The P.O.E.Ms of Educational Research:
A beginners' Concise Guide

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Abstract

Embarking in an educational research paper is one of the daunting processes any scholar can go through. And the process if even harder for novice education students who wander through the plethora of terminology, styles and paradigms trying to figure out their way in that jungle called educational research. The following of the review presents the constructs and basic theoretical components needed. By illustrating the differences between, strengths, weaknesses and research methods attached to each paradigm, this paper aims at introducing the first step in the thousand mile journey for novice education researchers and graduate students. Moreover, the paper is aiming at extending a departure point for the novice educational researchers, and strives to supplement the work of professors and supervisors who are engaged in training future educational researchers.

Keywords: Paradigm, Ontology, Epistemology, Methodology, Positivistic, Interpretive, Critical, Pragmatic, Quantitative, Qualitative, Mixed Methods

1. Introduction

The transition from a mere teacher or just a layperson to a novice researcher or graduate student is a daunting process that requires a deep root shift in order to emancipate oneself from the previous set of beliefs and embrace a new identity, the identity of the educational researcher. However, if mentioning a term such as 'educational research' is quite enough to intimidate the most seasoned researchers, can you imagine what novice researchers and graduate students feel like? Leedy and Ormond (2005) highlight that the novice researchers can be easily overwhelmed by the intricacies of the research methods employed in conducting a scholarly inquiry, and my experience as a graduate students and a novice researcher corroborates that conclusion.

Being a novice researcher or graduate students necessitates that you wear one of two hats: the first is the **educational research producer** hat where you have to produce a quality scholarly work that relates to your chosen field of study; and the second hat is **educational researcher consumer** where you have to read, critique and be able to discern good quality from inferior quality research papers. Fulfilling the requirements of both tasks requires that novice researchers and graduate students familiarize themselves with the several constructs, notions, terminology and philosophical perspectives that underpin each research paradigm, and in order to do so, they need to immerse themselves in an endless list of readings that contain that knowledge.

This daunting journey of discovery entails that as a novice researcher and graduate student you have to read, analyze and decide for yourself what constitutes the truth and what is not. The dilemma most novice researchers and graduate students face is that there is a mammoth number of books that need Herculean efforts to read and analyze, and what adds to the difficulty is that most of these books and references preach opposing ideas, and this makes the novice researchers and graduate students circle in an endless labyrinth trying to decipher the conundrum of educational research.

Writing this concise overview article was instigated by my frustration, during my quest to become and educational researcher, due to the lack of clear and straightforward scholarly works that would introduce me to the basic constructs of educational research and help me align my moons according to the research paradigms. The core goal of this paper is to provide the novice researcher and graduate students with fundamental set of constructs, notions and terminology much needed to overcome the daunting problem espoused with understanding the process of educational research. By briefly introducing the various concepts connected to the educational research process, I hope this article will be the compass to steer the novice educational researchers during their quest in educational research.

2. Terminology

Research, according to Ernest (1994, p. 8) is a "systematic enquiry with the aim of producing knowledge". Nunan (1992, p. 3); however, elaborated by saying that research "is a systematic process consisting of three elements: a question, problem, or hypothesis; data; and analysis and interpretation of data". Both definitions capture the essence of the notion that research is not a primarily idiosyncratic or informal process; rather, research "is disciplined inquiry characterized by accepted principles to verify that a knowledge claim is reasonable" (McMillan, 2000, p. 4). Educational research, likewise, "is a disciplined attempt to address questions or solve problems through the collection and analysis of primary data for the purpose of description, explanation, and generalization of prediction" (Anderson & Arsenault, 1998, p. 6). Borg and Gall (1989, p. 15) say that "the purpose of educational research is to discover new knowledge about teaching, learning, administration, and other educational phenomena."

