Discerning the Distinctive Characteristics of Key Research Paradigms and their Constituents

Bharat Kumar Shrestha iD
Department of Education, Manthali Sahid Smriti Multiple Campus, Ramechhap
Email: bkbharatrch@gmail.com

Lok Raj Sharma iD
Department of English, Makawanpur Multiple Campus, Hetauda, Nepal
Email: lokraj043@gmail.com

Corresponding author*
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Abstract
Background: Research paradigms are the underlying philosophical and theoretical frameworks that guide research studies. This article identifies and discusses key research paradigms: positivism, postpositivism, pragmatism, constructivism, interpretivism, and advocacy. Additionally, it explores their prominent constituents: ontology, epistemology, axiology, and methodology.

Methodology: The article has been prepared through a thorough review of key texts regarding research paradigms in books and journal articles. This literature review method ensures a detailed and accurate portrayal of the paradigms and their constituents.

Findings: Positivism emphasizes empirical evidence. Postpositivism recognizes the role of values and subjectivity. Pragmatism evaluates theories based on practical usefulness. Constructivism views knowledge as constructed by individuals through experiences. Interpretivism emphasizes understanding and interpreting the meanings people attach to their experiences. Advocacy or participatory research stresses the active involvement of community members and stakeholders in the research process. Ontology studies the nature of existence. Epistemology involves discerning

the characteristics and limits of knowledge. Axiology examines values and what is considered good and valuable. Methodology systematically analyzes methods in a field of study.

Conclusion: Understanding research paradigms has practical implications for researchers. It aids in pursuing the research process, selecting appropriate methodologies, and enhancing the credibility of their studies. This understanding ensures that research is methodologically sound, ethically robust, and socially impactful.

Novelty: This article provides a synthesized overview of the major research paradigms and their key components, offering a valuable resource for researchers to understand and navigate the complexities of research methodologies and philosophical frameworks.

Keywords: research, epistemology, ontology, axiology, methodology, research paradigms

Introduction

Research is a recurrently conversed, extensively discussed and highly revered topic among a myriad of scholars in academic circles. It is an essential deed as solutions to the problems drawn from the research studies are considered reliable and trustworthy. It is an organized inquiry aimed at providing information to solve identified problems (Asika, 1991), a systematic process that investigates phenomena, answers questions, and solves problems (Sekaran, 1992), a critical inquiry aiming to advance knowledge through self-reflection (Bassey, 1990), a structured quest for new knowledge (Redman & Mory, 1933), and a systematic inquiry (Burns, 1997). Moreover, it's the scholarly application of behavioral science principles to comprehend people in their social context (Cohen, Manion, & Morrison, 2007). Obviously, a research study is a complex task, involving an organized, systematic, and critical inquiry.

 Researchers need solid grasp of research designs prior to the commencement of their research studies. Research paradigms are the fundamental philosophical and notional structures that outline the way researchers approach and understand their subjects. Paradigm is a set of assumptions guiding research worldview (Deshpande, 1983; Mertens, 2012), and a foundational worldview guiding researchers (Guba & Lincoln, 1994). It is applicable for the researchers as it provides a general guide for conducting research and analyzing data, and informs about the proper selection of research questions, the design of studies, and the interpretation of findings. Furthermore, understanding the research paradigms is essential for social scientists to make informed decisions about their research and to critically evaluate the research of others.

Positivism, which is a philosophical viewpoint, emphasizes the scientific study of natural phenomena and limits the inquiry of knowledge to empirical evidence. It embodies cause-effect determinism (Creswell, 2003). Post-positivism recognizes the limitations of positivism and concedes the role of values, beliefs, and subjectivity in shaping scientific inquiry and knowledge production. It's a fundamental approach rejecting absolute truth in knowledge (Morgan, 2007).

