

ECDE7002: Introduction to Research Methods in Education

Session 2: Research Questions



Research Planning Task

Investigating handedness

Research suggests that around 10% of the population are left-handed.

Task: Design a study to compare two types of student. You are aiming to see whether left handedness is more common in students who study some subjects, such as art students or geographers.

Investigating age and sleep patterns

Research has shown that the human body clock is very important in determining sleep and wake patterns.

Task: Design a study to investigate the relationship between age and sleep duration. Think about how they will record the amount of time they sleep over a number of nights (how many nights? which days of the week? how they will record it?)

Investigating food preference

Many theories have been offered to explain food preference in humans; some of which are biological, others due to environmental influence.

Task: Carry out a study to investigate:

1. Whether more males or females are vegetarians
2. How long the males and female participants have been vegetarian (in an attempt to identify which gender has been a vegetarian the longest)

Investigating honesty

Some researchers believe that when we are being truthful, our eyes look to the left, but if we are not being honest, we gaze to the right and that this process is reversed for left-handed people. Other researchers are not so sure.

Task: Design two ways in which this could be investigated.

Today's session

2 12/10/23 11-1	Focus: Research Questions and Methodology • Research study planning <u>task</u>; • What are the aims and objectives of your <u>research</u>?; • What will you attempt to explain / explore / describe / evaluate in your <u>research</u>?; • Which type of research question will you <u>need</u>?; • Writing a <u>good research</u> question; • Selecting a research methodology.
Follow up tasks	Suggested reading / watching

Can you answer the following questions?:



What is the aim of your research project?



Why is it important for you to explore?



What will be the benefits – to you, students/ others, a school/ university/ other?



Who does your research involve? participants (number, who are they?)



What is your research question?



What type of research study will it be?

Aims and Objectives

Aims: the overall driving force of the research – what is it that you want to find out?

Objectives: the means by which you intend to achieve the aim - how will you find this out?

Can you answer the following questions?:



What is the aim of your research project?



Why is it important for you to explore?



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What is your research question?



What type of research study will it be?

RESEARCH QUESTION



What will you attempt to explain / explore /
describe / evaluate in your research?

Types of Research Question

Descriptive

seek to describe the nature of what already exists.

Explanatory

seek to expound on a phenomenon or examine reasons for and associations between what exists.

Exploratory

investigate little-known areas of a particular topic.

Contextual

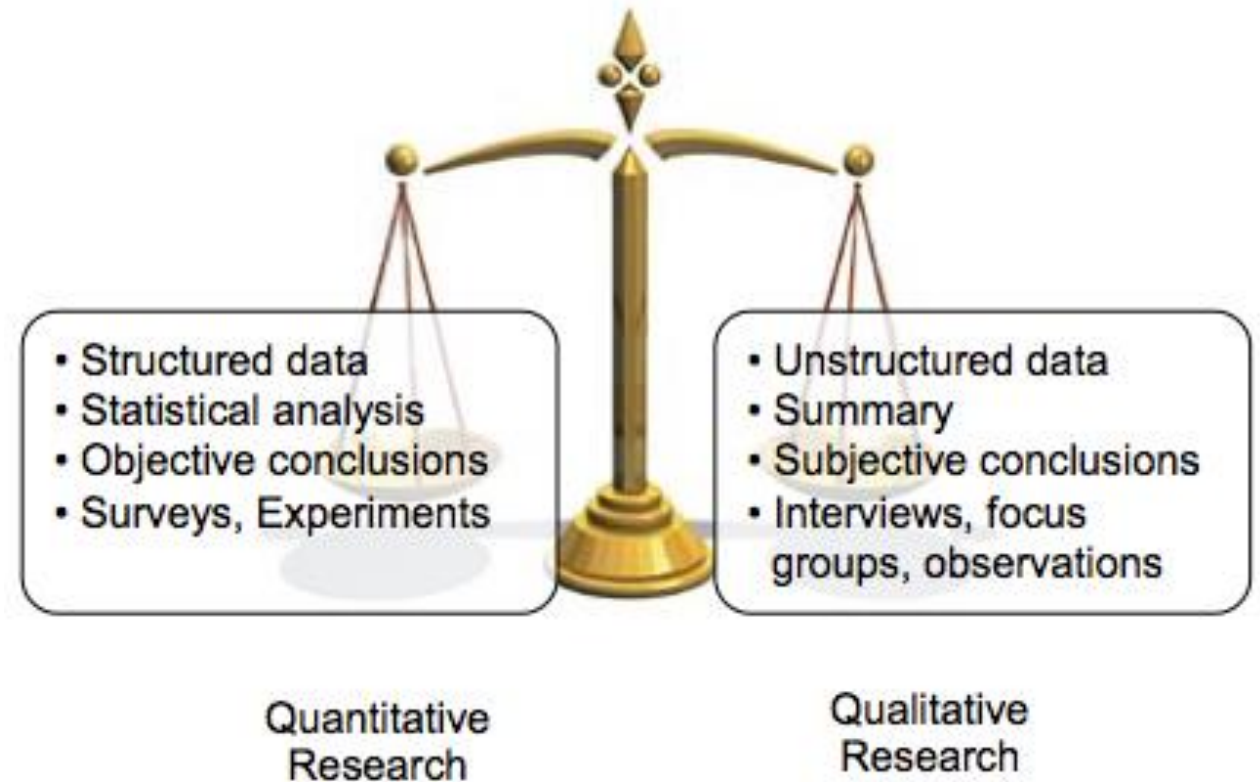
seek to describe the nature of what already exists.

