

## Some Philosophical Paradigms and their Implications in Health Research: A Critical Analysis

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### Abstract

*There are five common philosophical paradigms used in the research and they are: Positivism, Post-Positivism, Interpretivism, Criticalism and Post modernism. Each paradigm has different research methods and analyses. The aim of this paper is to reveal the philosophical underpinning of Positivism, Post-Positivism, Interpretivism, Criticalism and Post modernism paradigms in health education research. In this review, each paradigm has been explained properly with reference to health education research based on the literature reviews available in peer-reviewed academic articles and books. This paper helps researcher especially health education researcher to identify paradigm and their implication in health education. Positivism is a science-based empirical method which yields singular reality used in scientific research. Post-positivism deal with multiple reality which asserts that every theory is revisable and that is used in social science especially in quantitative research. Interpretivism is the study of social phenomena to find out the hidden reality which is within the society and it is one of the main philosophies of qualitative research. Criticalism is considered one of the best methods to use in health education research to liberate people from social injustices through consciousness gained through health education. Post-modernism rejects the all-existing assumptions, beliefs and values and give an emphasis on qualitative research method that is appropriate to carry out the research study.*

**Keywords:** Criticalism, Interpretivism, Positivism, Post-modernism, post-positivism, Research paradigm

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### Introduction

It is debated for years that which research paradigm is suitable for particular research. Different paradigm adopts different research methodologies. Some researchers believe in positivism and post-positivism and emphasize quantitative research method. They assume that soft data aren't data because data cannot be quantified (Miles & Huberman, 1994; Turyahikayo, 2014). But some researchers believe in people perception, feeling, experiences etc. and they assert that soft data cannot be quantified and cannot be analyzed using quantitative method (Pope et al., 2000). Therefore, they emphasize interpretivism and Criticalism paradigm. In addition, Post-modernists also believe in qualitative research method. It supposes that qualitative research method through in-depth investigation deconstruct of current phenomena and reveal the new realities in society (Saunders et al., 2019). Some researchers give focus on a particular paradigm and emphasize such paradigm but this review supposes that each worldview can be used in health education research according to needs. Positivism, Post-positivism, Interpretivism, Criticalism and Post-modernism and how they can be applied in health education are described accordingly.

### Aim

This article aims to synthesize the philosophical context and core principles of Positivism, Post-positivism, Interpretivism, Criticalism and Post modernism and their implication in health education research. This study helps to bring out the research studies and its association with those philosophical perspectives, lays out philosophical paradigms and reflect further research plans.

### **Positivism**

Positivist theory was propounded by Auguste Comte (1798-1857). It is a science-based empiricist method which is designed to yield pure data and facts (Saunders et al., 2019). “Comte’s position was to lead to a general doctrine of positivism which held that all genuine knowledge is based on sense experience and can be advanced only by of observation and experiment” (Cohen et al., 2007, p.9) . This method is based on facts/objectivity and single reality, and it assumes that the reality is observable, measurable, predictable, testable and consistent in cause and effect (Park et al., 2020). Positivism cannot study of opinions, beliefs, feeling and assumptions which are subjective studies that we gain in non-scientific ways (Neuman, 2008).

Positivist social science is an organized method of integrating reasoning with a reliable empirical observation of individual behavior, to discover and verify a series of possible causal laws that can be used to forecast general human activities (Neuman, 2008). This is the philosophy where a hypothesis is made using deductive method, value free and tested using scientific method (Ryan, 2018). “Positivists conduct research in order to observe, measure, and predict empirical phenomena and build tangible, material knowledge. They strive for research to mirror reality – to represent clearly what is being examined” (Tracy, 2013, p. 39).

Positivism is pure quantitative research mostly conducted in natural physics and medical science. So, it may not applicable in health education research. Science-based quantitative research methods formulate hypothesis from deductive method (Holden & Lynch, 2004) but when exact problems are unknown for researcher in in-depth in health research, then surficial studies are necessary to know basic things (Lin ,1998). Health education research using qualitative research method’s tools like observation, monitoring, interview, focus group discussions are important and are to be used to find out the unknown research problem and formulate the hypothesis for the quantitative based health research.