For researchers, being only aware of the definitions of research and educational research is insufficient, and researchers need to be aware of the assumptions and theoretical frameworks underlying their research (Ernest, 1994). Bassey (1992) highlights that "to educational researchers, perhaps the most obvious set of belief systems are concerned with the nature of reality, for, in striving to understand, researchers seem to work from different beliefs about the nature of reality" (p. 4). In other words, researchers should embrace a *paradigm*.

The term paradigm, in educational research, gained monumental importance since it was first introduced by Thomas Kuhn in 1962. Paradigm can be defined as the "set of interrelated assumptions about the social world which provides a philosophical and conceptual framework for the organized study of that world" (Filstead, 1979, p. 34). Denzin and Lincoln (2000) suggest that the selected paradigm guides the researcher's assumptions in the research process in terms of tools, participants, methods, and results rendering. According to Guba and Lincoln (1994, p. 108), any paradigm has three essential components: ontology, epistemology, and methodology.

Ontology is considered as "the starting point of all research" (Grix, 2002, p. 177) and is defined by Blaikie (1993, p. 6) as the "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." In short, ontology is concerned with the reality and how people perceive it (Crotty, 1998). Olson (1999) best summarized this ontology by saying that "the subjective researcher seeks to know the reality through the eyes of the respondent." Epistemology is seen as "what we can know about reality and how we can know it" (Willis, 2007, p. 10). Thus, epistemology is concerned with "the very base of knowledge – its nature and forms, how it can be acquired, and how [it is] communicated to other human beings" (Cohen, Manion & Morrison, 2007, p. 7). Moreover, epistemology denotes "the nature of the relationship between the knower, or would be knower, and what can be known" (Guba & Lincoln, 1994, p. 108).

The final component is methodology, which, according to Crotty (1998, p. 3), refers to "the strategy, plan of action, process, or design lying behind the choice and use of a particular method… [which links] the choice and use of methods to the desired outcome." Wellington (2000, p. 22) corroborates Crotty's definition by saying that methodology is "the activity or business of choosing, reflecting upon, evaluating, and justifying the methods used." In this regard, two prominent research traditions are used: *quantitative and qualitative* methods. Finally, scholars argue that the acronym POEM should represent the order by which scholars operate. POEM stands for Paradigm, Ontology, Epistemology and Methodology.

3. Research Paradigms

3.1 Positivistic Paradigm

This paradigm has been referred to by many names, such as: scientific, neo-positivistic, experimental, and empiricist paradigms (Ernest, 1994; Wellington, 2000; Creswell, 2009; Mackenzie & Knipe, 2006). Positivism was the most dominant paradigm that influenced educational research for a long period (Grix, 2010, p. 80; Anderson & Arsenault, 1998, p. 4). The term was coined by the French philosopher, Auguste Comet (Cohen et al., 2007, p. 9; Babbie, 2008, p. 36). Guba (1990, p. 19) articulated that positivism stems from a realist (naïve realism) ontology stipulating that the truth is "out there, driven by immutable natural laws," and that "objects have an independent existence and are not dependent for it on the knower" (Cohen et al., 2007, p. 7). Once embracing the realist ontology, positivists are confined to adopting the *objective epistemology* (Guba, 1990, p. 19). Cohen et al. (2007) captured this point by saying that "The view that knowledge is hard, objective and tangible will demand of researchers an observer role, together with allegiance to the methods of natural science."

Positivism is hypothetico-deductive in nature (Cacioppo, Semin, & Berntson, 2004; McGrath & Johnson, 2003), in that it strives to verify a priori hypotheses that are stated in quantitative theorem that later can be conveyed mathematically or statistically to express a certain relationship (Guba & Lincoln, 1994; McGrath & Johnson, 2003).

In other words, positivism "strives for objectivity, measurability, predictability, patterning, the construction of laws and rules of behavior, and the ascription of causality" (Cohen et al., 2007, p. 28).