Pragmatism evaluates theories or ideas based on their practical usefulness and success in achieving their intended goals. It's the foundational paradigm for mixed-methods research (Tashakkori & Teddlie, 2003; Somekh & Lewin, 2005). Similarly, constructivism posits that knowledge and reality are constructed by individuals through their experiences and interactions with the world. It asserts individuals construct knowledge through experience and reflection (Honebein, 1996). Likewise, Interpretivism emphasizes the subjective nature of reality and the importance of interpreting and understanding the meanings and experiences of individuals and social groups. It focuses on understanding subjective human experience (Guba & Lincoln, 1989). Advocacy or participatory research paradigm represents a systematic approach within the social sciences that prioritizes the active engagement of community members and relevant stakeholders as integral participants throughout the entire research process.

Ontology, as a key component of research paradigms, explores existence and reality, epistemology deals with knowledge acquisition and limits, axiology involves ethical and aesthetic values, and methodology analyzes applied methods.

Many texts focus on individual research paradigms such as positivism, interpretivism, and critical theory, but often fail to provide a comprehensive comparative analysis of their distinct characteristics and methodological implications. This article systematically compares these paradigms, detailing differences in ontology, epistemology, methodology, and axiology, and clarifies their practical impact on research design and data interpretation. It also addresses the ambiguity and overlaps in paradigm boundaries, offering clear guidelines for navigating or selecting appropriate paradigms for specific research questions. Unlike discussions that are confined to specific fields, this article examines how paradigms apply across diverse disciplines, enhancing their relevance and utility. It also integrates emerging paradigms like participatory action research, exploring their unique traits and contributions in comparison to traditional paradigms, and critically evaluates each paradigm to help researchers recognize biases and consider alternative approaches.

This article, which is grounded on an exploratory qualitative research involving secondary data or information, will be significant to the novices who are interested in bringing forth research studies as it assists them in discerning diverse research designs and their constituents, and provides them with options for implementing an apt research design.

Method and Materials

This qualitative research study, underpinned by an analytical analysis, utilized lexemes and phrases associated with research paradigms and their components as materials. This article was grounded on the secondary qualitative data that were gleaned from scholarly journal articles, website materials and books.

Results

Literature review encompasses a concise overview of main research paradigms and their key constituents.

Research Paradigm

The term 'paradigm' originates from Greek, denoting a pattern or framework for scientific and academic ideas (Olsen, Lodwick, & Dunlop, 1992). Philosophy preferred over 'paradigm'; it's the researcher's guiding worldview (Saunders, Lewis, & Thornhill, 2019). In educational research, it describes a researcher's worldview (Mackenzie & Knipe, 2006). It's a perspective or shared beliefs guiding data interpretation, reflecting researcher's worldview. (Lather, 1986). It's a set of related assumptions (Bogdan & Biklen, 1982) or the philosophical drive behind a study (Cohen & Manion, 1994), a philosophical mindset (Kivunja & Kuyini, 2017), and a foundational worldview guiding researchers (Guba & Lincoln, 1994). It shapes what's studied, how, and how findings are interpreted (Okesina, 2020), a guiding framework for research and practice (Willis, 2007) and Human constructions indicating the researcher's foundational perspective for interpreting data (Denzin & Lincoln, 2000). It is a worldview that frames and influences how researchers approach a topic (Hughes, 2010) , beliefs on problem existence and investigation methods (Fraser & Robinson, 2004), rules for filtering noise to capture and listen to friends' voices (Castellacci, 2006), worldview guiding the researcher (Guba & Lincoln, 1994), and the researcher's guiding worldview or assumptions (Saunders, Lewis, & Thornhill, 2019). Paradigms are crucial as they dictate what to study, how to study it, and how to interpret the results.

Major Research Paradigms
Positivism

The term 'positivism' refers to the scientific approach to understanding the world (Pawlikowski, Rico, & Sel, 2018), propounded by Auguste Comte (1798-1857). Comte saw it as a doctrine defining observation and reason as means to understand behavior, asserting that true knowledge is based on sensory experience and achieved through observation or experiment (Crotty, 2003; Cohen, Manion, & Morrison, 2007). Rising to prominence in the early nineteenth century due to Comte (Richards, 2003), positivism drives researchers to pursue the social world objectively and align scientific methods with human affairs (Martens, 2005; Grix, 2010). Rooted in rationalistic and empiricist philosophy, it connects to schools of thought like empiricism and behaviorism, taking a realist ontological stance (Guba & Lincoln, 1994).

