# Lecture 4 Research Approaches and Designs

**Undergraduate Course** 

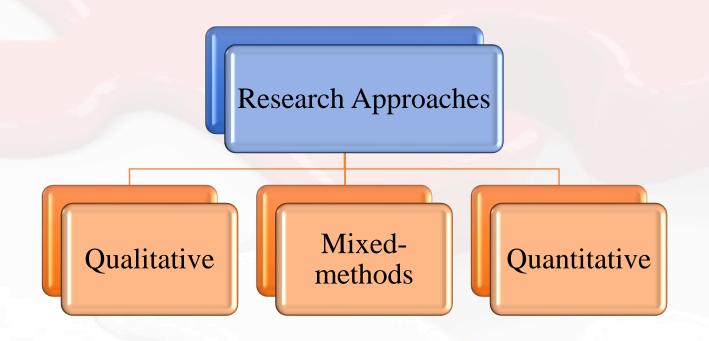
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## **Research Approaches**

- According to Creswell (2014), The research approach is the overall framework that connects the research problem, questions, and objectives with a consistent methodological strategy.
- For Bryman (2014), A research approach is a systematic framework for studying a phenomenon, incorporating the underlying philosophical perspective, chosen methods, and applied techniques.
- Research approaches provide the framework for the "how", guiding the methods we use to investigate the problem. They shape the study's design, data collection, and analysis, reflecting different ways of understanding reality and generating knowledge.
- They refer to the broad methodological strategies or frameworks used to design and conduct a study. They dictate how data is collected, analysed, and interpreted to address the research problem, questions, and objectives.

## I. Major Research Approaches

• There are three primary research approaches: qualitative, quantitative, and mixed methods. Choosing a research approach involves considering the research problem, the researchers' personal experiences, and the intended audience of the study (Creswell & Creswell, 2023)



## Creswell and Creswell (2023, p. 4)

#### **Qualitative Research**

- It is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The research process involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data.
- The final written report has a flexible structure. Those who engage in this form of inquiry use an inductive style building from data to themes and a focus on individual meaning and emphasizing the importance of reporting the complexity of a situation.

#### **Quantitative Research**

• It is an approach for testing objective theories by examining the relationship among variables or a comparison among groups. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analysed using statistical procedures.

• Quantitative researchers test theories deductively, build into a study protections against bias, control for alternative or counterfactual explanations, and seek to generalize and replicate the findings.

#### **Mixed-methods Research**

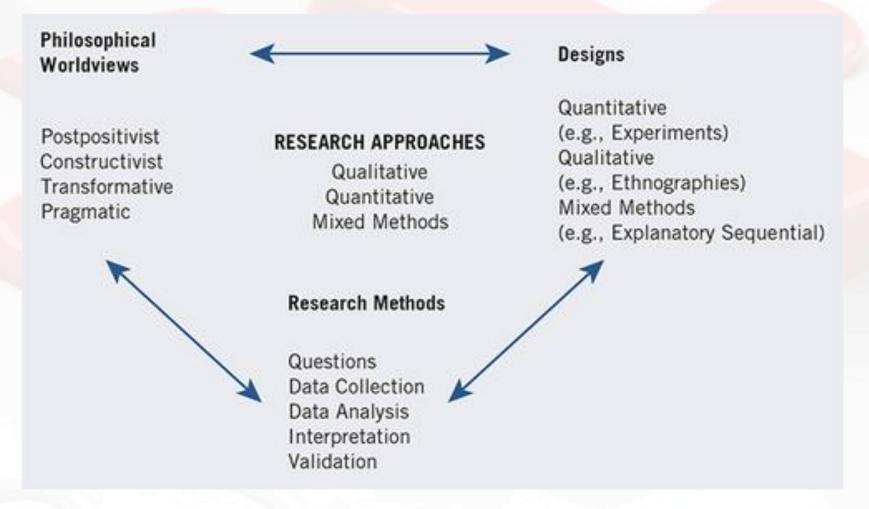
- It is an approach to inquiry involving collecting both quantitative and qualitative data, using a specific procedure or design, combining (or integrating) the two forms of data within the design, and drawing conclusions about the insight to emerge from the combined databases.
- This description emphasizes a *methods perspective* focused on understanding mixed methods research from its data collection, data analysis, and interpretation.
- Also, in mixed methods, a researcher brings philosophical assumptions and theories that inform the conduct of the research.