Positivism witnessed several stages in its history. Outhwaite (1987, cited in Scott & Morrison, 2007, p. 175) suggested three varieties of positivism. The first is the *classical* variant, popularized by Comte, which believes in causal laws and value-free observations. The second, the most widely known, is *logical positivism* (initiated by the Vienna Circle), which iterates the importance of nominalism and suggests the applicability of natural sciences to social sciences. The third variant, known as *variable analysis*, led to the birth of statistical explanations of the social world, in the forms of generalizability and law-like observations.

Logical positivism was criticized and amended by the tenets of post-positivism. Dewey and Sir Karl Popper are among the scholars who promoted this paradigm. Dewey, for one, suggested substituting the word "truth" for "warranted assertibility," based on Popper's belief that humans will never attain "absolute truth" (Phillips & Burbules, 2000). Karl Popper, in refusing the basic tenets of logical positivism, introduced his world famous *Falsification Theory* that maintains that "not the *verifiability* but the *falsifiability* of a system is to be taken as a criterion of demarcation" (1959, p. 40). Likewise, Heisenberg introduced the *Uncertainty Principle,* which claims that "… it is impossible to separate the properties of objects from the measurement of them, nor from the measurer who wields the measurement apparatus (Briggs & Peat, 1984). The most blatant criticism of positivism; however, is the fact that it entails a "mechanist perspective"; i.e., it regards human behavior as passive, controlled, and determined by the external environment (Cohen et al., 2007). Finally, based on the ontological and epistemological stances of this paradigm, it would be an oxymoron to call it a social science research paradigm, since the social factor has been neglected.

3.2 Interpretive Paradigm

This paradigm is also known as the humanistic, constructivist, or naturalistic paradigm. Interpretivism came as an alternative for the dominant paradigm; i.e., positivistic. This paradigm is closely associated with Max Weber's *Verstehen*, with understanding being the core of the interpretivist paradigm (Crotty, 1998; Cohen et al., 2007; Guba & Lincoln, 1994). Opposite to positivism's naïve realism, interpretivism adheres to the ontology where reality is a product of subjective experience, which considers that "the social world can only be understood from the point of view of the individuals who are part of the ongoing action being investigated" (Cohen et al., 2007, p. 19). The interpretivist epistemology is described as constructivism (Wellington, 2000). As an interpretivist epistemology, constructivism extends a new definition of knowledge based on inter-subjectivity instead of classical objectivity and truth (Wellington, 2000). To be more specific, social constructivism discerns that knowledge is created and sustained by social processes and that knowledge and social actions intertwine (Young & Collin, 2004). In this regard, Burns (2000) suggests that, through the process of these interactions, environmental stimuli are processed by individuals to create their own meanings.

Blaikie (2009, p. 99) states that interpretivism followed the traditions of *classical Hermeneutics,* which maintains that meaning is hidden and must be brought to the surface through deep reflection (see Schwandt, 2000; Sciarra, 1999). This leads to the recognition of one of the central tenets of this paradigm, which is the researcher-participant (social agents) relationship. Only through this relationship can a deeper meaning be uncovered, and researchers co-construct the meaning, to explain the emic and idiographic nature of the paradigm. Moreover, interpretivists "generate or inductively develop a theory of meanings" (Creswell, 2009, p. 9). Thus, interpretivism, instead of establishing the actual meaning given by the social actors, strives to construct models of meanings, which constitute a *tentative hypothesis* (Blaikie, 2009, p. 99). In this respect, Cohen et al. (2007) maintained that "they (interpretivist researchers) begin with individuals and set out to understand their interpretations of the world around them. Theory is emergent and must arise from particular situations" (p. 22). According to Glaser and Strauss (1976, cited in Cohen et al., 2007, p. 22) the theory should "be grounded in data generated by the research act." Cohen et al. contend that "theory *should not* precede research but follow it" (p. 22). Interpretivism has many variants, the most important of which are *phenomenology, hermeneutics, and symbolic interactionism* (see Crotty, 1998; Blaxter, Hughes & Tight, 2006).

