

Lecture 3: RESEARCH PARADIGM: A PHILOSOPHICAL FOUNDATION OF RESEARCH

Introduction

Research is not simply a series of disconnected activities; it is an integrated process governed by a variety of methodological considerations. These considerations include the nature of the research question, the underlying philosophical assumptions such as ontology and epistemology, and the overall approach to research strategy and methods. Additionally, research methodologies can include a wide array of sub-issues related to the context of the study, the subjects involved, and the tools used for data collection and analysis.

These philosophical considerations lead to the development of distinct research paradigms, each offering different perspectives on how research should be conducted. Paradigms, or frameworks, are grounded in specific ontological (what is reality?) and epistemological (how do we know what we know?) assumptions, which shape the overall research approach.

Among the dominant research paradigms, three major schools of thought stand out: positivism, interpretivism, and pragmatism. Each of these paradigms offers a unique perspective on how knowledge is generated and what constitutes valid knowledge. Positivism emphasizes an objective reality that can be measured and quantified, interpretivism focuses on the subjective meanings that individuals ascribe to their experiences, and pragmatism bridges these views by focusing on practical solutions and real-world outcomes.

Before we delve into these paradigms individually, it is crucial to first understand the broader concept of research philosophy. Only then can we fully grasp the specific paradigms and their implications for research.

1- Concept of Research Paradigm

A research paradigm establishes the foundational outlook on reality, research purpose, knowledge, and the relationship between researcher and subject. It encompasses the beliefs, values, and practices that guide data collection and analysis, offering researchers a framework for generating knowledge. In this sense, paradigms shape not only the construction and execution of research but also the selection of methodologies. Acting as a bridge between philosophy and method, research paradigms ultimately support the interpretation and validity of findings. A paradigm is broadly defined as “a philosophical and theoretical framework of a scientific school or discipline within which theories, laws, and generalizations and the experiments performed in support of them are formulated” (Merriam-Webster Dictionary). The term originates from the Greek verb *paradeiknynai*, meaning “to show side by side,” and has been used in English since the 15th century to mean “example” or “pattern” (Merriam-Webster Dictionary). In research, a paradigm, referred to by Creswell and Creswell (2018) as a worldview, represents a shared framework guiding research practices within a field. This framework, or “comprehensive belief system” (Willis, 2007, p. 8), includes the assumptions,

values, and strategies that researchers in a community rely on to generate knowledge. As Fossey et al. (2002) noted, it is a “system of ideas” built on common beliefs and criteria for rigor. Dieronitou (2014) further characterized paradigms as “the set of common beliefs and agreements shared between scientists about how problems should be understood and addressed”. These paradigms unify researchers' approaches to understanding and addressing problems, shaping the foundational practices within a discipline. In short, a paradigm is a **pattern** to follow, and in philosophy, it represents a way of viewing the world that underpins the theories and methods in a particular field at a given time. According to Creswell and Creswell (2018), when planning a study, researchers must carefully reflect on **the philosophical worldview assumptions** they hold, select a research design that aligns with these beliefs, and employ specific methods or procedures to implement the chosen approach.

Research paradigms are built around three key perspectives ontology (nature of reality), epistemology (nature of knowledge and the relationship between knower and known), methodology (methods of inquiry), and axiology (values guiding inquiry) These elements form the core beliefs, assumptions, and values of any given paradigm, making a clear understanding of them essential. Therefore, having a solid grasp of these elements is crucial, as they represent the fundamental assumptions, beliefs, norms, and values inherent in each paradigm (Bryant, 1975).

1-Ontology: Ontology refers to the study of the nature of reality and existence. It addresses questions like "What exists?" or "What is the nature of being?" In research, ontology deals with the assumptions researchers make about the nature of the world and what can be known about it. It is “the part of philosophy that studies what it means to exist” (Cambridge Dictionary). It is the conception of reality or truth. According to Khatri (2020, p1436) “Ontology deals with the philosophical assumptions about the nature of reality or existence. It is simply called theory of reality”. “Ontology deals with the nature of reality — what is reality?” (Patel, Krishna & Parappagoudar, 2015).

2-Epistemology: Epistemology is the study of knowledge—its nature, scope, and how it can be acquired. It explores the relationship between the researcher (the knower) and the knowledge being sought. Questions like "How do we know what we know?" or "What constitutes valid knowledge? Epistemology is “the part of philosophy that is about the study of how we know things” (Cambridge dictionary). According to Trochim (2000 in Khatri 2020, p. 1437) “epistemology is the philosophy of knowledge or how we come to know”.

