Perspectives on Research Paradigms:

A Guide for Education Researchers

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Abstract

This scholarly article undertakes a thorough exploration of current theoretical perspectives within the domain of educational research, concentrating specifically on the positivist, interpretive, and critical paradigms. It commences by establishing a comprehensive understanding of research within the larger context, with a particular spotlight on educational research and its central paradigms. The manuscript subsequently provides a concise yet illuminating examination of these three primary research paradigms, shedding light on their ontological, epistemological, and methodological dimensions. Additionally, it conducts an evaluation of each paradigm based on criteria pertinent to rigorous research, thereby accentuating their individual merits and shortcomings.

The positivist paradigm, firmly grounded in empiricism, places a strong emphasis on empirical evidence and the systematic application of the scientific method to reveal objective truths and establish causal relationships. It is renowned for its unwavering dedication to objectivity, quantifiability, and the potential for broad generalization, frequently making use of hypothesis testing and experimental methodologies. Despite facing criticism for its potential to oversimplify intricate phenomena, positivism continues to maintain its predominance across a wide array of fields.

The interpretive paradigm, firmly rooted in hermeneutics, places a primary emphasis on the investigation of subjective meanings and the realm of human experiences. This paradigm utilizes qualitative research methods to deeply explore the intricacies of individuals' perspectives, recognizing researchers as active interpreters of the collected data. Interpretive research emerges as highly valuable in the examination of areas such as cultural practices, the development of identities, and social interactions.

The critical paradigm, drawing from interpretive principles as its foundation, rigorously

examines power dynamics and matters of social justice. Through the use of qualitative research methods, it thoroughly explores structural inequalities and issues related to equity, demonstrating particular relevance in situations that demand a comprehensive assessment and active intervention in systemic injustices.

Keywords: Research paradigms, positivist paradigm, interpretive paradigm, critical paradigm

1. Introduction

This paper seeks to elucidate contemporary theoretical stances in research, specifically within educational research. It commences by defining research in a general context, with a particular focus on educational research and its principal paradigms. It illuminates three primary research paradigms: positivist, interpretive, and critical paradigms, offering a concise comparison and contrast. Furthermore, it addresses the ontological, epistemological, and methodological aspects of each paradigm. Additionally, the paper assesses each paradigm against the criteria of robust research, highlighting their respective strengths and weaknesses.

Positivist Paradigm: The positivist research paradigm, rooted in empiricism, prioritizes empirical evidence and the scientific method for uncovering objective truths and establishing causal relationships (Marsh,2002). Researchers in this paradigm strive for objectivity, quantifiability, and generalizability, typically employing hypothesis testing, experimental designs, and extensive surveys (Bryman, 2016). Positivism faces criticism for potentially oversimplifying complex phenomena and disregarding subjective experiences (Guba & Lincoln, 1994). However, it endures as a dominant approach, particularly in the natural sciences and quantitative social research, owing to its rigorous and replicable methods, applied in diverse fields, from medical outcomes to educational intervention effectiveness (Flick, 2002).

Interpretive Paradigm: The interpretive research paradigm, rooted in hermeneutics, prioritizes the exploration of subjective meanings and the intricacies of human experiences. Scholars within this paradigm employ qualitative methods like interviews, ethnography, and content analysis to delve into the nuanced narratives and contexts shaping individuals' perspectives (Denzin & Lincoln, 2011). Interpretive research proves valuable for examining diverse phenomena, such as cultural practices, identity development, and social interactions (Creswell & Poth, 2017). This approach acknowledges researchers as active participants and interpreters of data, evolving to incorporate contemporary methods like autoethnography and narrative inquiry (Bochner & Ellis, 2003).

Critical Paradigm: The critical research paradigm explores power dynamics and social justice concerns. While also rooted in interpretive principles, it delves into structural inequalities and issues of equity. This paradigm employs qualitative methods to uncover and address societal disparities (Lather, 2006). Critical research is particularly relevant in contexts where systemic injustices need examination and intervention (Kincheloe & McLaren, 2005).

These paradigms represent distinct research approaches, shaped by differing epistemological and ontological foundations.

2. Nature of Research

Research is a common term that scholars use in different specialties to reflect their own knowledge, discussion and arguments about a certain issue. Each field defines research differently according to its unique views and interpretations. Such kind of diversity has been reflected on the completing definitions of research that have been suggested by many researchers. Each one reflects the researcher's stance towards research. For example, Bassey defines research as "a systematic, critical and self-critical inquiry which aims to contribute to the advancement of knowledge" (1990, p.35). Moreover, Ernest defines research as, "a systematic enquiry with the aim of producing knowledge" (1994:8). These two definitions have one aspect in common; generating and developing knowledge that was not known before. However, certain conditions need to be addressed carefully for conducting and solidifying research inquiry. Consequently, researchers argue that an inquiry needs to be associated to and developed on existing theories, follow well-established procedures, and enhance the theoretical knowledge (Ernest, 1994 and Cohen et al., 2007).

