

## **Between Subjectivity and Objectivity in Educational Research: How validity is maintained in educational research**

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**Abstract:** Validity has always been a major concern for researchers, particularly within the educational field because of its effectiveness in presenting a 'trusted reflection' of a certain phenomenon in the society. There are several definitions for validity due to rise of different research paradigms in research which influenced the way how validity should or can be achieved to ensure accurate analysis and, therefore, real representation of the context under investigation. In this paper, the debate established between objectivity and subjectivity in qualitative and quantitative research is discussed in an attempt to recognise the possibility to reach a view of mediation in how validity can be maintained in both types of research.

**Keywords:** paradigm, positivistic approach, qualitative/quantitative research, and validity.

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### **Introduction**

The methods of inquiry used in education are varied, reflecting the complexity of the field and its origins in many other disciplines. Methods originating in the natural sciences, psychology, sociology, history and philosophy have all been used in education. These methods range from experimentation to case studies to analysis of the meaning inherent in language. Underlying the diverse methods are diverse epistemologies or understanding about what constitutes valid knowledge claims. Therefore, the term 'paradigm' in education refers to a view of the world or a way of knowing that is shared by a community of scholars or practitioners (Kuhn, 1962).

According to Ernest (1994), a research paradigm can consist of a broad theory, such as behaviourism in psychology or of a shared belief in the value of particular methods such experimentation or case studies. Research in education therefore is based on assumptions about *ontology* (a theory of existence), *epistemology* (a theory of knowledge and learning), and *methodology* (a theory of which methods to use) all of which make up the main components of a research paradigm.

Today, there are three main paradigms which govern the educational research. These paradigms are: The scientific, the interpretive, and the critical theoretical research paradigms. However, there are basic differences regarding the assumptions about ontology, epistemology and methodology between these paradigms. These differences cause an intellectual dissonance between some aspects of the positivist and the constructivist views on the one hand, and their research methodology on the other hand, which are mainly two: The first is labeled 'quantitative' and it is essentially deals with numbers and the prototype methods are called experiments and surveys since it aims at 'explaining'. The second, however, is named 'qualitative', in which the participants and events under investigation are usually described verbally, rather than being enumerated because it aims at 'understanding'. This reveals a contrasting view (epistemological & ontological) of the nature of reality underlying assumptions that ultimately guide choices about research perspectives, or paradigms and has fired the debate of subjectivity and objectivity in the educational research.

In this paper, I am going to present a review of the main aspects of the scientific, interpretive and critical theory paradigms. Then I will discuss the research methods derived from these paradigms and how the issues of objectivity and subjectivity are viewed mainly in quantitative and qualitative research. Finally, I

will provide discussion of how validity can be achieved in educational research regarding the debate established between objectivity and subjectivity in qualitative and quantitative research and the possibility to reach a view of mediation.

## **Research Paradigms in education**

### ***The Scientific Paradigm***

(Crocker, 1998) considers this paradigm to be the most dominant research paradigm in education for the most of this century. It's based on the view of determination and that most problems have general solutions which can be reached by applying the scientific method. Kerlinger (1970:11) defines the scientific method as “a systematic, controlled, empirical, and critical investigation of hypothetical propositions about the presumed relations among natural phenomena”. It is based on the ontological assumption that the universe is ordered and is made up of “atomistic, discrete and observable” events that are causally related.

Reality in positivism therefore is seen as single and external to the researcher. Bernstein (1983) describes it as “a world of objective reality that exists independently of us and that has a determinate nature or essence that we can know, [...] and knowledge is achieved when a subject correctly mirrors or represents objective reality” (p.9). Hence, scientific researchers assume an independent role to maintain an objective, value-free relationship between them (the knower) and the object of inquiry (the knowable). In order to avoid bias, these researchers establish detachment from the inquiry setting by using instruments as intermediary devices for data collection purposes.

Later, the concept of 'PostPositivism' has risen as a modified version of positivism, but it still maintains the aim of science, which is to predict and control. However, it recognizes the limitations of the human sensory and intellectual mechanisms (Guba, 1992: 20). This has called for a critical stand on scientific work and the scientific paradigm is criticized for its claim that:

“[S]cience should deal only with observable phenomena and not with abstract or hypothetical entities; that it is possible to distinguish between an a-theoretical observation language and a theoretical language” (Blaikie, 1993: 101).

In addition, Cohen and Manion (2003 :17) see the scientific research 'to be slow and unsure' because of this failure to be truly scientific, relying upon unreflective experience, common sense, subjective views and untested opinions. Pring (2003) claims that the scientific research is limited only to the observable phenomena and cannot provide proper description of more definitive manners such as understandings, feelings, and values, where criticality is much reinforced.

### ***The Interpretive Paradigm***

The interpretive paradigm emerged as a reaction against positivism and its mechanical way of studying human behaviour. It was developed from the methods used in sociological and social sciences research and is concerned with human understanding and interpretation (Atkinson 1990 & Crotty, 2003).