The science paradigm is aimed at predicting and generalizing, so often quantitative data generation approaches include structured experiments, closed questionnaires and explanations of phenomena by means of standard observing instruments (Pring, 2000a). Positivists have contributed to understanding philosophy, adopted high standards of rigor and attempted to formulate methods which yield commonly accepted results (Ashby, 1964). Therefore, Positivism, scientific-based philosophy, can be used in scientific research not in social science research. It is because social science research is based on relativism. Relativism is the view that reality is subjective and differs from person to person (Guba & Lincoln, 1994). So, it is not good for health education research. Some say that positivist quantitative research approaches don't pay enough attention to people's lived experiences. (Bryman, 2001; Rubin & Rubin 2005). People's experiences, according to sociologists, are complicated, subjective, and anchored in specific social and historical circumstances (Kalekin-Fishman, 2001). Therefore, such kind of soft data are not suitable to analyze and conclude the finding using quantitative research method. So, it would not be better Positivism paradigm in health education research.

### **Post-positivism**

Post-Positivism is the doctrine of knowledge through perception, belief, culture, thinking and the acceptance of the human being (Scott et al., 2017).“Postpositivist hold a deterministic philosophy in which cause (probably) determines effects or outcomes. Thus, the

problems studied by postpositivist reflect the need to identify and assess the cause that influence outcomes, such as found in experiments” (Creswell, 2014, p. 6). Post-Positivist believed in the non-singular nature of the reality and all the observations are not absolutely accurate, thus the theories are revisable. “Post-positivists believe that humans’ understanding of reality is inherently partial. Post-positivists believe with certainty that reality exists and that there is good reason to try to know it” (Tracy, 2013, p. 39).

Postpositivist stresses the importance of multiple measures and observations to ensure the results are consistent. “The knowledge that develops through a postpositivist lens is based on careful observation and measurement of the objective reality that exist ‘out there’ in the world” (Creswell, 2014, p. 6). It is multi-reality and uses the mixed method - qualitative and quantitative. Post-positivism is a certain pluralism which balances both positivist and interpretivist approaches. It focuses on researching issues in the context of individual.

Educational researchers developed post-positivism as a response to positivism's shortcomings as a paradigm. According to post-positivism philosophy, every theory is revisable. There is no last truth. We cannot prove anything that is true, but we can prove that it isn't untrue, which is called falsification. Theories are revisable means there is multi-reality. “Knowledge is conjectural ...absolute truth can never be found... evidence established in research is always imperfect and fallible...they do not prove hypothesis; instead, they indicate a failure to reject the hypothesis” (Creswell, 2014, p. 6). The quantitative research method which helps to know the social reality and plays an important role based on post-positivism philosophy to find multi-reality in different places in different times and different respondents (Muijs, 2004). So, it is assumed by educational researchers that requirements of social sciences cannot be fulfilled by positivism paradigm. Post-positivism is considered as a best because it is based on observable and empirical analytic facts.

Post-positivism supports performing research in the natural environment, repetition, and the use of several methodologies to get less bias and more objective outcomes in social and educational research (Panhwar et al., 2017). Social and educational phenomena are different in different situation, different from place to place and from time to time. As Philip and Burbulees (2000) asserts that Post positivism is a multidimensional and critical diversity research paradigm that allows socio-educational research to be carried out scientifically by partially providing conclusions and recommendations for further research. Therefore, post-positivism can be underpinned in health education research.

Post-positivism assumes that every theory is revisable and there is no absolute truth or untruth we can prove. Thus, we can say that post-positivism philosophy is used to study the social reality, which is changeable and dynamic in nature. According to Creswell, (2009) “post-positivists seek to understand causal relationships; thus, experimentation and correlational studies are used. However more than sense-data is collected, participants’ perspectives are often sought. Furthermore, as knowledge is tentative, hypotheses are not proved but simply not rejected” (p. 7). According to this philosophy, reality is multiple, which means different researches done in different areas in different time periods in different respondents in the same topic may achieve the different findings. So, social science-based research like qualitative and quantitative research methods can be used in post-positivism philosophy to find new multi-reality in society. The researchers of social sciences and education came with the idea of mixed paradigm combining positivism and interpretivism and making a new paradigm named post-paradigm (Panhwar et al., 2017). It helps to find out research finding from empirical data it means quantitative data as well as people’s perception, feeling and experiences it means qualitative data. Therefore, this research paradigm is useful in social and health educational research as well as other studies or disciplines.