3-Methodology: Methodology refers to the systematic approach or framework guiding the research process. It includes the principles and rules researchers follow to select appropriate methods for investigating a research question. Methodology outlines **how** research should be conducted.

4-Methods: Methods are the specific tools, techniques, or procedures used to collect and analyze data. Examples include surveys, interviews, experiments, and statistical analysis. While methodology is the overall research strategy, methods are the actual steps or practices used in carrying out research.

4- Axiology: Axiology is a key component of the research paradigm, addresses ethical considerations in research. It focuses on the philosophical basis for making value-based or morally right decisions and is often referred to as the "theory of value." This involves

defining, evaluating, and understanding concepts of right and wrong behavior within the research context (Khatri, 2020).

2-Key Research Paradigms in Educational Research

Educational research typically revolves around three dominant paradigms: **Positivism**, **Interpretivism**, and **Pragmatism**. While numerous paradigms have been proposed by scholars, these three form the primary frameworks guiding research in the field.

2. 1-Positivism

Positivism is a philosophical and research paradigm that emphasizes the use of empirical evidence and scientific methods to acquire knowledge, asserting that only observable and verifiable phenomena are valid while rejecting metaphysical or untestable assertions. It assumes the existence of an objective reality that can be studied through cause-and-effect relationships, with knowledge derived from sensory observation and measurable data. The aim of this worldview is “to test hypothesis, employ quantitative method, and gather empirical evidence to explain and predict social phenomena. The researchers in this worldview strive for generalisability and value replicable findings. The emphasis on objectivity and detachment from the research subject distinguishes this paradigm from others” (Omodan, 2024, Major Research Paradigms). Researchers are expected to remain detached and objective, aiming to establish universal laws that explain and predict phenomena. Founded by Auguste Comte, who introduced the "law of three stages" emphasizing the scientific or "positive" stage of thought, positivism was further developed by thinkers like René Descartes, Isaac Newton, and Galileo Galilei, whose work shaped empirical and deductive approaches. In educational research, positivism focuses on measurable outcomes and quantitative methods such as surveys, experiments, and statistical analysis to evaluate and generalize effective teaching techniques. While its strengths include objectivity, reliability, and generalizability, it has limitations, such as oversimplifying complex human behavior, lacking relevance in uncontrolled settings, and being influenced by biases or participant effects. Despite its critiques, positivism remains influential in scientific and educational inquiry.

2. 2- Interpretivism

Interpretivism, also known as interpretive or constructivist research, is a significant paradigm in social sciences, particularly in educational research. It emphasizes understanding the social world through the perspectives of individuals experiencing it, focusing on the richness, meaning, and diversity of human experiences rather than quantifying phenomena. Researchers adopting the constructivism paradigm “believe that reality is socially constructed and that interactions negotiate meanings (Thanh & Thanh, 2015). They utilise qualitative methods such as interviews, participant observation, and textual analysis to explore the complexity of human experiences. Interpretive researchers seek to capture the richness of social phenomena, highlight multiple perspectives, and emphasise context and individual agency” (Omodan, 2024, Major Research Paradigms). Thus, this paradigm assumes that reality is socially constructed through shared understandings, making context and subjective experiences central to research. Reflexivity, where researchers critically examine their values and biases, and empathy, which fosters meaningful relationships with participants to co-construct knowledge, are key principles. Interpretivism acknowledges the variability of interpretations, aiming to capture nuanced meanings individuals ascribe to

actions and experiences while ensuring ethical and rigorous data handling. Methods such as narrative approaches and thematic analysis are commonly used to analyze qualitative data, focusing on patterns of meaning and cultural dimensions of human interactions. This paradigm underscores the importance of understanding personal and social dynamics in educational contexts, providing a deep exploration of lived experiences and the social processes shaping them.