Most importantly, the researcher has to scrutinize all the research phases and adopt a self-critical stance toward his/her own decisions during the research procedures. I agree with this view because employing these essential principles could improve the different research inquiry practices that attempt to explore and develop knowledge in different areas of research, particularly educational research. However, these definitions did not refer to finding appropriate techniques to disseminate and transfer the obtained knowledge. Therefore, enhancing the body of research with its different arenas requires strong dissemination of knowledge locally, nationally, and internationally.

The nature of research encompasses various methodologies and approaches, vital for advancing knowledge. Recent studies emphasize the importance of mixed methods research, blending quantitative and qualitative techniques. Additionally, interdisciplinary research is gaining prominence, fostering innovation at the intersection of diverse fields.   Researchers increasingly recognize the significance of ethical considerations, highlighting the need for responsible and transparent research practices (Jones, 2021). These trends underscore the dynamic and evolving nature of research in contemporary academia.

3. Nature of Educational Research

Educational research is mainly interested in investigating issues such as human learning, educational institutions, teaching methods, learning achievement and evaluation (Pring, 2000 and Wellington, 2000). Moreover, it addresses the social, psychological and cultural contexts involved in any educational institution (ibid). I agree with the previous notion as it suggests that educational research deals with emerging problems and tries to find effective

solutions to them. It could predict the contingent obstacles that may hinder the educational process. In order to achieve these aims of educational research, choosing the appropriate research paradigm, methodology, and methods of data collection and analysis are crucial steps that deserve due attention because they   can facilitate conducting a sound investigation that can yield insightful findings to serve the purpose of any educational research. Since the emerging educational problems reflect different contexts, beliefs, and educational perceptions and are caused by different factors, then different research paradigms are required to serve this purpose which will be spotlighted in the next section.

The character of educational research is continually adapting to changes in teaching methodologies. Contemporary academic literature indicates a growing focus on action research, encouraging educators to actively participate in finding practical solutions for classroom challenges (Cochran et al.,2022). Furthermore, substantial attention has been directed towards the examination of digital and online learning environments, exploring their effects on student engagement and academic outcomes. Nevertheless, critics contend that the field must confront issues related to bias and inclusivity, advocating for the adoption of culturally sensitive research methods (Ladson-Billings, 2021). These discussions underscore the fluid nature of educational research in the present era.

4. Definition of Research Paradigm

Kuhn was considered the main advocate for the wide use of the term paradigm. He defines it as "An integrated cluster of substantive concepts, variables and problems attached with corresponding methodological approach and tools" (1962, cited in Flick, 2009: 69). Ernest provides one more simple and brief definition of a paradigm, which gives a general notion about it. However, the definition does not tackle its intricate nature. He defines it as "an overall theoretical research perspective" (1994, p.19). In my view, a paradigm is a theoretical plan according to which researchers work. My view comes in line with Guba and Lincoln definition of a research paradigm who viewed it as, "a basic system or worldview that guides the investigator" (1994, p.105).   Yet, Punch seems to put more emphasis only on the social feature which may reflect his main area of interest. Therefore, he defines it as "a set of assumptions about the social world, and about what constitutes proper techniques and topics for inquiry" (1998, p.28). I prefer this definition and it seems persuasive as these assumptions are the logical positions that guide and inform researchers to carefully establish and understand their own assumptions of reality. Consequently, she/he could seek a systematic inquiry to discover the truth.

Research paradigms play a crucial role in guiding research directions. In recent research conducted by Smith (2009), it is emphasized that the positivist paradigm predominantly influences quantitative research, whereas Jones (2021) accentuates the rising preference for constructivist paradigms in qualitative research. These paradigms significantly impact research design, data gathering, and interpretation, underscoring their pivotal role in shaping research approaches.

In the following section, I shall discuss the positivist paradigm and its main components.

5 Positivist Paradigm

The positivist paradigm deals with as a scientific method or scientific research. This paradigm reflects the views of the French philosopher August Comte in the 19th century. It assumes that knowledge can be gained through main tools, such as observation, experiment and various measurements, to anticipate and control the surrounding forces of human beings (Golby & Parrott, 1999 and O'Leary, 2004). Therefore, positivist researchers adopt the scientific methods used in the natural science world such as physics to study the social world. They claim that the social world can be studied objectively (Mertens, 2005). This concept has been reflected in their aim to "seek generalization and hard quantitative data" (Wellington, 2000, 15). According to Cohen et al (2007), the positivist paradigm is mainly connected with terms such as empiricism and quantitative research. Hence, this research perspective maintains that an inquiry needs to be structured, controlled, and empirically established which can accommodate any upcoming theories and future understandings (Mackenzie and Snipe, 2006).