### **Interpretivism**

A major paradigm shift was made with the emergence of interpretivism in the research methodology which believes in qualitative insights into social phenomena because they create meanings (Panta, 2016). The considerable emphasis of interpretivism is placed upon the views and perception of the respondents and it explores the cultural and historical interpretations of the social world which use participant observation and field research (Neuman, 2008). Interpretivism is developed as a critique of positivism but from a subjective perspective. The argument of interpretivism is that the study of human being is of a different order from the study of phenomena in the natural world. According to interpretivism, examination of individual and social universe cannot be done in the same as physical phenomenon, thus social science study must not be imitated but must differ from natural sciences (Saunders et al., 2019). It examines the social world's cultural and historical interpretations, the object of which is to understand social science in context (Neuman, 2008). Hence, considerable emphasis is placed upon the views and perceptions of the respondents. Individuals interpret subjective meaning toward certain objects or things with their experiences which are varied and multiple, instead of narrowing meanings into a few categories or concepts, leading the study to look for the complexity of opinions (Creswell, 2014).

The question that may be raised for interpretivist is that whether people experience social or physical reality in same way in different cultural backgrounds, different socialization processes and education in different times and places. According to Saunders et. al., (2019) “As different people of different cultural backgrounds, under different circumstances and at different times make different meanings, and so create and experience different social realities, interpretivists are critical of the positivist attempts to discover definite, universal ‘laws’ that apply to everybody”. (p. 149). “Several people have seen, heard, or even touched the same physical object, yet come with different meaning or interpretation of it” (Neuman, 2008, p. 90). The main purpose of interpretivist research is to create new richer understanding and interpretations of social world and contexts.

Interpretivism, often associated with the qualitative research, says that the reality created by human being is within known through the interpretation and the philosophical stand of qualitative research is Interpretivism (Irshaidat, 2019). It says that to create a new reality, in-depth knowledge of society is necessary and is achieved in qualitative research through interpretation (Panta, 2016).

In relation to health promotion and education, the use of Interpretivism approach is high. In order to unearth the underlying meaning of 'health promotion,' academics propose using qualitative methodologies such as semi-structured interviews, focus group discussions, story/dialogue workshops, and health education development schemes (Simpson, 2004). Within the last three decades, the interpretivist tradition has gained traction in educational research. Interpretivist educational research has emphasized the need of contextualizing studies by giving the views of numerous, sometimes conflicting, parties interested in the results of instruction or specific educational programs, such as health education/promotion (Simpson, 2004). The phenomenon of health promotion is understood using interpretive aspect of quality research via the meanings that people (teachers, students, parents, health professionals, community members) assign to them (Simpson, 2004). Researchers can bring the most valid conclusions from an interpretive standpoint if they have a thorough understanding of the issue in its context. So, it can be said that to reveal hidden health problem of society this paradigm can be useful.

According to interpretivism, awareness and meaningful reality are created in and out of human-world interaction and formed and communicated in a social context (Crotty, 1998). Therefore, only individuals who are engaging and participating on it can understand the social world from the point of view (Cohen et al., 2007). So, Interpretivism is a qualitative

based research philosophy which is needed to create reality hidden in social phenomena by in-depth interpretation with the help of people lived in society using methodology case studies (in-depth study of events or processes over a prolonged period), phenomenology (the study of direct experience without allowing the interference of existing preconceptions), hermeneutics (deriving hidden meaning from language), and ethnography (the study of cultural groups over a prolonged period) (Scotland, 2012). It interprets the event to find out a new reality in society through in-depth analysis using qualitative method.

Many qualitative researchers dismiss natural scientists' as well as quantitative social scientists' claims to impartiality, and the techniques used to measure validity and their quest for generalizability (Turyahikayo, 2014). Qualitative researchers claim that it is difficult to discuss or explain social phenomena without using a certain language or conceptual framework, and that it is not unbiased. (de Vaus, 2002). So, to reveal the hidden problem related health interpretivism paradigm can be used using in-depth interview, case study, survey, focus group discussion and observation.