Positivism emphasizes observable reality and generalizations (Alharahsheh & Pius, 2020), focusing strictly on pure data and facts (Scotland, 2012; Saunders, Lewis, & Thornhill, 2012). It employs hypotheses to test causality using quantitative methods (Bailey, 2011; Healy & Perry, 2000), aiming for reduced error margins and replicable findings (Healy & Perry, 2000; Hjørland,

2005). Scientific knowledge for positivists consists of independent facts, viewed through the lens of cause and effect (Walsham, 1995; Neuman, 2003). Researchers are seen as detached observers (Pring, 2000; Cohen, Manion, & Morrison, 2007).

Bryman (2008) outlines four key characteristics: phenomenalism, deductivism, objectivity, and inductivism. Quality research under positivism is defined by internal validity, external validity, reliability, and objectivity (Guba & Lincoln, 1994). It predominates in science, focusing on quantitative measurement of independent facts (Healy & Perry, 2000), embracing doctrines like phenomenalism, nominalism, the separation of facts from values, and the unity of the scientific method (Kołakowski, 1972).

Positivism's epistemology is objectivist and dualist (Guba & Lincoln, 1994), believing human experience reflects an independent reality (Weber, 2004). Researchers with a positivist orientation see reality as existing independently and discoverable through scientific methods (Bassey, 1995). Empirical facts are seen as independent of the researcher's ideas, governed by cause and effect laws, with stable patterns (Crotty, 1998; Neuman, 2003; Marczyk, DeMatteo, & Festinger, 2005). Positivist studies typically use a deductive approach, emphasizing validity, reliability, objectivity, precision, and generalizability to describe, predict, and verify empirical relationships in controlled settings (Crowther & Lancaster, 2008).

Main characteristics of positivism

Positivism can be characterized by the following key features:

Empiricism: Positivism, which asserts that knowledge can be obtained through sensory experience and scientific methodology, emphasizes the significance of empirical data and observation to achieve scientific truth.

Objectivity: It stresses the importance of impartiality and objectivity in the pursuit of knowledge.

Determinism: It states that events in the natural world are determined by natural laws, and that these laws can be discovered through scientific investigation.

Reductionism: It holds that complex phenomena can be reduced to simpler, more basic components and that these components can be understood and studied scientifically.

Post-positivism

Post-positivism addresses the criticisms and limitations of the rigidity in positivism (Patton, 1990). Currently, it shapes modern social science, like reality-focused qualitative research, by rejecting the notion of absolute truth in knowledge (Morgan, 2007).

Major characteristics of postpositivism

Postpositivism is a philosophical perspective that emerged in response to criticisms of positivism. It can be characterized by the following basic features:

Critique of empiricism: Postpositivism, which acknowledges the significance of empirical data and observation, also recognizes the influence of intuition, moral values, and personal experiences in shaping our understanding of the world.

Recognition of subjectivity: It remarks that there is no such a thing as purely objective knowledge as the pursuit of knowledge is shaped by our values and beliefs and perceptions.

Constructivist perspective: It sees knowledge as a product of interaction between individuals and their environment.

Holistic perspective: It recognizes that the world is complex and interrelated, and that reductionist approaches may not provide a full understanding of reality.

Recognition of uncertainty: It acknowledges that scientific knowledge is always provisional and subject to revision as new evidence is available. It recognizes that there may be multiple valid interpretations of a given phenomenon.

Pragmatism

Pragmatism underpins mixed-methods research as its philosophical framework (Tashakkori & Teddlie, 2003; Somekh & Lewin, 2005). Pragmatist researchers emphasize the "what" and "how" of the research issue (Creswell, 2003).

Core characteristics of pragmatism

It is characterized by these main features:

Instrumentalism: Pragmatism asserts that the value of an idea or belief is determined by its practical usefulness or success in solving problems and achieving goals.

Emphasis on action: It stresses the importance of taking action and putting ideas into practice.