## **Comparison Table**

Aspect	Qualitative	Quantitative	Mixed-methods
Focus	Meanings, experiences	Measurements, relationships	Both meanings and measurements
Data type	Non-numerical	Numerical	Both
Objective	Explore, interpret	Test, predict	Integrate, triangulate
Example question	How do students feel about stress?	To what extent are stress and test scores related?	How does stress affect scores and why?
Strength	Depth, context	Precision, generalizability	Comprehensive insight
Weakness	Limited generalizability	Lacks depth in meaning	Complexity, time-intensive
Methods	Interviews, observations	Surveys, experiments	Both combined

## **Research Paradigms Underpinning Approaches**

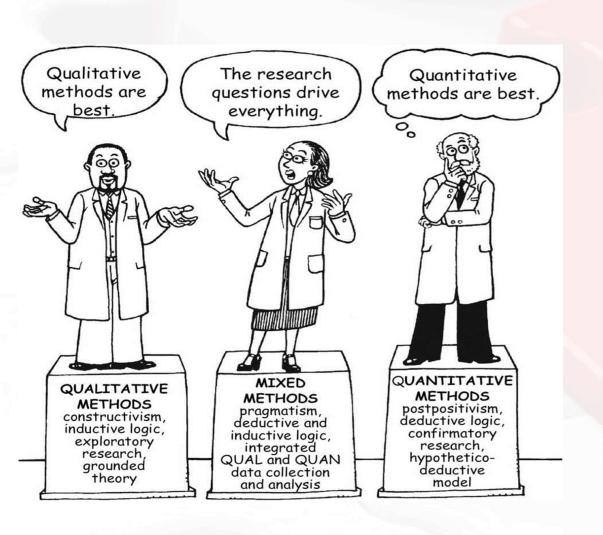
Research approaches are rooted in paradigms, i.e., philosophical frameworks that shape how researchers view reality, knowledge, and inquiry. These paradigms influence the choice of approach.



A framework for research – the interconnection of Worldviews, Design, and Research Methods (Creswell & Creswell, 2023, p.5).

### Philosophical Worldviews/Paradigms/epistemologies & ontologies

"the beliefs that guide action"



1. Positivism/ Post-positivism: Assumes a single, objective reality that can be measured and tested scientifically. It underpins quantitative research. Knowledge is objective; empirical data is key. Knowledge is interpretive; context matters.

Example: Stress can be quantified and its effects tested.

2. Interpretivism (Constructivism): Views reality as subjective, constructed through human experiences and meanings. It underpins qualitative research.

Example: Stress varies by individual perception.

**3. Pragmatism:** Focuses on practical solutions, accepting multiple realities and using whatever methods work best. It underpins mixed-methods research. Knowledge is problem-driven; flexibility is key.

Example: Combine surveys and interviews to understand stress fully.

## Example

Assume you want to know about a newly instituted dress code at a city high school. Depending on exactly what you want to find out, you might choose a quantitative, qualitative, or mixed methods approach.

Quantitatively: You could measure subsequent attendance, frequency of violations of the code, and/or the number of school suspensions for failure to comply. You might administer a survey that assesses students' attitudes toward the new policy or one that asks teachers about the policy's effect on the incidence of disciplinary problems in the school. Numerical data would be gathered and analysed.

Qualitatively: you might observe student behaviour in classes and also interview groups of students to obtain in-depth information on how the new dress code has affected their motivation and learning in the classroom, their self-image, and their general attitude toward school. You might interview parents to assess their reaction to the dress code and how they think it has affected their children. The result could be a rich verbal description of the personal and social meaning that the new policy has for students.