It presents an alternative view of knowledge, rejecting “the tacit but widely held belief that there is only one dependable way to know” (Eisner & Peshkin, 1990: 89). The purpose of interpretive (which is also called naturalistic) inquiry is to understand and interpret daily occurrences, social structures and the meanings people give to social and educational phenomena. Therefore, reality, or realities here is/are viewed as relative, multiple, socially and experientially based, holistic and divergent (Guba, 1992). In this paradigm the researcher may have a theoretical interest but his/her concern is not to impose a theoretical framework of meanings and definitions on the situation and participants (Wainwright, 1997: 2).

Therefore, subjective perceptions of individuals are central to interpretive research because it aims to “grasp the ‘subjective meaning’ which the action has for the actor” (Carr and Kemmis, 1986: 88).

Fetterman (1988) justifies the value of subjectivity in interpretive research and says that “what people believe to be true is more important than any objective reality; people act on what they believe. Moreover, there are real consequences to their actions” (p. 18).

Regarding epistemology, Crotty (2003) sees knowledge here in the attempt "to express the need to focus social inquiry on the meanings and values of acting persons and therefore on their subjective 'meaning-complex of action"(p.69).

However, this paradigm limits the process of criticality to be captured within the individuals and their thoughts, feelings, meaning-making, and personal views and prevents it from practising any form of generalisation by thinking of comparing a particular context to other different contexts and areas (Ernest, 1994).

### ***The Critical Theory and Critical Research Paradigm***

The start of the critical theory was established by The Frankfurt School; a group of scholars who formed the Institute for Social Research, that tried to explain how the atrocities of the Second World War were possible. Both Horkheimer and Adorno were forced to flee Nazi Germany and to take up their work in the U.S., where they attempted to explain how and why the Second World War could and did happen. They, together with Marcuse, made up the first generation of critical theorists. Jurgen Habermas is the current leading exponent of the Frankfurt school of critical theory.

Being influenced by Habermas (1972) and his predecessors in the Frankfurt School, the function of educational research in this paradigm has become to approach the 'incomplete accounts of social behaviour by taking into account the political and ideological contexts of educational events (Cohen & Manion 2003). It is based on the ontological belief "to changing the world for the better, and particularly to empower disadvantaged groups in society" (Crocker, 1998:5). In addition, the epistemological assumption represents knowledge as inseparable component from the power structures which prevail, and that the goal of research is to take a critical stance towards life (Cohen & Manion, 2003). Reality here is exhibited in the tendency to measure human behaviour and power in society (Howe, 1989). Therefore the critical paradigm is presented as a transformative view that the world is full of contradictions or conflicts and the 'critical forms of research call current ideology into question, and initiate action, in the cause of social justice." (Crotty, 2003:157)

Today, the theorists of this paradigm argue that the implication of the critical theory is to constitute a reconstruction of the whole structure of society not just a kind of technical attempt to improve "the fine details" (Erickson, 1973:10-19).

### **Methodology in Educational Research:**

#### ***What is methodology?***

Based on the divergent of educational paradigms, different methods have been used by the researchers. Generally speaking, a methodology in educational research is usually defined as the approach, which is applied in the research to gather the data upon which inferences or interpretations are based. The first to start with is the scientific method. According to Schwandt (1994), scientific methodology is:

“principally concerned with procedures for the development and testing of causal hypotheses, ... Observation, measurement, experiment, and theory building are the cornerstones of the methodology, with statistics playing a major role in the formulation of and testing of some types of hypotheses”(p. 264).

In the social sciences, scientific methodology deals with social facts. It identifies observable variables and variable relationships within the phenomenon under investigation. Hypotheses, which are propositions that are empirically testable, are abstracted from a theory. A theory is defined as a coherent set of general

propositions, used as principles explaining the apparent relationships among certain observed phenomena (Cohen, 2003).

### ***Methodology in the scientific paradigm***

The verification of a hypothesis entails the use of observation in order to capture social reality. Observations of variables and variable relationships are systematically collected, analyzed, and interpreted in light of the original research questions or hypotheses. This process not only leads to the verification of a theory (theory-testing), but may also result in the construction of new laws and new theories (theory-building). Scientific inquiry usually presents results in a numerical/statistical form; thus, its methodology is often associated with quantitative data collecting methods.

There are two main research designs in the quantitative researches: the experimental and correlational. The experimental study is carried out in order to explore the strength of relationships between variables, where the label given to the variable that the experimenter expects to influence the other is called 'the independent variable' while the variable upon which the independent variable is acting is called 'the dependent variable' (Nunan, 2005).

The correlational study, however, is applied to understand the relationship between different variables which deem to have some bearing on the phenomena in the research question. Correlational studies usually tend to answer three questions about two variables or two sets of data so that if the answer of the first questions is 'yes', then two questions of what direction and what magnitude follow (Cohen, 2003).

Regarding data collection, the testing instruments defer according to the mutual frameworks and the paradigmatic views of a research. The main techniques here are: *documents, interviews, observation and questionnaires*.