Contextualism: It recognizes that knowledge is context-dependent and that It's influenced by its social and historical context.

Fallibilism: It assumes that knowledge is always provisional and subject to revision in light of new information or changing circumstances.

Human-centereddness: It is associated with a human-centered approach to philosophy, in which the focus is on the practical needs and interests of human beings.

Constructivism

Constructivism is a philosophical perspective that has influenced fields such as education, psychology, and sociology.

Fundamental characteristics of constructivism

It is characterized by the following outstanding features:

Emphasis on the active construction of knowledge: Constructivism holds that knowledge is actively built through interactions with the environment, others, and personal experiences.

Recognition of the role of perception: It acknowledges that our perceptions shape our world.

Social constructivism: It sees knowledge as a socially constructed product through interaction.
Emphasis on collaboration: It asserts that knowledge is a collective product that emerges from social interaction and negotiation.

Interpretivism

Interpretive paradigm emphasizes observation and interpretation (Aikenhead, 1997), understanding phenomena through assigned meanings (Deetz, 1996), and contextual analysis (Reeves & Hedberg, 2003). It avoids predefined variables, focusing on emergent sense-making (Kaplan & Maxwell, 1994), with inquiry aiming to grasp specific phenomena rather than generalization (Farzanfar, 2005). Its core is understanding subjective human experience (Guba & Lincoln, 1989), prioritizing rich research contexts over positivism (Alharahsheh & Pius, 2020). Interpretive researchers prioritize understanding individuals' interpretations of their world, using their words as evidence (Krauss, 2015). They derive constructs through in-depth field examinations (Walsham, 1993), viewing knowledge as interpretive acts (Gephart, 1999). Reality access is via social constructions like language and shared meanings (Myers, 2009). Rejecting positivism, they see reality as subjective and socially constructed (Krauss, 2005; Guba & Lincoln, 1994; Amare, 2004; Bryman, 1984). They employ qualitative methods to explore social realities (Bassey, 1995; Cohen, Manion, & Morrison, 2007), viewing the world as socially constructed (Maxwell, 2006; Bogdan & Biklen, 1992; Guba & Lincoln, 1985; Merriam, 1998). Findings are reported descriptively (Mutch, 2005), and researchers are naturalistic, studying real-world situations (Tuli, 2010).

Chief characteristics of interpretivism
It can be characterized by the following crucial features:
Subjectivity: Interpretivism recognizes that knowledge is constructed through interpretation, and that there is no such thing as objective truth.
Emphasis on meaning: It strongly emphasizes understanding individuals' meanings.
Constructivist perspective: It recognizes that knowledge is shaped by the larger social and cultural context, and that it is a product of ongoing social interaction and negotiation.
Cultural relativism: It asserts that cultural norms, values, and beliefs shape the way individuals understand and make sense of the world. It assumes that there is no one right way to understand the world and that knowledge is culturally relative.
Emphasis on the researcher's role: It affirms that the researcher must be reflexive and self-aware in order to produce meaningful and valid knowledge.

Advocacy / participatory research paradigm

The participatory research paradigm involves socially relevant agendas and increased user involvement in policy development (Bourke, 2009; Creswell, 2009; Wiersma & Jurs, 2009;

Newby, 2010), with enhanced stakeholder participation (Mukherji & Albon, 2010; Nolan, Macfarlane, & Cartmel, 2013; Rees & Oliver, 2012). It links research to social justice, advocating for policy reform (Creswell, 2009; Kemmis & McTaggart, 2000), prioritizing trustful relationships and political engagement (Datta et al., 2015). Participatory research amplifies community voices, highlighting concerns and inequalities (Bourke, 2009).

Focal characteristics of advocacy / participatory research paradigm

It is characterized by the following main features:

Empowerment of research participants: Advocacy/participatory research is designed to empower research participants and give them a voice in the research process.

Collaboration between researcher and participants: It emphasizes the importance of collaboration between the researcher and participants.

Focus on social change and advocacy: It recognizes that research can be used as a tool for promoting social change and advocacy. It asserts that the results of research should be used to promote the interests and well-being of research participants and to bring about social and political change.