The positivist paradigm, grounded in empirical observation and quantification, exerts a lasting influence on contemporary research. It underscores the importance of objectivity, causality, and the belief that reality can be comprehended through systematic measurement (Smith, 2009). Its key elements encompass the quest for universal laws, deductive reasoning, and a reliance on quantitative data. Nevertheless, criticisms of positivism endure, with detractors contending that it oversimplifies intricate social phenomena, disregards subjective experiences, and may not be universally applicable (Guba & Lincoln,1994). Despite these reservations, positivism remains pertinent, particularly in fields like natural sciences and psychology, where rigorous experimentation and measurement hold paramount importance.

In conclusion, the fundamental components of the positivist paradigm, emphasizing objectivity and quantitative data, persistently shape research methodologies. Nonetheless, researchers must remain mindful of its limitations and consider alternative paradigms when they are more suitable.

5.1 Ontology

Ontology is used to refer to the nature of being. In other words, it explores 'what is it to be known'. I have noticed that addressing the nature of being is a common feature among most of the suggested definitions in the literature. For example, Crotty defines it as "the study of being" (2003, p.10). Blaikie suggests one more broad definition, stating that ontological claims are "claims and assumptions that are made about the nature of social reality, claims about what exists, what it looks like, what units make it up and how these units interact with each other" (2000, cited in Grix, 2004, p.56). Generally, it could be said that ontological assumptions are mainly interested in addressing our beliefs regarding what forms our social reality.

The ontological stance of the positivist paradigm is grounded on realism which claims that reality can be found out there and can be accessed through studying the laws of nature (Guba and Lincoln, 1994). According to this paradigm, reality can be approached through objective means regardless of an inquirer's involvement. Therefore, the positivist researchers' stance of social reality is that it is external to individuals, and it forces itself on their perception. They claim that the social reality is observable, measurable and objective. This kind of reality from their viewpoints is governed by the same laws which are applicable to all individuals. This reality can be discovered by adopting the scientific method. Positivist researchers argue that social reality exists autonomously of individuals and impresses itself upon their perception. This perspective presupposes an objective, external reality that can be examined through empirical observation and measurement, giving precedence to objectivity over subjective experiences and interpretations. Detractors suggest that it might oversimplify the intricacies inherent in social phenomena. This approach can be viewed in the scientific literature that the inquirers or investigators can study human phenomenon from the scientific point of view as an independent reality regardless involving human knowledge (Cohen et al, 2007, Grix, 2004 and Crotty, 2003).

5.2 Epistemology

Epistemology refers to the nature of knowledge (Crotty, 2003). It is concerned with questioning the sources of our knowledge and the justification we provide for the assumptions. In other words, it addresses the relationship between the knower and the known (Grix, 2004).   Epistemology has two main positions, absolutist and fallibilist (Ernest, 1994). The former views truth as a reachable target, whereas the latter has a sceptical stance toward knowledge. More specifically, no certain knowledge can be achieved by humans and knowledge is subject to error and change (ibid).

Epistemologically, the positivist paradigm is grounded in objectivism (Guba and Lincoln, 1994). This paradigm claims that objects exist independently and mechanically interact with their environment without any involvement of a researcher. Hence, the positivist inquirer's role is expected to be as an observer who needs to be irrelevant to the phenomenon under investigation (Cohen et al, 2007).

Detractors of a single ontological standpoint contend that adopting a pluralistic approach might be more suitable given the intricacy of research phenomena (Jones, 2021). They advocate for a nuanced perspective capable of incorporating various ontological viewpoints within a research inquiry, enabling a more comprehensive exploration of diverse perspectives.

Moreover, recent advancements in the field of philosophy of science are shaking the foundations of conventional ontological beliefs. Quantum physics, for instance, prompts inquiries into the essence of reality, challenging established ideas of objectivity.

In summary, ontology continues to hold a pivotal role in research methodology. Recent literature emphasizes the persistent debate between realist and constructivist viewpoints, highlighting the necessity for a pluralistic approach to accommodate the multifaceted nature

of research phenomena. Additionally, evolving scientific paradigms consistently question traditional ontological assumptions, expanding the discourse on the nature of reality. Researchers should remain attuned to these discussions to inform their ontological decisions and ensure the rigor and relevance of their research.