Interpretivism, like positivism, was the target of criticism. Scott and Morrison (2006, p. 132) indicated several drawbacks of interpretivism. First, they argued that the interpretivist paradigm did not take into account the "multi-perspectival nature of descriptions of social reality." Moreover, they criticized the role of the social actors within the interpretivist paradigm saying that they rarely engage in deliberative activity about their actions (p. 132). In addition, the means by which the interpretivists submerge themselves in the research and participate in it may, in my opinion, distort the findings and their interpretations. Another criticism to this paradigm is its inability to yield generalizations that are applicable to a wider spectrum of contexts and situations; and the insufficient standards

available to either verify or refute the theoretical accounts (Carr & Kemmis, 1986). Finally, Silverman (2001), in critiquing the interpretivist paradigm, argued that the accounts of the informants are not so much *uncovered* as *created* by the researcher. Silverman exemplifies this point by asking that, if the data is retrieved from an open discussion or dialogue, how can the researcher determine which angle or aspect of that discussion or dialogue the person actually meant? And which part of that discussion prompted the "social agents" to say what they said?

3.3 Critical Paradigm

Critical Paradigm, which is also known as The *Third paradigm* (Carr & Kemmis, 1986), and *critical realism* (Grix, 2010), is concerned with emancipation and transformation (Kincheloe & McLaren, 1994; 2000). Denzin (1994) captures this point by saying that "An emancipatory principle drives such research, which is committed to engaging oppressed groups in collective, democratic theorizing about their common and different perceptions of oppression and privilege" (p. 509). The paradigm emerged out of the German intellectual traditions, and is linked to the works of the Frankfurt School during the 1930s. The paradigm is connected to many scholars like Theodor W. Adorno, Max Horkheimer, Herbert Marcuse, Friedrich Pollock, Leo Lowenthal, and Walter Benjamin. Many contemporary names are connected to the paradigm, the most well known of which is Jurgen Habermas.

Ontologically, Guba (1990) highlighted that realism is a shared virtue between the critical and the positivistic paradigms; however, many theorists mention that the paradigm is built on *historical realism* that sees reality existing beneath the surface of historically specific, oppressive, and social structures (Harvey, 1990, p. 1). In other words, constructed lived experience is mediated by power relations within social and historical contexts (Kemmis & McTaggart, 2000). Denzin and Lincoln (1994, p. 100) contend that the critical paradigm operates within a transactional/subjective epistemology. In other words, "Investigator and investigated object are assumed to be interactively linked, with values of investigator inevitably influencing the inquiry. Findings are therefore 'value mediated'" (Guba & Lincoln, 1994, p.110).

Kincheloe and McLaren (1994) highlighted the basic tenets of the paradigm by saying that: "[a] all thought is fundamentally mediated by power relations that are socially and historically constituted; [b] facts can never be isolated from the domain of values or removed from some form of ideological inscription; [c] language is central to the formation of subjectivity; [d] certain groups in society are privileged over others; [e] oppression has many faces and that focusing on one at the expense of others often elides the interconnections among them; and [f] mainstream research practices are generally implicated in the reproduction of systems of class, race, and gender oppression" (pp. 139-140; see also Kemmis & McTaggart, 2000; Tolman & Brydon-Miller, 2001).

Critical theory is also referred to as *Transformative*, and the question becomes: why and how? Mingers (1992, p. 105) stated that critical theory is not only descriptive theory but intends to promote social change; it "challenges the status quo in a more radical way" to help the disadvantaged. Critical theory is heavily concerned with change (transformation); institutional change (Ernest, 1994, p. 28), change of society and individuals to social democracy (Cohen et al., 2007, p. 26) and changing "the lives of the participants, the institutions in which individuals work or live, and the researcher's life" (Creswell, 2009, pp. 9-10). Agger (1992) argued that critical theory is an "agitational theory" concerned with institutional and conceptual transformations.