Evaluatory

assess the effectiveness of existing methods or paradigms.

Qualitative and Quantitative Data

- Quantitative data refers to numerical information generated through the research process that can be understood, represented and analysed statistically.
- Qualitative data is non-numerical (e.g. text, image, audio) and offers the researcher a descriptive account of the phenomenon being studied.



Types of Research Question:

Quantitative

Quantitative research questions:

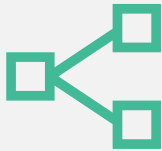
- seek to understand particular social, familial, or educational experiences or processes that occur in a particular context and/or location (Marshall & Rossman, 2011);
- typically include the population to be studied, dependent and independent variables and the research design to be used;
- usually written and finalised at the start of the project (Berger, 2015);
- not answerable with “yes” or “no” responses;
- don’t use words such as: is, are, do / does;
- can be further categorized into three types: descriptive, comparative and relationship.



Descriptive research questions aim to measure the responses of a study's population to one or more variables or describe variables that the research will measure. These questions typically begin with "what."



Comparative research questions aim to discover the differences between two or more groups for an outcome variable. These questions can be causal as well. For instance, the researcher may compare a group where a certain variable is involved and another group where that variable is not present.



Relationship research questions seek to explore and define trends and interactions between two or more variables. These questions often include both dependent and independent variables and use words such as "association" or "trends."

Quantitative Research Questions

Types of research question – Qualitative

Qualitative research questions:

- may concern broad areas of research or more specific areas of study.
- usually adaptable, non-directional, and flexible (Creswell, 2013);
- generally aim to discover, explain or explore;
- can be further categorized into several types (Marshall and Rossman, 2011; Ritchie et al., 2014).



A good research question generally has the following features:

- It is written in the form of a question
- It is clearly written
- It cannot be answered with “yes” or “no”
- It has more than one plausible answer
- It considers relationships among multiple variables
- It is specific and clear about the concepts it addresses
- It includes a target population

Research Questions should be:



- **Clear** – it should be easy to understand
- **Specific** – convey exactly what you want to know
- **Original** – remember that you're researching something new that has not been done before
- **Achievable** – is it possible for you to answer this question?
- **Relevant** – to the literature you've read, your own setting, the purpose of your enquiry
- **Interesting** – Why do people need to know about this?

(Adapted from Lewin, 1948)

Class discussion:



What is the best way
to teach counting to
young children?





TASK : Discuss the strengths and limitations of the following RQs.



1. Why do some learners find aspects of school difficult and what could the school do about it?
2. How often does the average parent listen to their child read and what is the impact on progress?
3. How many school days are lost through pupils' unauthorised absence?
4. What are the advantages and disadvantages of mobile phone use in schools?