5.3 Methodology

Adopting positivist research inquiry is associated with a quantitative methodology that contains two vital forms: experimental and non-experimental research methods. The purpose of this approach is to inquire and investigate the integral relationships among variables that are constant in space and time. This approach is mainly concerned with the inquirer's control and handling of the conditions separately, to understand the phenomenon in accordance with his/her personal point of view (Cohen, et al., 2007). On the contrary, the non-experimental approach takes a different route, particularly in correlational inquiry, the inquirer is not interested in manipulating the independent variables. Rather it is mainly concerned with an inquirer's association with the variables (ibid). Personally, I believe that this association restricts the researcher from generalizing the results based on cause-and-effect inquiry. As a matter of fact, this is because of the researcher's possible assumption that some unknown justifications can be a cause of the gained results.

In the positivist paradigm, various data collection techniques are employed such as tests, interviews (structured/semi-structured), and questionnaires (especially closed-ended). The researchers can employ their discretion to utilize any of the tools for data collection. Afterwards, the data is analysed statistically (Creswell, 2009, Bryman, 2016 and Creswell, 2007).

To ensure the rigor of the qualitative research, it is vital to address reliability and validity in a research study. Cohen et al. (2007) stress that validity is a pre-condition to the reliability, but reliability is not a prerequisite for validity.   However, both concepts are difficult to define and understand by many researchers (Wellington, 2000). Reliability is concerned with whether there is consistency in test administration and scoring (Creswell, 2009). With respect to validity, it refers to whether one can draw meaningful and useful inferences or conclusions from scores on a particular instrument (ibid). Bryman (2016) maintains that three main factors are essential to be considered to determine the reliability of the research results which are stability, internal reliability, and inter-observer consistency. Stability refers to checking that the obtained results are linked to the measurement of a sample and not fluctuated. Internal reliability refers to examining whether the participants' responses to any inquiries are consistent with their responses to the other checking inquiries.   Inter-observer consistency refers to involving more than one examiner in categorizing the data or recording of observation. All members of the research group must agree on one standard of dealing with issues related to data gathering, analysis or presentation. With regard to validity, in the literature, there are different kinds of validity. However, due to the limited scope of this paper, I shall only discuss the internal and external validity. The former is interested in providing an accurate account of the issue or the explored matter through the collected data. The latter focuses on the possibility of generalizing the obtained results beyond the scope of the

research context (Bryman, 2016 and Cohen et al, 2007).

However, I personally think that reliability and validity can be affected by respondents' efforts to defend their interests. For instance, respondents may feel worried when requested to respond to questionnaires and interviews. Consequently, they might hide their intended responses and provide responses that can be convenient for both the participant and the researcher. In addition, reliability and validity can be influenced because of participants' hidden agendas. It is possible that they may respond to a research test to manipulate the results just to force the police makers to take some specific steps in their institutional policies. Moreover, it is also possible that test items could be beyond the level of participants' understanding contained in questions or studies of non-experimental research (e.g., correlation studies) that can result in untrustworthy research interpretations and results. These situations indicate how challenging it is for positivist researchers to accomplish reliability and validity. They also shed light on the need to know about the factors that could influence establishing them in their research papers in order to deal with them competently.

5.4 Sampling

The quality of research is not judged merely by the suitability of methodology and instruments. It also relies on the suitability of the selected sampling approach by the researchers (Creswell. 2009). The positivist research method adopts probability sampling, more specifically random sampling. This indicates that all potential participants have equal chances of participating in research.   Also, the specific features of the big population need to be reflected in the sample, such as age, gender, ethnicity, education, and academic capability. Most importantly, the sample has to be reasonably representative. In other words, it should be big enough to give a good representation of the whole population (Dornyie, 2007).

5.5 Features of the Positivist Paradigm

The scientific paradigm faces criticism from various standpoints. First, the analysis procedures introduced by various social inquirers seem to be unnatural and superficial (Cieourel, 1964 cited in Bryman, 2016). Moreover, there is a tendency to fail to provide a clear distinction between people and social sciences from a natural science perspective. Therefore, it treats human beings like any other natural object (Bryman, 2016). Furthermore, it assumes that generalization can be applied in social sciences. I disagree with this assumption, and it seems inapplicable as human beings have different cultures, and beliefs and live in different contexts. In addition, scientific researchers claim that their research is value-free.   I disagree with this assertion as I believe it is questionable in terms of the reason behind conducting it.   Practically, there must be a value or an advantage from a research study.

The positivist paradigm, firmly grounded in empirical observation and quantification, has exerted a significant influence across various research domains. It places a strong emphasis on the pursuit of objective and verifiable knowledge through systematic measurement (Smith & Hodkinson, 2009). Central tenets of the positivist paradigm encompass the search for universal laws, deductive reasoning, and a reliance on quantitative data to facilitate objective

analysis.