### **Criticalism**

Critical theory characterizes itself as a method which looks backward and moves forward (Bronner, 2011) which “uncover myths, reveal hidden truths, and help people to change the world for themselves. The purpose of social science is to reveal what is hidden to liberate and empower people” (Neuman, 2008, p.102). Criticalism is information as functional to ideology critique and social freedom which focuses on explaining visible administrative events by looking for the fundamental causes and instruments through which deep social structures shape everyday life (Saunders et al., 2019). Especially critical theory refuses to classify freedom with any institutional arrangement or fixed system of thought and hypothesis of critical research is that “all thought is mediated by power relations that are historically and socially raised” (Kincheloe et al., 2001, p. 164) and that “request that searches to the name ‘critical’ must be linked to an attempt to oppose the inequality of a particular society” (p. 164). It questions the hidden expectations and purpose of competing theories and existing forms of practice. According to Neuman (2008), “social science as a critical process of inquiry that goes beyond surface illusions to uncover the real structures in the material world in order to help people change conditions and build a better world for themselves” (p. 95).

Critical theory has become a key element in the formation and self-understanding of the new reality. So, we can say that knowledge can be constructed through raising critical consciousness. It further emphasized that “scientific knowledge is imperfect but can fight false consciousness” (Neuman, 2008, p.102). There is a strict interconnection between critical understanding and transformative action so theory and practice have interconnection.

Criticalism is to reveal what is hidden to liberate and empower the oppressed people and it emphasizes on change and helps researchers uncover underlying structures (Neuman, 2008). Criticalism in health education helps to reveal the effect of environmental factors like socio-cultural, political and legal on health promotion of people in society. It creates awareness in the people that how far environmental factors affect the health of the people. It helps policy makers to formulate strategies about health education promotion to mitigate the negative effect of environmental factors on health promotion in society. So, to promote the health education in society, critical pedagogy is needed which reveals the hidden fact of not to be good of health of people of society (Merideth, 1994). “Critical methods enable realities to be critically examined from a cultural, historical and political stance. Examples include open-ended interviews, focus groups, open-ended questionnaires, open-ended observations, and journals. These methods usually generate qualitative data” (Scotland, 2012, p.12). Thus, the role of Criticalism is important in qualitative research especially in health education.

“The ontological position of the critical paradigm is historical realism. Historical realism is the view that reality has been shaped by social, political, cultural, economic, ethnic, and gender values; reality that was once deemed plastic has become crystallized” (Guba & Lincoln, 1994, p. 110). Realities are socially constructed entities that are under constant internal influence. The Criticalism philosophy helps to reveal the hidden injustices, inequality and discrimination to liberate and empower the people. It examines oppression and routes to challenging oppression, focusing on exploitation of parts of society (alienation) and society’s view of people as political or other objects (reification) (Bronner, 2011). To reveal the hidden discrimination and other social problems existing in our society which directly affect the physical and mental health of human being, this paradigm critically examines the condition of individuals in the situations based on their social positioning in order to promote human right, increase social justice and reciprocity, address issue of power, oppression etc. The methodologies of this paradigm are action research and participatory research, which help health education researchers to reveal the social injustices created by social myth, cultural values, political systems etc. and create consciousness to emancipate the oppression from the society and address the injustice etc. Critical analysis of anything or event through the in-depth analysis of historically situated social intricacies can be achieved via qualitative method when the events occur in the society may not be quantified.