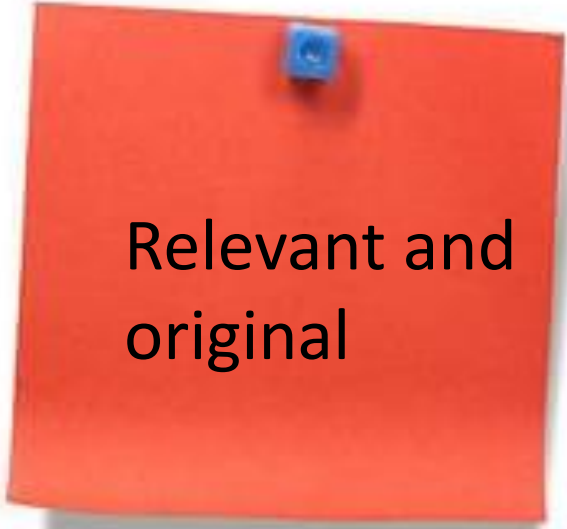
Focused and researchable

- Focused on a single topic or problem
- Does not ask for a subjective value judgement



Feasible and specific

- Answerable within practical constraints
- Uses specific, well defined concepts

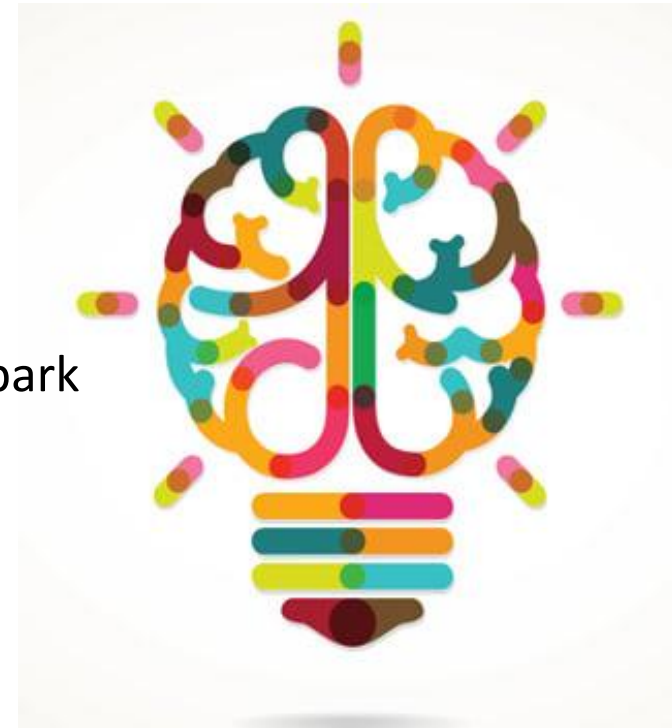


Relevant and original

- Addresses a problem relevant to your practice/setting
- Contribute to a topical or academic debate

Ask yourself:

1. Does the question deal with a topic or issue that interests me enough to spark my own thoughts and opinions?
2. Is the question easily and fully researchable?
3. What type of information do I need to answer the research question?
Is the scope of this information reasonable? (e.g., can I really research 30 writing programs that have been developed over 10 years?)
4. Given the type and scope of the information that I need, is my question too broad, too narrow or okay?
5. What sources will be able to provide the information I need to answer my research question (journals, books, internet, government documents, people)?
6. Can I access these sources?
7. Given my answers to the above questions, do I have a good-quality research question that I actually will be able to answer by doing research?



Can you answer the following questions?:



What is the aim of your research project?



Why is it important for you to explore?



What will be the benefits – to you, students/ others, a school/ university/ other?



Who does your research involve? participants (number, who are they?)



What is your research question?



What type of research study will it be?



Any questions?

Research Design

Can you answer the following questions?:



What is the aim of your research project?



Why is it important for you to explore?



What will be the benefits – to you, students/ others, a school/ university/ other?



Who does your research involve? participants (number, who are they?)