Nancy Fraser (1985, p. 97) criticized the critical paradigm for not extending any epistemological status since Marx, and for the lack of any deep political difference between critical research and uncritical research. Hence, critical theory is more a political movement than a research paradigm. Another criticism to the paradigm comes from Andrew Sayer (1997), who highlighted the importance of being critical when explaining social practices, since it would lead to an emancipatory character; however, "In practice, critiques of social phenomena are enormously contentious because it is difficult to establish agreement about what constitutes problems, solutions, or improvements, and whether the latter is feasible" (p. 473). Moreover, Sayer (1997, p. 474) stated that "For a philosophy concerned with emancipation, its lack of discussion on normative issues is astonishing." At the same time, Murray and Ozzane (1991, p. 141) mentioned that the critical paradigm has a problem in its foundation, which is rooted in the critical theorists' claim that all knowledge is historical. If that is so, how can a researcher step out of this historicity and offer a critique of society by a transcendent rational standard? It is difficult to defend the existence of historical knowledge while at the same time suggesting that an ahistorical basis for critique exists.

4. Data Collection Methods

4.1 Quantitative and Qualitative Research Methods

In the field of educational research, the distinction between quantitative and qualitative research methods is crucial, since to some scholars, the two paradigms are incompatible and are in war.

Quantitative methods, which are usually connected to the positivist paradigm, are employed "to describe current conditions, investigate relationships, and study cause-effect phenomena" (Gay, Mills & Airasian, 2006, p. 10). Quantitative research exploits scientific methods used in the natural sciences and experimental psychology to form scientific generalizations that pave the way for predictions or law-like descriptions of phenomena (Ernest, 1994); hence, it uses objective measurement and statistical analysis of numeric data to explain phenomena. Qualitative research methods, on the other hand, seek to "understand situations in their uniqueness as part of a particular context and the interactions there. […] to understand the nature of that setting; what it means for participants to be in that setting, what their lives are like, what's going on for them, what their meanings are, [and] what the world looks like in that particular setting" (Patton, 1985, p. 1). Qualitative researchers collect data in the natural setting to generate a theory through the close observation and careful documentation of the phenomena. Interpretivism and critical theory resort to this kind of research, since it focuses on the participants' opinions and interpretations; and above all, understanding the experience naturally.

Quantitative research comes in many designs, the most important of which, are the experimental (true and quasi experimental) and nonexperimental designs (descriptive, comparative, correlational, or causal comparative) (McMillan, 2000, p. 9). Nevertheless, survey design is a gray area for different scholars, as it may refer to a valid quantitative research design, or to a technique. Qualitative research, likewise, may include a number of designs, though it needs to account for the "strategies". Creswell (2009, p. 13) mentioned that these may include: ethnography, grounded theory, case studies, phenomenology, and narrative. Other designs include aesthetic, hermeneutics, biographical, historical, and clinical (Short, 1991; Dinzen & Lincoln, 2000).

As for the data collection methods associated with quantitative designs, Silverman (2000) referred to "social surveys, analyses of previously collected data or official statistics and 'structured' observations". Quantitative research, on the other hand, draws data from various sources – interviews, self-administered questionnaires, focus groups, observations, and documents or available data. In addition, qualitative researchers can resort to quantitative methods to complement their studies. Importantly, these data collection techniques are not restricted to the paradigm described above. Quantitative and qualitative researchers can use each other's techniques, even though the way in which data is interpreted may be different.

4.2 Quality in Educational Research

To ensure quality educational research, scholars have devised many standards for either quantitative or qualitative research methods. Validity and reliability are often used to describe the quality of quantitative studies. Validity (internal and external) is considered as a tool for determining whether or not "the research truly measures that which it was intended to measure or how truthful the research results are. In other words, does the research instrument allow you to hit "the bull's eye" of your research object?" (Joppe, 2000). Reliability, on the other hand, is "The extent to which results are consistent over time and an accurate representation of the total population […for example,] if the results of a study can be reproduced under a similar methodology" Joppe (2000).