### **Post-modernism**

“Post-modernism emphasizes the role of language and of power relations, seeking to question accepted ways of thinking and giving voice to alternative marginalized views” (Saunders, et al., 2019, p. 149). Post-modernism theory rejects all ideologies and organized belief systems, including all formal social theory. “It shares the critical social science goal of demystifying the social world, wants to deconstruct or tear apart surface appearances and reveal the hidden structure” (Neuman, 2008, p.104). After the World War II, Post-modernism began with new application, which was about logical thinking. “It began in the humanities and has roots in the philosophies of existentialism, nihilism, and anarchism and in the ideas of Heidegger, Nietzsche, Sartre, and Wittgenstein” (p.103). Post-modernism does not believe in the universal truth, which if existed would have attempted to remove the differences between high and low (class, level, caste etc.). “Almost all postmodernist reject truth as even a goal or ideal because it is the very epitome of modernity .... Truth makes reference to order, rules and values; depends on logic, rationality and reason, all of which the postmodernists question” (Rosenau, 1992, p. 77). During the postmodernist era, with the onset of computers, media and advancement of technology, television and computers became dominant in the society. According to Tracy (2013), “post-modernist’s question totalizing truths and certainty, reject grand theories and master narratives that tidily explain a phenomenon, and resist the idea that, with just more research, we can better control the world. Post-modern researchers view reality and knowledge as fragmented, multiple, situated, and multi-faceted” (p. 44).

As stated above, “post modernism is rejection of all ideologies and organized belief system and it strongly reliance on intuition, imagination, personal experience and emotion” (Neuman, 2008, P. 104). To study in-depth about them, qualitative research method is used. Thus, the post-modernism worldview believes in qualitative research method but according to Ellaway (2020), postmodernist is always against in particular method to measure the claim. But, in the contest of health education research, according to post-modernism, qualitative research method is useful to mitigate inequality, oppression and hegemony in society especially in health education sectors (Rosenau, 1994).

Post-modernism emphasizes on the rejection of studying the past or different places because only current events are relevant and rejects all the social ideologies and organized belief system (Neuman, 2008). In critical criticism of positivism and objectivism,

postmodernists go even farther than interpreters and give the role of language even greater importance (Saunders et al., 2019). Deconstruction of any forms of data– texts, images, conversations, voices and numbers create finding new reality like interpretivists undertaking in-depth investigations of phenomena (Saunders et al., 2019). Therefore, it is one of the best worldviews to deconstruct the social myth, cultural value, political ideologies and other dominant ideologies and reveal the truth realities in society via in-depth analysis phenomena. And so, this paradigm can be underpinned in health education research.

In Post-modernism philosophy, qualitative method is used to study about intuition, imagination, personal experience and emotion. There is no objective way to decide whether description of the universe is "true" or "right" which is determined by power and particular dominant ideologies which is not necessary always right (Saunders et al., 2019). So, deconstruction current phenomena, underpinning post-modernisms worldview and unearth hidden truth realities as if there were text. The goals of postmodern research are to challenge radically the established ways of thinking and understanding, and to give voice and legitimacy to the suppressed and marginalized ways of seeing and knowing that have been previously excluded (Kilduff & Mehra, 1997; Chia, 2003). It is important to challenge the status quo due to the exiting malpractice, superstition, belief and tradition, and their intertwined relationship with power dynamics in the society, politics, culture and religions, that have created or endorsed (directly or indirectly) inequalities and injustices in the society. Thus, an in-depth investigation underpinning post-modernism worldview is required to expose such inequality and injustices and that helps to lead human life in different ways.

### Conclusion

In conclusion, positivism is a science-based empirical method which yields singular reality, where the reality is observable, measurable, predictable and tangible. Due to its empirical nature, it may not be suitable in all instances of health education research where every reality might not be measurable. Post-positivism stresses the multiple realities and it states that every theory is revisable, with no last truth. We cannot prove anything that it is true, neither can be proven untrue. Therefore, Post-positivism can be used in social science research i.e., health education research, using especially quantitative research method. Interpretivism is the study of social phenomena to find the hidden reality which is within the society. It is one of the main philosophies of qualitative research. It is the best method for health education research to find hidden reality in society. Criticalism is to discover the hidden reality of oppressed people and liberate them. To liberate people from social injustices through consciousness by health education which directly affect the health of the people. Because of this, Criticalism is considered one of the best methods to use in health education research. Post-modernism in research is the movement that includes art, music, literature and culture criticism. It rejects the all-existing assumptions, belief and values emphasizes any method that is suitable. To find out the reality and make a people health conscious through health education it would be better. In sum up, all paradigms like post-positivism, Interpretivism, Criticalism and Post-modernism except positivism can be useful in health education research.

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