Emphasis on community-based research: It is often conducted in community-based settings, and it is designed to reflect the perspectives, experiences, and needs of the community being studied.

Use of qualitative methods: It often uses qualitative methods like interviews, focus groups, and ethnography to deeply understand participants' experiences and perspectives.

Constituents of Research Paradigm

The research paradigm comprises beliefs about knowledge, methodology, and validity criteria (Rolfe & Siraj-Blatchford, 2010), including ontology, epistemology, methodology, and methods (Alharahsheh & Pius, 2020; Scotland, 2012). It encompasses theoretical assumptions and techniques adopted by a scientific community (Chalmers, 1982), along with epistemology, ontology, methodology, and axiology (Guba & Lincoln, 1994). Understanding these elements is crucial as they shape a paradigm's assumptions and values, guiding research (Guba & Lincoln, 1994).

Ontology

Ontology explores our assumptions about reality (Scotland, 2012), articulating the nature and structure of the world (Wand & Weber, 1993). It delves into the nature of existence and our beliefs about reality (Richards, 2003), focusing on the systems shaping our perceptions (Scott & Morrison, 2005). It determines whether reality is objective or subjective (Blakie, 2000) and guides researchers in understanding what exists (Weber, 2004). Ontology asserts an independent, objective reality (Scotland, 2012) or holds that reality is constructed in the mind (Makombe, 2017). Relativist ontology sees multiple realities, while non-singular reality ontology posits diverse

interpretations (Makombe, 2017). Positivism's ontology is realism, believing in an objective reality governed by natural laws (Guba & Lincoln, 1994), observable and measurable through scientific methods (Pring, 2000).

Positivist ontology claims that objects of study in the social sciences should be studied in a similar manner as natural sciences, with a focus on empirical data and objective analysis. The ontology of postpositivism is characterized by a commitment to realism and recognition of the subjective elements of knowledge construction. Pragmatist ontology holds that reality is not a static and neutral entity, but rather it is a constantly changing and dynamic process that is shaped by human interaction and interpretation. Constructivist ontology assumes that reality is not a fixed or objective entity, but rather is constructed and constantly reconstructed through the interactions and experiences of individuals and communities. The ontology of interpretivism reflects a view of the social world as a complex and dynamic system of subjective interpretations and experiences, shaped by social interactions and contextual factors. In the advocacy/participatory paradigm, ontology concerns how reality is perceived and constructed by individuals and communities. It asserts reality as subjective, shaped by experiences and perspectives, not fixed or objective.

Rudimentary characteristics of ontology

Categories of existence: It categorizes entities into different categories based on their nature, such as objects, events, processes, and properties.

Essence and existence: It explores the relationship between the essences or nature of an entity and its existence is explored.

Essentialism and nominalism: It deals with which entities have an inherent nature or essence (essentialism) versus the extent to which entities are simply named or labeled by humans (nominalism).

Universals and particulars: It considers the relationship between general or universal concepts and particular entities that instantiate those concepts.

Reality and appearance: It examines the distinction between the way things really are (reality) and the way they appear to be (appearance).

Substance and attribute: It deals with the distinction between entities that exist in their own right (substances) and entities that are dependent on other entities for their existence (attributes).

Epistemology

Epistemology explores how we understand truth and reality (Krauss, 2015; Nguyen, 2019), the theory of knowledge (Carson et al., 2001), and the nature of knowledge acquisition (Cohen, Manion, & Morrison, 2007). It encompasses sources like intuition, authority, logic, and empiricism (Slavin, 1984). Research can adopt objective, subjective, or relational epistemologies (Kivunja & Kuyini, 2017; Saunders, Lewis, & Thornhill, 2019). Mixed methods combine quantitative and qualitative approaches (Creswell, 2014; Shannon-Baker, 2016). Positivist epistemology is dualist

and objectivist (Guba & Lincoln, 1994), maintaining independence between researcher and subject.