Quality, in the field of quantitative research, is pivotal, yet difficult to define, since the definition of quality in qualitative research is less straightforward than quality in quantitative research (Dörnyie, 2007). Two 'sets of procedures' are usually discussed in this arena: Lincoln and Guba (1985) introduced '*Parallel Criteria,'* and Maxwell (1992) referred to the taxonomy of validity in qualitative research. Here, I adopt Lincoln and Guba's perspective, which is referred to as "trustworthiness". Trustworthiness came to substitute validity and reliability and introduced the criteria of *credibility* (truth of value), *transferability* (or applicability), *dependability* (or consistency), and *conformability* (neutrality of findings) (Lincoln & Guba, 1985; Dörnyie, 2007).

5. Ethics in Educational Research

Many researchers and participants express solicitude feelings towards ethics in the field of educational research. Many say that contemporary research methodologies and approaches subvert ethical issues, consequently bringing about ignominy to themselves and to the research process. Dörnyie (2007, p. 63) highlighted that ethical issues are more colossal in quantitative, rather than qualitative methods, because qualitative research "often intrudes into the human private sphere: it is inherently interested in people's personal views and often targets sensitive or intimate matters."

Christians (2000, pp. 138-140) introduced four ethical guidelines for any research study; namely, (1) informed consent (subjects must agree voluntarily to participate and this agreement must be based on full and open information); (2) deception (deliberate misrepresentation is forbidden); (3) privacy and confidentiality (primarily by safeguarding against unwanted exposure; data can be made public only behind a shield of anonymity; and no-one deserves harm or embarrassment as a result of insensitive research practices); and (4) accuracy.

Cohen et al. (2007) introduced a cardinal point of view regarding ethics in educational research by stating that:

> "The difficulty and yet the strength with ethical codes is that they cannot and do not provide specific advice for what to do in specific situations. Ultimately, it is researchers themselves, their integrity and conscience, informed by an acute awareness of ethical issues, underpinned by guideline codes and regulated practices, which should decide what to do in a specific situation, and this should be justified, justifiable, thought through and defensible" (p. 73).

6. My Paradigmatic Stance

For several reasons, none of the previously discussed paradigms drew my attention, though the pragmatic paradigm seems the most interesting. Pragmatists are not committed to a specific system of philosophy or beliefs (Mackenzie & Knipe, 2006), and research is "rarely, if ever, consciously rooted in philosophical assumptions or beliefs" (Greene & Caracelli, 2002, cited in Mertens & McLaughlin, 2004, p. 114). The following description from Tashkkori and Teddie (1998, p. 27) best describes my paradigmatic stance:

> "… pragmatists decide what they want to research, guided by their personal value systems; that is, they study what they think is important to study. They then study the topic in a way that is congruent with their value system, including variables and units that they feel are the most appropriate for finding an answer to their research question. They also conduct their research in anticipation of results that are congruent with their value system"

Mixed methods proved to be a valuable tool. Tashakkori and Teddlie (2003) noted that a mixed methods approach is superior to a mono-methods approach, in three ways: (1) the ability to answer research questions that other approaches cannot; mixed methods can answer simultaneously confirmatory and exploratory questions; (2) mixed methods provide stronger inferences through depth and breadth in answer to complex social phenomena; and (3) they provide the opportunity through divergent findings for an expression of differing viewpoints. In the same vein, Dörnyie (2007, pp. 45-46) stated that using mixed methods increases the strengths, while eliminating weaknesses, because the mixed methods can "bring out the best of both paradigms (i.e., quantitative and qualitative)." Moreover, he noted that mixed methods are useful in multi-level analysis of complex phenomena and can improve the validity drastically by reaching multiple audiences.

References

Agger, B. (1992). *Cultural studies as critical theory.* London: Routledge.

Anderson, G., & Arsenault, N. (1998). *Fundamentals of educational research.* (2nd edition). London: Falmer Press.

Babbie, E. (2008). *The basics of social research.* (4th edition). CA: Thomson.