One of the core strengths of positivism resides in its capacity to yield precise and replicable outcomes, especially in the natural sciences. It furnishes a structured framework for hypothesis testing and employs rigorous statistical methodologies, thereby bolstering the reliability of research findings.

However, detractors contend that the positivist paradigm oversimplifies intricate social phenomena and disregards subjective experiences. It may not be well-suited for fields like the social sciences, where the importance of context and interpretation is paramount (Guba & Lincoln, 1994). Additionally, criticism has arisen regarding the potential for the positivist paradigm to perpetuate power imbalances and cultural biases.

Furthermore, current scholarship underscores the constraints associated with adopting a single ontological perspective. Research phenomena frequently exhibit multifaceted characteristics, rendering a uniform approach insufficient for capturing their complexity. Researchers are increasingly encouraged to embrace a pluralistic stance that accommodates a variety of ontological viewpoints within a given research inquiry (Jones, 2021).

In conclusion, while the positivist paradigm offers valuable tools for conducting rigorous research, it is not exempt from limitations. Its strengths in delivering objective and replicable results render it suitable for specific domains, but its constraints in addressing intricate, context-dependent phenomena underscore the necessity for researchers to critically assess its suitability within their particular research contexts. A pluralistic approach, considering diverse ontological perspectives, may furnish a more comprehensive understanding of research phenomena.

6 Interpretive Paradigm

Constructivism, post-positivism, and naturalism or qualitative research are all terms used to refer to interpretive paradigms. I believe that these competing terms may cause some confusion and misunderstanding, particularly for novice researchers. The interpretive paradigm that is usually associated with Max Weber appeared as a reaction to the positivist one. It rejects the notion that positivist research method is appropriate for studying the social sciences /phenomena. More specifically, it rejects researching human beings as any other natural object. Interpretive researchers advocate that it is inapplicable to adopt a cause-and-effect relationship in social science. Therefore, they tend to investigate participants' perceptions, share their meanings and develop ideas about the investigated phenomenon (Bryman, 2016, Grix, 2004 and Carr and Kemmis, 1986).

The interpretive paradigm, closely linked with Max Weber, emerged in response to the positivist paradigm, particularly within the realm of social sciences. It fundamentally diverges by highlighting the significance of subjective interpretations of human actions, as well as the role of context, culture, and meaning. This paradigm posits that reality is not solely objective and quantifiable; instead, it's shaped by individual and collective

interpretations (Weber, 1904).

Max Weber's concept of "verstehen" or empathetic understanding is central to the interpretive paradigm's core principles. Researchers within this tradition aim to grasp the motivations, values, and perspectives of individuals and societies to elucidate social phenomena (Ghosh, 2010).

This paradigm provides a nuanced approach for comprehending intricate social contexts, where meaning and context hold paramount importance. Critics of positivism argue that it oversimplifies the social landscape by reducing it to quantifiable data, overlooking the intricate tapestry of human experiences and values (Hammersley, 2013).

Modern scholarship consistently reaffirms the relevance of the interpretive paradigm. Researchers employ qualitative methodologies like ethnography, interviews, and content analysis to uncover deeper insights into human behavior and societal processes (Denzin & Lincoln, 2011).

To conclude, the interpretive paradigm, inspired by Max Weber's insights, offers a robust alternative to positivism by concentrating on subjective interpretations of human actions and societal contexts. Its emphasis on comprehending the complexities of human behavior continues to influence contemporary research in the social sciences, providing a more nuanced perspective for the examination and comprehension of social phenomena.

6.1 Ontology

The ontology of the interpretive research paradigm is relativism (Guba and Lincoln, 1994). Relativism is based on the view that individuals construct and interpret reality by considering their ideological and cultural backgrounds. A single event or experience can be understood in different ways and can be multiple explanations and meanings which could be more or less informed or sophisticated. Meanings or perceptions are only objects of thoughts transformed into simple words and they cannot constitute their significance independently from human beings. The idea that meanings or perceptions exist only as products of thought, relying on human interpretation and language, constitutes a fundamental concept within the fields of linguistics and semiotics. As demonstrated by scholars, language serves as the primary medium through which humans formulate and communicate meaning. Although there may be dissenting perspectives, this notion continues to be pivotal in comprehending how communication molds our perception of the world, emphasizing the intrinsic connection between language and human cognition.

According to the interpretive paradigm literature, nature of reality is considered complex, indigenous, specific, and multifaceted. Thus, the researchers consider themselves as a part of the investigated phenomenon (Cohen et al, 2007, Grix, 2004, Crotty, 2003; Guba and Lincoln, 1994).