Positivist epistemology holds that objective interpretations and personal opinions have no place in scientific inquiry, and that the goal of knowledge is to uncover objective and universal truths. Post-positivist epistemology recognizes that knowledge is constructed through a dynamic interplay between observation, theory, and interpretation, and that our comprehension of the world is shaped by our values, beliefs, and experiences. Pragmatist epistemology holds that knowledge is not fixed or absolute, but is rather a constantly evolving product of human interaction and experience. Constructivist epistemology states that knowledge is not passive and objective, but rather is actively constructed and reconstructed through the process of interaction and experience. The epistemology of interpretivism holds that knowledge is culturally and socially constructed, shaped by human interpretation, and actively constructed through the interpretive process of meaning-making. In the advocacy/participatory paradigm, epistemology concerns how knowledge is acquired and constructed. This paradigm views knowledge as being co-constructed through interaction and engagement between individuals and communities, rather than as something that is passively acquired from an external source.

Key characteristics of epistemology

Justification: It is concerned with what makes a belief justified and how beliefs can be justified. A belief is considered justified if it is based on sufficient evidence or reasons.

Skepticism: It often considers skeptical arguments and pinpoints whether it is possible to have certain knowledge of anything.

Empiricism vs. Rationalism: It deals with the debate of the relative merits of empiricism, which holds that knowledge is acquired through experience and observation, and rationalism, which holds that knowledge is innate or can be deduced from reason.

Reliability of knowledge sources: It examines the reliability of various sources of knowledge, such as sense perception, memory, intuition, and reason.

Objectivity and subjectivity: It also consider the extent to which knowledge can be objective, independent of individual perspectives and experiences, and the extent to which it is shaped by these factors.

Axiology

Axiology addresses decisions of value or ethics in research (Finnis, 1980), defining right and wrong behavior (Finnis, 1980). It focuses on ethical considerations in research proposals.

Positivist axiology holds that the aim of science and technology is to discover objective facts and laws. The evaluation of these facts and laws should be based solely on their empirical accuracy and not on any subjective or personal values. In postpositivism, values are seen as subjective and culturally relative, but they can still play a role in shaping scientific inquiry and knowledge

production. Pragmatist axiology holds that values and goals are not fixed or absolute, but are shaped by human interaction and experience, and are continually evolving. Constructivist axiology emphasizes the role of personal and cultural values in shaping individuals' beliefs and actions. The axiology of interpretivism affirms that values and value systems are culturally and socially constructed shaped by human interpretation and in flux as individuals and societies engage in the ongoing sense-making and interpretive process. The axiology of the advocacy/participatory paradigm values collaboration, active participation, diversity, social justice, and the empowerment of marginalized individuals and communities.

Major characteristics of axiology

Types of values: It categorizes values into different types, such as moral values, aesthetic values, and practical values.

Objectivity vs. subjectivity: It considers the extent to which values are objective, independent of individual perspectives and experiences, and the extent to which they are shaped by these factors.

Normative ethics: It is closely related to normative ethics, which deals with questions about what actions are right or wrong and what moral principles should guide human behavior.

Meta-ethics: It is also connected to meta-ethics, which deals with questions about the nature of moral judgment and the foundations of moral reasoning.

Value systems: It examines different value systems, such as utilitarianism, deontology, and virtue ethics, and considers their relative strengths and weaknesses.

Value theory: It encompasses value theory, exploring what confers value and the relationship between values and other entity properties.

Methodology

Methodology, within a research paradigm, addresses the "how" of inquiry (Mertens, 2010), guiding systematic investigation (Keeves, 1997) and knowledge acquisition (Moreno, 1947). It pertains to understanding and employing methods (Guba & Lincoln, 1994) to answer research questions. Methodological assumptions shape research (Alharahsheh & Pius, 2020), focusing on research strategy and data collection (Igwenagu, 2016). It's the philosophy guiding inquiry (Crotty, 2003), informed data production (Ellen, 1984), and the design informing research methods (Crotty, 1998). It involves discussing how research should be undertaken (Grix, 2004).