Bassey, M. (1992). Creating education through research. *British Educational Research Journal.* 18(1). 3-16

Blaikie, N. (1993). *Approaches to social enquiry.* (1st edition). Cambridge: Polity Press.

Blaikie, N. (2009). *Designing social research.* Cambridge: Polity Press.

Blaxter, L., Hughes, C., & Tight, M. (2006). *How to research.* Berkshire: McGraw-Hill International.

Borg, W., & Gall, M. D. (1989). *Educational research: An introduction.* (5th edition). New York: Longman.

Briggs, J., & Peat, F. (1984). *The looking glass universe: The emerging science of wholeness.* New York: Simon & Schuster.

Burns, R. B. (2000). *Introduction to research methods.* (4th edition). Australia: Longman.

Cacioppo, J. T., Semin, G. R., & Berntson, G. G. (2004). Realism, instrumentalism, and scientific symbiosis: Psychological theory as a search for truth and the discovery of solutions. *American Psychologist,* 59, 214-223

Carr, W., & Kemmis, S. (1986). *Becoming critical: Education, knowledge and action research.* Basingstoke: Falmer Press.

Christians, C. G. (2000). Ethics and politics in qualitative research. In N. K. Denzin & Y. S. Lincoln (eds.), *Handbook of qualitative research* (2nd edition, pp. 139-164). Thousand Oaks, CA: Sage.

Cohen, L., Manion L., & Morrison, K. (2007). *Research methods in education.* (6th edition). London: Routledge.

Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches.* (3rd edition). Thousand Oaks: Sage.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process.* London: Sage.

Denzin, N. K. (1994). The art and politics of interpretation. In N. K. Denzin & Y. S. Lincoln (eds.), *Handbook of qualitative research,* (pp. 500-515). Thousand Oaks, CA: Sage.

Denzin, N. K., & Lincoln Y. S (eds.). (1994). *Handbook of qualitative research.* Thousand Oaks: Sage.

Denzin, N. K., & Lincoln, Y. S. (2000). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (eds.), *Handbook of qualitative research* (2nd edition, pp. 1-28). Thousand Oaks, CA: Sage.

Denzin, N. K., & Lincoln, Y. S. (2008). *Strategies of qualitative inquiry.* Thousand Oaks: Sage.

Dörnyie, Z. (2007). *Research methods in applied linguistics.* Oxford: Oxford University Press.

Ernest, P. (1994). *An introduction to research methodology and paradigms.* RSU, School of Education, University of Exeter.

Filstead, W. J. (1979). Qualitative methods: A needed perspective in evaluation research. In T. D. Cook & C. S. Reichardt (eds.), *Qualitative and quantitative methods in evaluation research* (pp. 33-48). Beverly Hills, CA: Sage.

Fraser, N. (1985). What's critical about critical theory? *New German Critique,* 35, 97-131

Gay, L. R., Mills, G. E., & Airasian, P. (2006). *Educational research: Competencies for analysis and applications.* (8th edition). New Jersey: Pearson.

Grix, J. (2002). Introducing students to the generic terminology of social research. *Politics,* 22: 175-186

Grix, J. (2010). *The foundations of research.* (2nd edition). London: Palgrave Macmillan.

Guba, E. G. (1990). *The paradigm dialog.* Thousand Oaks: Sage.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (eds.), *Handbook of qualitative research* (pp. 105-117). London: Sage.

Harvey, L. (1990). *Critical social research.* London: Unwin Hyman.

Joppe, M. (2000). *The research process.* [Online] Available: http://www.htm.uoguelph.ca/pagefiles/MJResearch/ResearchProcess/home.html

Kemmis, S., & McTaggart, R. (2000). Participatory action research. In N. K. Denzin & Y. S. Lincoln (eds.), *Handbook of qualitative research* (2nd edition, pp. 567-605). Thousand Oaks, CA: Sage.

Kincheloe, J. L., & McLaren, P. (1994). Rethinking critical theory and qualitative research. In N. K. Denzin & Y. S. Lincoln (eds.), *Handbook of qualitative research* (pp. 138-157). London: Sage.