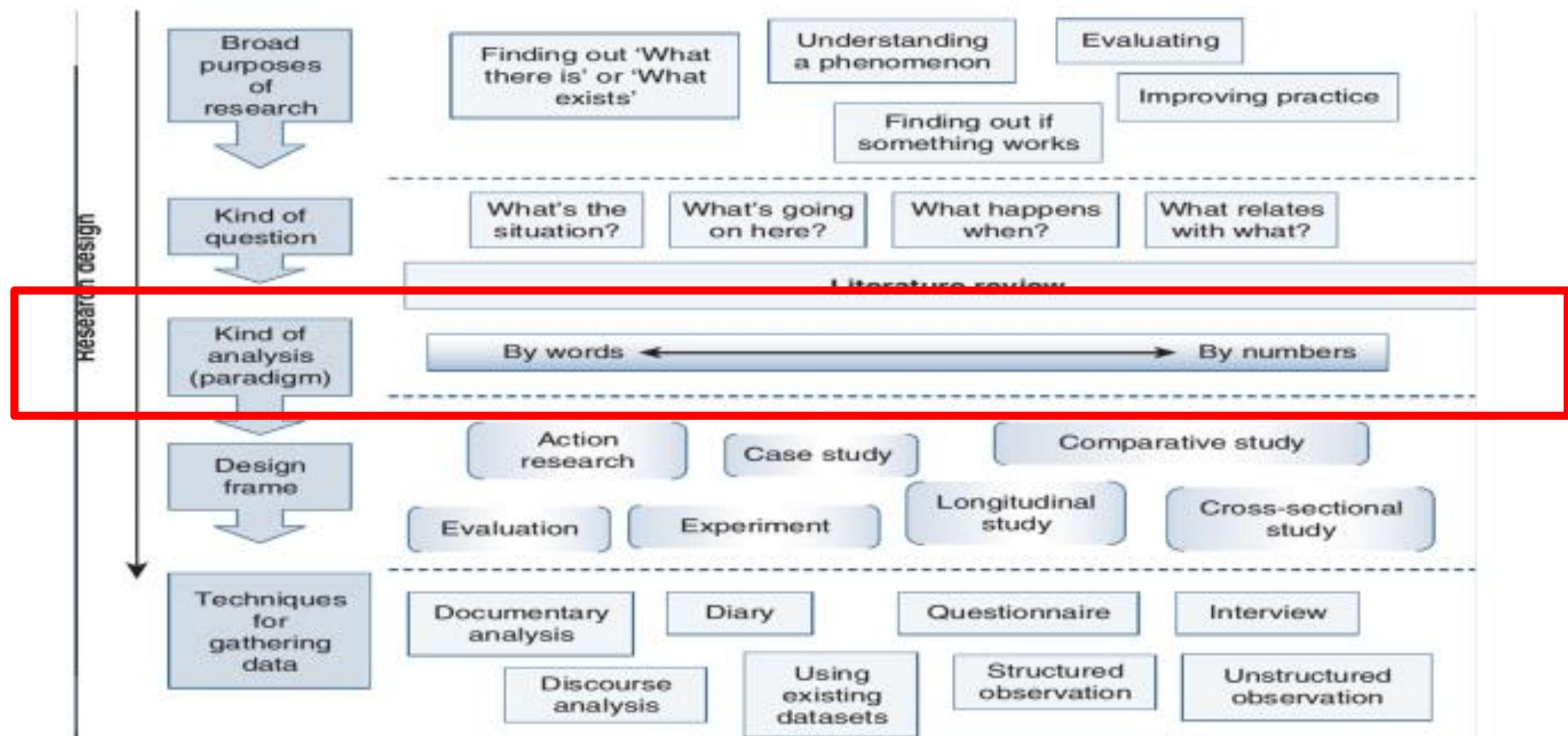


What is your research question?



What type of research study will it be?

The process of research design:

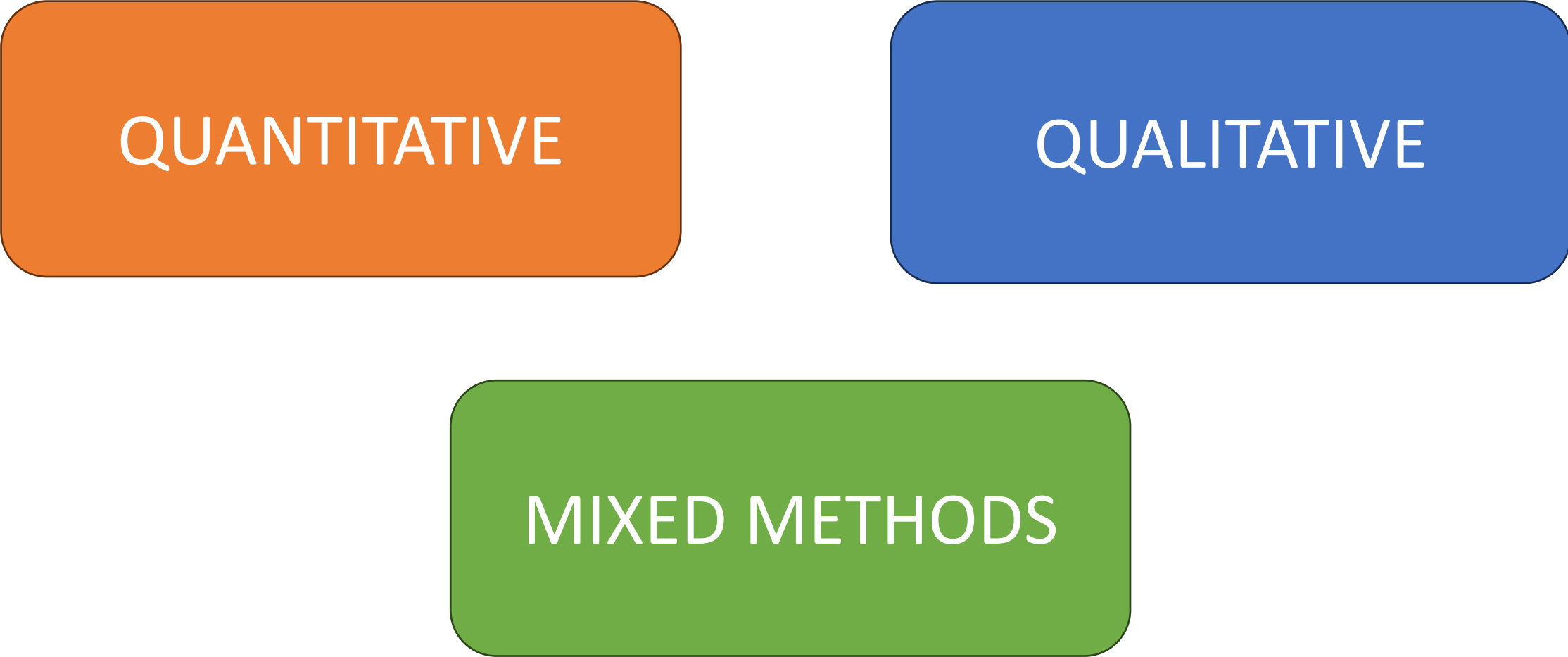


Methodology

- Theoretical positioning of the research
- Body of knowledge that explains how the research is done
- Justification of using a particular research method

Method

- The 'doing' of the research
- Strategy employed in the collection of data for analysis to uncover new information or gain a better understanding of a topic
- The tool(s) used to carry out the research



QUANTITATIVE

QUALITATIVE

MIXED METHODS

Quantitative Research (numbers)

- A means for testing objective theories by examining the relationship among variables.
- These variables can be **measured**, typically on instruments.
- Numbered data can be analysed using statistical procedures.

(Creswell, 2008)

Qualitative Research (words)

- A means for exploring and understanding the meaning of individuals or groups ascribed to a social or human problem.
- The process of research involves emerging questions and procedures.
- Data is typically collected in the participant's setting.
- Data analysis inductively builds from particulars to general themes, and the researcher making interpretations of the meaning of the data.

(Creswell, 2008)

Mixed Methods Approach

- An approach to inquiry that combines both qualitative and quantitative methods.
- It involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research.

(Creswell, 2008)

Follow-up tasks

Task 1:

Undertake some reading about a mixed-methods approach and make notes.

In preparation for Assessment Component 1, consider:

- Why might a mixed-methods approach be useful in your study?
- What are the strengths and limitations of this approach?

This is VERY IMPORTANT!

This means that, for this assignment, you **MUST** choose a research focus that allows you to carry out a mixed-methods approach.

Task 2:

In preparation for Assessment Component 1:

- Create between 1 and 3 research questions that would be answerable through a mixed methods approach to data collection.
- Explain what type of data would need to be collected in order to answer each one.

A photograph of a dining table with several white plates and bowls containing various dishes, including salads, seafood, and vegetables. Hands are visible using silver utensils to eat. The text "See you next week!" is overlaid in white, with a white wavy underline beneath it.

See you next week!