The methodology of positivism emphasizes the importance of empirical evidence, the scientific method, and a commitment to objectivity and impartiality in research. The positivist approach to research stresses the importance of observable facts, quantitative data, and the scientific method. The methodology of postpositivism is a more nuanced and flexible approach to research than positivism. While it recognizes the importance of empirical evidence and the scientific method, it also acknowledges the influence of subjective factors, such as values and beliefs, on the research process. The pragmatist methodology is to focus on the practical outcomes of a particular idea or

action, rather than just its theoretical or ideal aspects. The methodology of constructivism values active and collaborative learning, personal reflection, and the creation of supportive and engaging learning environs. The interpretivist methodology emphasizes the importance of understanding human experiences, meanings, and perspectives, and seeks to uncover the subjective and culturally constructed nature of these experiences through the use of qualitative and hermeneutic methods. The methodology of interpretivism may involve the use of hermeneutic or interpretive methods, which seek to comprehend and interpret the sense of human experiences and perspectives. The methodology of the advocacy/participatory paradigm values collaboration, active participation, and the inclusion of diverse perspectives, and seeks to empower marginalized individuals and communities to shape their own reality and bring about positive change.

Chief characteristics of methodology

Some key characteristics of methodology are as follows:

Defined process: It provides a well-defined and structured process for carrying out a specific task or solving a problem.

Repeatability: It is repeatable, meaning that the same process can be followed multiple times to achieve the same result.

Flexibility: It is flexible, allowing for adjustments and modifications to be made to accommodate changes in circumstances or requirements.

Objectivity: It is objective and unbiased, avoiding subjective interpretations or personal opinions that could lead to inconsistent results.

Documented: It is thoroughly documented, with clear and concise instructions for each step of the process, to ensure that it can be easily followed and replicated by others.

Measurable: It is designed with clear objectives and outcomes, and the progress towards these goals should be measurable, allowing for regular assessments of the methodology's effectiveness.

Adaptability: It is adaptable to changing circumstances, and should be updated as needed to reflect new developments or best practices.

Table 1: Major Research Paradigms and Characteristics of Their Constituents

Research Paradigms	Constituents of Research Paradigms			
	Ontology (Reality)	Epistemology (How to Know Reality)	Axiology (Value)	Methodology
Positivism	A single objective reality	observations and experimentations	Value free	Quantitative methods

Post-positivism	Objective reality influenced by our subjective lenses	Incomplete objectivity and subject to human interpretation and bias	Potential for the researcher bias	Mixed methods
Pragmatism	Multiple realities influenced by human experiences.	Practical and actionable knowledge	Relative and dependent on the situation	Flexible methods based on the requirements of the research questions
Constructivism	Socially constructed	Co-created by researchers and participants	The researcher's role in shaping knowledge	Qualitative methods
Interpretivism	Subjective and experienced through interpretations	Identifying the meanings people give to things	Recognizing diverse perspectives of both researchers and participants.	Qualitative methods
Advocacy / Participatory Paradigm	Multiple realities based on individual and group experiences	Co-created through collaboration and dialogue between researchers and participants.	Values are central and influence the research process	Participatory methods

Conclusion

A research paradigm is a conceptual framework guiding a study's design, execution, and interpretation. Key research paradigms are positivism, postpositivism, pragmatism, constructivism, interpretivism, and advocacy/ participatory paradigm. Positivism values objectivity, empirical observation and universal laws, often used in natural sciences. Post-positivism recognizes limitations of positivism and seeks to incorporate subjectivity and constructivism, often used in social sciences. Pragmatism focuses on practical utility and problem-solving, viewing knowledge as a means to solve problems. Constructivism views knowledge as a constructed reality shaped by individual experiences, beliefs, and perspectives. Interpretivism prioritizes understanding human experiences, perspectives, and meanings, and values subjectivity

meaning and context. Advocacy/participatory paradigm views research as a collaborative and empowering process aimed at promoting social change. Ontology, epistemology, axiology and methodology are the common constituents of research paradigms in which ontology explores the nature of existence, epistemology examines the nature of knowledge, and axiology deals with values and value judgments, and methodology focuses on the systematic analysis of research methods. The choice of research paradigm informs the overall design and approach of a study, and understanding different paradigms helps researchers make informed decisions and critically evaluate research.

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