceptions of digital transformation in retail HR.*
3. *To identify the barriers and facilitators of digital transformation in retail HR.*

And for the student wellness topic:

1. *To determine whether student self-care predicts the well-being score of engineering graduate students.*
2. *To determine whether student support predicts the well-being score of engineering students.*
3. *To assess the interaction between student self-care and student support when predicting well-being in engineering graduate students.*

As you can see, these research objectives **clearly align** with the previously mentioned research aims and effectively **translate** the low-resolution aims into (comparatively) higher-resolution objectives and **action points**. They give the research project a clear focus and present something that resembles a research-based “to-do” list.

### **References**

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