6.2 Epistemology

Epistemologically, the interpretive paradigm is grounded in subjectivism (Guba and Lincoln, 1994). Knowledge creation is considered a personal issue and exclusive phenomenon that

requires an inquirer to be involved with his/her participants in any social situation. The researchers who adopt the interpretive paradigm have the tendency to influence the phenomenon under investigation and their contribution extends from displaying how individuals interpret the world around themselves to exploiting their interpretations to create social scientific knowledge creation such as developing concepts, theories, and literature trends (Bryman, 2016, Cohen et al, 2007 and Ernest, 1994).

Researchers who adopt the interpretive paradigm have the capacity to impact the subjects they study, a quality known as reflexivity. Their contributions range from elucidating how people perceive their environment to utilizing these interpretations to create social scientific knowledge, including the formation of concepts, theories, and trends in academic literature. This reflexivity presents both advantages and drawbacks. While it enables profound insights, it also introduces subjectivity and the potential for bias (Alvesson & Sköldberg, 2009). Nonetheless, it has substantially enhanced our comprehension of intricate social phenomena and played a role in shaping various theories and concepts.

6.3 Methodology

Interpretive researchers refuse the notion that quantitative methodology can be more appropriate for understanding human beings' behaviors. Therefore, they claim that qualitative methodology with its multifaceted methods seems more suitable for this aim. Qualitative methodology encompasses a wide scope such as phenomenology, grounded theory, ethnography, case study, historical and documentary research, and ethno methodology. First, phenomenology focuses on investigating the experiences and perceptions of various people of a specific phenomenon. It investigates the similarities of participants' experiences of the phenomenon under investigation. For example, a researcher may investigate 30 non-native students' experience of the IELTS writing test. Second, grounded theory is often referred to as a synonym for qualitative research. This term is commonly used in qualitative research. The grounded theory emerges from the phenomenon under investigation, and it develops from the data received from the participants who have experienced certain event or process. Third, ethnography represents the core of the qualitative research enquiry by focusing on the description and analyses of both cultural practices and beliefs of a specific group of participants. In other words, it investigates the influence of cultures on people. For example, an ethnographic study could explore the reading learning strategies of Saudi students in the UK at the English Language Institutes. Fourth, case study is familiar to social research scientists. Who might investigate a case or multiple cases over a period of time and report a case description and case-based themes. For example, a researcher could explore students' perceptions of a newly introduced testing technique. Fifth, historical and documentary research focus on investigating history studies and consider them qualitative in nature, due to fact that it relies heavily on oral and other symbolic sources obtained from ancient cultures. Sixth, Ethno-methodology explores daily life activities and routines. It also tackles how everyday reality is formed and received through daily interpersonal interactions. Their vital focus is on interpreting how individuals perceive social environments (Creswell, 2009, Creswell, 2007, Dornyei, 2007 and Grix, 2004).

The above-mentioned methodologies are often employed for collecting data by exploiting observations (e.g., respondents and non-respondents), questionnaires (open-ended), and different types of interviews (semi-structured, unstructured). For data analysis, researchers usually do not consider statistical analysis in this paradigm.   However, it relies on rendering and explaining the verbal data subjectively (Creswell, 2009, Dornyei, 2007 and Cohen et al, 2007). On the other hand, "quantitative data may be utilized in a way, which supports or expands upon qualitative data and effectively deepens the description" (Mackenzie and Knipe, 2006:3). Furthermore, triangulation (mixed-method), which employs various data collection methods in an inquiry, has become more common in interpretive research in particular. Its purpose is to develop the investigation to obtain more reliable data and to mitigate the chance of biased results. For instance, the qualitative research approach can use a combination of observation and interviews along with questionnaires. In addition, in this type of research, participants' quotes can be exploited to support statistical data (Grix, 2004, Creswell, 2009 and Bryman, 2016).

Regarding sampling, interpretive researchers employ the purposive sampling technique, in order to help them investigate the researched topic more carefully and deeply (Grix, 2004).

Regarding the quality of research, some qualitative researchers tend to utilize reliability and validity in similar ways to quantitative research such as Mouton (1996). (On the contrary, researcher such as Esiner (1991) disapproves of this concept and contents that validity and reliability are unsuitable and unrelated to qualitative inquiry. Responding to this perspective, (Guba and Lincoln, 1994 and Lincoln and Guba, 1985) suggest the following alternative terminology, credibility, neutrality, conformability, dependability, consistency, applicability, transformability, trustworthiness, and transferability. Recently, many qualitative researchers supported and advocated implementing these terms in qualitative research widely in their publications (Bryman, 2016). In general, they believe that adopting these terms could help establish the quality of qualitative research.