Leedy, P. D., & Ormrod, J. E. (2005). *Practical research: Planning and design* (8th ed.). Upper Saddle River, NJ: Prentice Hall.

Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry.* Thousand Oaks: Sage.

Mackenzie, N., & Knipe, S. (2006). Research dilemmas: Paradigms, methods and methodology. *Issues in Educational Research,* 16(2), 1-11

Maxwell, J. A. (1992). Understanding and validity in qualitative research. *Harvard Educational Review*, 62, 279-299

McGrath, J. E., & Johnson, B. A. (2003). Methodology makes meaning: How both qualitative and quantitative paradigms shape evidence and its interpretation. In P. M. Camic, J. E. Rhodes, & L. Yardley (eds.), *Qualitative research in psychology: Expanding perspectives in methodology and design* (pp. 31-48). Washington, DC: American Psychological Association.

McMillan, J. (2000). *Educational research: Fundamentals for the consumer.* (3rd edition). New York: Longman.

Mertens, D. M. (2009). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods.* (3rd edition). Thousand Oaks: Sage.

Mertens, D., & McLaughlin, J.A. (2004). *Research and evaluation methods in special education.* Thousand Oaks: Corwin Press.

Mingers, J. (1992). Technical, practical and critical OR - Past, present and future? In M. Alvesson & H. Willmott (eds.), *Critical management studies* (90-113). London: Sage.

Murray, J., & Ozzane, J. (1991). The critical imagination: Emancipatory interests consumer research. *Journal of Consumer Research,* 18(2), 128-144

Nunan, D. (1992). *Research methods in language learning.* Cambridge: Cambridge University Press.

Olson, H. (1999). *Quantitative "versus" qualitative research: The wrong question.* [Online] Available: http://www.ualberta.ca/dept/slis/cais/olson.htm

Patton, M. Q. (1985). *Quality in qualitative research: Methodological principles and recent developments.* Invited address to Division (J) of the American Educational Research Association, Chicago.

Phillips, D.S., & Burbules, N.C. (2000). *Postpositivism and educational research.* Maryland: Rowman & Littlefield.

Popper, K. R. (1959). *The logic of scientific discovery.* London: Hutchinson & Co.

Sayer, A. (1997). Critical realism and the limits to critical social science. *Journal for the Theory of Social Behaviour, 27*(4), 473-488

Schwandt, T. A. (2000). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social constructionism. In N. K. Denzin & Y. S. Lincoln (eds.), *Handbook of qualitative research* (2nd edition, pp. 189-213). Thousand Oaks: Sage.

Sciarra, D. (1999). The role of the qualitative researcher. In M. Kopala & L. A. Suzuki (eds.), *Using qualitative methods in psychology* (pp. 37-48). Thousand Oaks: Sage.

Scott, D., & Morrison, M. (2007). *Key ideas in educational research.* London: Continuum.

Short, E. (1991). *Forms of curriculum inquiry.* Albany, N.Y: State University of New York Press.

Silverman, D. (2000). *Doing qualitative research: A practical handbook.* London: Sage.

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combing qualitative and quantitative approaches.* Thousand Oaks, CA: Sage.

Tashakkori, A., & Teddlie, C. (2003). *Handbook of mixed methods in social and behavioral research.* Thousand Oaks, CA: Sage.

Tolman, D. L., & Brydon-Miller, M. (2001). *From subjects to subjetivities: A handbook of interpretive and participatory methods. Qualitative studies in psychology.* New York: New York University Press.

Wellington, J. (2000). *Educational research: Contemporary issues and practical approaches.* London: Continuum.

Willis, J. (2007). *The foundations of qualitative research: Interpretive and critical approaches.* Thousand Oaks: Sage.

Young, R. A., & Collin, A. (2004). Introduction: Constructivism and social constructionism in the career field. *Journal of Vocational Behavior, 64*, 373-388