Combining these approaches in a **mixed-methods** study would provide the most complete information on the effect of the dress code.

• Whether researchers choose quantitative, qualitative, or mixed methods should be determined not by philosophical preference, but by determining which method is most appropriate and likely to provide the type of data to <u>answer the research question</u>.

✓ You simply use what will work.



## II. Research Designs

- While approaches set the overarching strategy, research designs provide the specific blueprint or plan for conducting the study. They detail the structure, methods, and procedures tailored to the chosen approach, ensuring the research is systematic and aligned with its goals. The research design is the practical framework that transforms the chosen approach into a structured and executable study (Creswell, 2014).
- Research designs are the detailed plans or structures that outline how a study will be conducted, specifying the methods for data collection, analysis, and interpretation within a chosen research approach. They operationalise the research process to address the problem effectively and to ensure the study is systematic, rigorous, and capable of answering the research questions or meeting objectives.

## **Major Types of Research Designs**

• Research designs vary by approach (qualitative, quantitative, mixed methods) and are influenced by paradigms (positivism, interpretivism, pragmatism). Creswell and Creswell (2023)

Quantitative Designs	Qualitative Designs	Methods Designs
Experimental and quasi- experimental     Single-subject     Nonexperimental such as surveys     Longitudinal	<ul> <li>Descriptive method</li> <li>Narrative research</li> <li>Phenomenology</li> <li>Grounded theory</li> <li>Ethnography</li> <li>Case study</li> </ul>	<ul> <li>Convergent</li> <li>Explanatory sequential</li> <li>Exploratory sequential</li> <li>Complex designs with embedded core designs</li> </ul>

## A. Quantitative Research Designs

- Experimental Design: Tests cause-and-effect relationships by manipulating variables and controlling conditions. Example: Randomly assign students to high-stress vs. low-stress conditions and measure test scores.
- Quasi-Experimental Design: Examines cause-and-effect without full randomisation or control. Example: Compare test scores in classes with different stress levels, no randomisation.
- Survey (Descriptive/Correlational) Design: Collects numerical data to describe phenomena or explore relationships without manipulation. Example: Survey students on stress levels and correlate with test scores.
- Ex Post Facto Design: Investigates cause-and-effect relationships after events have occurred, using existing data or conditions without manipulation. Retrospective; no control over variables, unlike experimental designs. Example: Examine how students' prior stress exposure (e.g., last year's exams) relates to current test scores.

## **B.** Qualitative Research Designs

- Case Study Design: In-depth exploration of a single case (e.g., person, group, event) within its context. Example: Study one school's experience with exam stress.
- Ethnography Design: Immersive study of a culture or group over time, focusing on behaviours and meanings. Example: Observe student stress in a classroom over a semester.
- Narrative Design: Examines individuals' stories or life experiences to understand phenomena. Example: Collect students' narratives about exam stress.
- Grounded Theory Design: Develops a theory inductively from systematic data collection and analysis, grounded in participants' perspectives. Iterative process; theory emerges from data. Example: Interview students to build a theory of stress coping.
- **Phenomenology Design:** Explores the essence of lived experiences of a phenomenon as perceived by participants. Example: Understand the lived experience of exam stress.

## C. Mixed Methods Research Designs

- Convergent Parallel Design: Collects qualitative and quantitative data simultaneously, then merges results for comparison. Example: Survey stress levels and interview students, then integrate findings.
- Explanatory Sequential Design: Starts with quantitative data, followed by qualitative data to explain results. Example: Measure stress and scores, then interview to explore why.
- Exploratory Sequential Design: Begins with qualitative data to explore, then uses quantitative data to test findings. Example: Interview about stress, then survey a larger group.
- Embedded Design (Complex with Core): Embeds one approach (qualitative or quantitative) within a dominant design of the other approach to address a secondary question. One method is subordinate, enhancing the primary design. Example: "Conduct an experimental study on stress interventions (quantitative dominant) with embedded qualitative interviews to explore participants' experiences."

#### References

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