6.4 Features of the interpretive paradigm

Interpretive researchers face many aspects of criticism.   For example, scientific researchers criticize them for being too impressionistic and subjective. Moreover, it can be difficult to identify how results can be generalized to other contexts.   In addition, it lacks transparency, because it can be difficult to identify what the researcher did and how he/she reached to his/her conclusion. Furthermore, interpretive researchers reject the causal relationship in social sciences. Such a stance makes it difficult for them to research essential social problems and events that can lead to social change or conflict (Bryman, 2016, Denzin and Lincoln, 1998 and Carr and Kemmis, 1986).

Despite the revealed weakness in interpretive research, I believe that we have to acknowledge its essential strength as well. For example, it has a distinctive feature in understanding human individuality and its ability to reflect their views and perceptions of social reality in a meaningful way.

In the next section, I will discuss the critical paradigm and its main elements.

7. Critical Paradigm

The prominent advocate scholar of this paradigm is Hebermas, who participated in the development of the approach of investigation and action in the social sciences (Crotty, 2003). Critical theorists refuse both positivist and interpretive research and think they only address minor and insignificant events. Consequently, the critical paradigm research focuses on empowering people by changing their social, political, and cultural context. They hope to bring out vital changes that deserve equality and justice. The main objective of educational research is practical advocating changing whole societal and educational structures (Alwan, 2007, Crotty, 2003 and Pring, 2000). Practically, investigators' roles are supposed to be 'transformative intellectuals' who help in setting people free from their historical, cognitive, emotional, and cultural settings (Crotty, 2003, Guba and Lincoln, 1994). For example, it seeks to help individuals and institutions produce collective freedom and transform the situations at the workplace based on the individuals' interests (Cohen et al, 2007).

7.1 Ontology

Realism is the ontological stance of the critical paradigm (Guba and Lincoln, 1994). The critical research paradigm claims that reality is tangible and consists of historically situated structures, mainly social and institutional (ibid). The nature of social reality is the readiness for taking any action for change in vital aspects of society, such as social, political, cultural, ethnic, gender, values, and economic through maintaining the attention on power relationships within society to expose the forces of authority and injustice (Crotty, 2003). The notion that the essence of social reality involves a readiness to initiate transformation in fundamental aspects of society, encompassing areas like social, political, cultural, ethnic, gender, values, and economics, all while maintaining a keen focus on the dynamics of power within society to reveal the sources of authority and injustice, finds its roots deep within critical social theory. Eminent thinkers such as Foucault (1978) have underscored the pivotal role of power in molding social reality, illuminating how power structures shape our perception of truth, knowledge, and societal norms.

This perspective encourages a rigorous examination of disparities in power and injustices within society, thereby nurturing the potential for profound change (Honneth, 2014). Through the scrutiny of power relationships, it becomes feasible to challenge oppressive systems and strive for a more equitable and just societal order.

Nonetheless, detractors argue that this approach might oversimplify the intricacies of social reality and neglect the possibility of unintended consequences in the pursuit of transformation (Archer, 2012). Despite these criticisms, the notion that comprehending and addressing power dynamics stands as a central tenet in contemporary social theory and activism, crucial for reshaping society, perseveres.

As a result, critical researchers hope to bring out vital changes that speared equality and justice. For example, it seeks to help individuals and institutions to produce collective freedom and to transform the situations at the workplace based on the individuals' interests (Cohen et al, 2007).

7.2 Epistemology

Epistemologically, the critical paradigm is grounded on subjectivism that claims knowledge is constructed from social settings where values are recognized and appreciated (Crotty, 2003 and Denzin and Lincoln, 1998). Thus, critical researchers conceive that human actions are led by the sense they make from the context (Ernest, 1994). Practically, critical investigators and participants are expected to be dynamically involved and connected in the practical conduct of the research, which ultimately affects the concept and procedure of the study under investigation. Therefore, the findings are value-mediated (Denzin & Lincoln, 2011and Creswell, 2003).

The idea that critical researchers and participants should actively engage and maintain close connections throughout the practical execution of research significantly influences how the study is designed and conducted. This approach aligns with participatory research paradigms (Minkler & Wallerstein, 2008), which underscore the importance of collaborative involvement between researchers and participants. It recognizes the valuable insights and expertise that participants contribute to the research process. While it enhances our understanding of the phenomenon under investigation, this approach can also disrupt traditional research hierarchies, promoting a more inclusive and democratic research environment. Nevertheless, it necessitates careful management of power dynamics and ethical considerations (Cooke & Kothari, 2001).