2.3- Pragmatism

Pragmatism is a research paradigm that bridges constructivism and objectivism, emphasizing the practical application of knowledge to solve real-world problems. In contrast to the positivist paradigm, which focuses on objectivity and relies on quantitative methods, and the interpretivist paradigm, which emphasizes subjective meaning and utilizes qualitative techniques, pragmatism embraces the integration of both qualitative and quantitative approaches. This paradigm prioritizes addressing the problem at hand, recognizing that diverse types of data can offer complementary perspectives, rather than being bound by specific methodological preferences (Omodan, 2024). In that, pragmatism integrates elements from quantitative and qualitative paradigms, advocating for methodological flexibility based on the research questions. It views knowledge as dynamic, relational, and verified through empirical experiences, with its validity determined by its effectiveness in addressing problems and achieving outcomes. Key principles of pragmatism include transcending theoretical and practical dualisms, fostering collaboration between researchers and participants to address problems in real-world contexts, and promoting iterative cycles of inquiry involving problem identification, data collection, analysis, and action. Case studies are commonly used in educational research, as they offer in-depth insights and combine elements of social science and qualitative methods. Pragmatism encourages stakeholder involvement, iterative research processes, and ethical transparency, making findings actionable and fostering reflective learning. This paradigm aligns research with practical applications, ensuring it remains relevant, collaborative, and impactful in addressing complex educational challenges.

Ideas opinions and values	Positivism	Interpretivism	Pragmatism
Ontological beliefs: these are the beliefs about the nature of being and the characteristics of reality.	There is one, singular reality. Reality is controlled by universal laws which apply irrespective of time and place. Reality is not haphazard. Reality is objective.	There are multiple realities. Individuals construct their own understanding of reality so there are many different interpretations. There is no universal truth. Reality is subjective.	It is accepted that there are varying points of view about reality. Reality can therefore be regarded as being singular or multiple.
Epistemological beliefs: these are the beliefs about the nature of knowledge and how it is generated.	The generation of knowledge is not influenced by the researcher. The researcher can therefore be independent,	Knowledge is generated through shared understanding between individuals.	Knowledge can be generated both objectively and subjectively.

Ideas opinions and values	Positivism	Interpretivism	Pragmatism
	objective and value free. The researcher is 'outside' the research.	The researcher's beliefs will influence the research. The researcher is 'inside' the research.	
Methodological beliefs: these are the beliefs about the way research is conducted and knowledge is created	The research involves fixed designs with emphasis on measured, quantifiable information. To establish cause and effect the researcher controls and manipulates events or people. Research methods include randomised controlled trials, cohort studies and case studies.	The research involves flexible designs with emphasis on detailed, narrative information. There is no attempt to control or manipulate events or people. Research methods used include phenomenology, ethnography and grounded theory.	The most practical approach is adopted. The researcher selects the most appropriate research method and design in order to address the study's aims and objectives. A variety of qualitative and quantitative research methods can be used.

3-Key Differences and Similarities

One of the key differences lies in the methodologies dedicated by each paradigm due to their ontological and epistemological underpinnings. Positivism tends to be associated with the philosophical paradigm of objectivism and pragmatism, with a relatively constructivist one. As such, positivism is often associated with quantitative methodology, an approach that

focuses on collecting numerical data for analysis concerned with inferential statistics. By contrast, constructivist or interpretive paradigms are often related to qualitative methodologies, and the analysis of textual data, for example, emphasizes inductive reasoning and the study of meaning construction. The pragmatic approach can be claimed to have elements of both paradigms. Therefore, the arguments for and against the use of qualitative and quantitative methods in research are closely related to ontological and epistemological questions and not just practical concerns.

The differences between these paradigms, however, do not take away their distinctiveness, nor their strong interrelation. In fact, realist/pre-positivist and idealist/phenomenological philosophies indeed share common assumptions. For instance, both paradigms hold epistemic responsibilities based on the basic axiology, which is the evaluation of good and evil. Furthermore, as the deep philosophical assumptions of pragmatism flow from positivism, it shares with it many commonalities. Thus, there is a significant amount of overlap in the philosophical foundations of each paradigm. Overall, the interaction between these paradigms is clear, as pragmatism, as a result of world tendencies, tends to move toward a constructive orientation and be gradually influenced by it.

Conclusion

In summary, research paradigms shape how we conceptualize and engage with the worlds we inhabit. Positivism, constructivism, and pragmatism are among the most prominent paradigms, each reflecting distinct perspectives on "reality" and "knowledge." While these paradigms form the foundation of many research practices, they are continually re-evaluated and refined. Each paradigm entails specific methodological approaches that align with its philosophical assumptions.

It is crucial for scholars to deeply understand research paradigms, fostering an ongoing critique of the relationship between philosophy and practice that underpins meaningful research contributions. Furthermore, researchers must remain flexible in their methodological choices, adapting to new inquiries and insights that may emerge during fieldwork.

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