7.3 Methodology

According to Cohen et al (2007), the critical paradigm employs two methodologies, ideology critique and action research. The former is employed by people of power to encourage and legitimize their specific differences or common interests at the cost of weakening the other groups. The latter is an effective means for introducing change and development at an indigenous level in various sectors. Furthermore, it focuses on gathering data to get a clearer understanding of educational practices and developing students' educational achievement outcomes by incorporating reflective practices and successful positive developments in educational environments (Mills, 2003). In addition, it focuses on forming an association between research, teaching practice, and teachers/educators as a vital step for conducting any piece of research at school (Dornyie, 2007). I agree with this notion, however, many teachers do not have enough experience in conducting sound research. Therefore, they need to work in collaboration with other experienced researchers. Both groups can collaborate equally and efficiently in different research projects in order to make positive changes in educational environments.

Critical researchers can use both qualitative and quantitative methods. However, they focus more on qualitative research design.   Also, they can adopt triangulation, which means using more than one method in their study. This may make their findings appear more valid and reliable, especially in addressing the social context world (Mertens, 2005).

With respect to sampling, critical theorists also employ purposive sampling to help them introduce the targeted changes for which they struggle.

7.4 Features of the critical paradigm:

The critical paradigm has some weaknesses. Critical theorists aim to emancipate people in societies in many fields. Critical theorists from diverse fields are driven by the goal of liberating individuals within societies. Founded on the contributions of intellectuals like Theodor Adorno, Herbert Marcuse, and Max Horkheimer, critical theory is dedicated to unveiling and contesting systems of oppression, inequality, and injustice (Horkheimer,1982)**.** Through the examination of power structures, societal norms, and prevailing ideologies that restrict individuals, critical theorists' endeavor to empower people, enabling them to attain greater self-determination and liberty (Morrow, 1994). This approach finds notable prominence in disciplines such as sociology, education, and political science, where scholars actively seek to shed light on and reshape the societal conditions that impede human well-being and collective welfare.

The critical research paradigm encounters a range of challenges and critiques that have evolved over time. One notable challenge involves the perception that it primarily engages in critique without offering concrete solutions, leading to accusations of impracticality. Critics contend that critical researchers excel at identifying issues and power imbalances but may struggle to present viable remedies.

Another criticism pertains to the potential for bias in critical research, as researchers' perspectives can influence the interpretation of findings (Smith & Hodkinson, 2009). Maintaining objectivity and minimizing researcher bias pose significant challenges within the critical research framework.

Furthermore, some scholars argue that the critical paradigm can become overly theoretical, potentially disconnecting it from practical, real-world applications and limiting its societal impact (Guba & Lincoln, 1994).

I believe that the researchers have not suggested any clear guidance or instructions that consider the political, cultural, and belief differences in societies which could help people introduce the change effectively. Moreover, it has one more vital weakness, which is that some critical theorists who seek to introduce changes in political policies can be motivated by some obscured plans or aims to inspire different groups of people for radical social changes. Once the change takes place, they will try to achieve it regardless of people's needs and interests.

Nevertheless, despite these challenges and critiques, the critical paradigm remains a valuable approach for addressing power imbalances and social injustices in both research and society at large. Critical researchers must continually address these concerns and refine their methodologies to enhance the effectiveness of their work.

8 Conclusion

From my perspective, the selection of a research paradigm should be intricately tied to the specific characteristics of the research area. Diverse paradigms offer distinct lenses through

which to examine phenomena. However, it is vital to acknowledge that no solitary paradigm can comprehensively address all research scenarios. Each paradigm possesses its intrinsic strengths and limitations, rendering it more suitable for certain research contexts. Researchers must conduct a meticulous evaluation of their research inquiries, objectives, and the philosophical foundations that underpin their work. Acknowledging that no individual research paradigm can fully encompass all research scenarios holds significant importance. This recognition emphasizes the inherent constraints present within any research approach, underlining the necessity for a discerning and context-tailored choice of paradigms. This awareness motivates researchers to adopt a pluralistic viewpoint, where they integrate various paradigms or methodologies to attain a more comprehensive grasp of intricate phenomena. Additionally, it fosters modesty when confronted with the intricate nature of the research landscape, discouraging rigid adherence to a single paradigm. Nonetheless, some critics contend that this realization might introduce methodological perplexity or create ambiguity in research design.

Furthermore, interdisciplinary research often necessitates the fusion of multiple paradigms to attain a comprehensive understanding of intricate phenomena. Therefore, the decision regarding a research paradigm should be a deliberate, context-sensitive choice rather than an indiscriminate one-size-fits-all approach.

As a result, I advocate for researchers, particularly those new to the field, to maintain an open-minded perspective regarding the potential merits of each paradigm and to be amenable to the integration of various methods and methodologies. This approach empowers us to harness the advantages of one paradigm while mitigating the shortcomings of another, ultimately enhancing the credibility and robustness of our research findings.

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