### ***Methodology in the interpretive paradigm***

Unlike the scientific paradigm, the interpretive paradigm advocates the use of constructivist/naturalistic methods which “seek to inquire into, portray, and interpret the realm of intersubjective meanings as constituted in culture, language, symbols, and so forth” (Schwandt, 1994: 264). Lincoln and Guba (1986) explain that naturalistic inquiry is based upon the ontological assumption that:

“there is no single reality on which inquiry may converge, but rather there are multiple realities that are socially constructed....These multiple and constructed realities cannot be studied in pieces (as variables, for example), but holistically, since the pieces are interrelated in such a way as to influence all other pieces.” (p. 75)

As for methods, constructivist methodology considers the participation “of the knower with the known ... as necessary to the acts of discovery and interpretation” (Schwandt, 1994: 272-3). Schwandt identifies three strands of approaches to inquiry within the interpretive paradigm – the ethnographic, the ontological, and the moral-political. Within the ethnographic strand Schwandt lists fieldwork inquiry or field research, ethnography, case study research, anthropological research, and naturalistic inquiry. The ontological strand of methodologies is concerned with interpretation and understanding. It views hermeneutics as “a way of being-in-the-world”, (Gadamer, 1975, cited in Schwandt, 1994: 267), hence the label *ontological*. Finally, the moral-political strand of constructivist methodology, which Schwandt thinks “at least bridges the two paths to inquiry [by drawing] on the tradition of the social construction of reality (like the ethnographic strand) but it takes on an avowedly moral and political character” (pp. 265-8).

Positivist researchers, however, have heavily criticized these methods because their data were seen as subjective and value-laden, and thus, a qualitative study was not judged as internally valid, nor were the findings of such research seen fit for generalizations.

### ***Action research as a methodology in the critical paradigm***

According to Wallace (1998), "[A]ction research is done by systematically collection data on your everyday practice and analysing it in order to come to some decisions about what your future practice should be." (p.4) Based on this, it can be inferred that action research is designed to bridge the gap between research and practice (Somekh, 1995) and, to overcome the perceived persistent failure of research to impact on or improve practice (James, 1993). More accurately, Pring (2003) finds that action research contrasts with traditional research that it "doesn't end with true or false but better or worse" (p.131) and it reflects a continuous process of development "because there is a sense in which such professional knowledge has constantly to be tested out, reflected upon, adapted to new situations." (p.131)

Data in action research can be collected quantitatively or qualitatively using the main instruments mentioned earlier such as questionnaires, interviews ....etc. and this depends on the research questions stated by the researcher.

### **Validity in Educational Research: (between subjectivity and objectivity)**

Hammersley (1992:57), citing Silverman (2001:232), defines validity as "the extent to which an account accurately represents the social phenomena to which it refers." More specifically, Margaret and Eisenhart (1992:644) define validity "as the truthworthiness of inferences drawn from data." Based on these two definitions, it can be seen that validity has a main concern in educational research because of its effectiveness in presenting a 'trusted reflection' of a certain phenomenon in the society.

However, the rise of two different research methodologies presented in the qualitative and quantitative research has led to different controversial views of validity. On the one hand, validity in quantitative research is approached through improving careful sampling, appropriate instrumentation and statistical treatment of the data, while on the other hand, it is maintained through the honesty, depth, richness and scope of the data achieved in the qualitative research. (Cohen, 2003). According to this difference, the terminology of 'reliability' changes according to the type of research. Reliability in quantitative research is defined as a 'synonym for consistency and replicability over time, instruments, and respondents. Yet, reliability in qualitative research is found in the uniqueness and idiosyncrasy of the study situations where it cannot be replicated – which seem a point of strength in qualitative research than a point of weakness in the quantitative research.(Cohen, 2003; and Lather, 1986).

Based on the above, this “epistemological break” has given the positivist insistence upon researcher neutrality and objectivity rise to intense debate over validity of naturalistic inquiry (Hesse, 1980). The validity of non-conventional research was debated because its methods were seen as subjective and value-laden in contrast to the conventional, objective, value-free, quantitative approach. The quantitative researchers stringently enforced the suppression of researcher intervention in the process of data collection, such as the use of pedagogical tests and measurements, population surveys and questionnaires. This implies the procedural detachment of the researcher in order to lay 'reasonable' claims to ontological objectivity or the achievement of a mimetic.

On the other hand, Howe (1985) criticizes the fact-value dogma and, citing Scriven (1969) and Rorty's (1982), positions on the “value-free doctrine”, he stresses that “Ultimate, theory-free, factual knowledge cannot exist, and [that] positivism's corollary, fact-value distinction is untenable”. Similarly, Ward-Schofield (1993) contends that “at the heart of the qualitative approach is the assumption that a piece of qualitative research is very much influenced by the researcher's individual attributes and perspectives” (p. 202).

Because of this debate, two things have emerged. The first is the shift in thinking about the definitions of subjectivity, which is now seen as “a

unique, useful, personal quality of a researcher”, or “a tribute that marks interaction between researchers and their research participants” (Jansen and Peshkin 1992: 682). Some feminists even advocate subjectivity as a means of *increasing the objectivity* of research.

The second is the many attempts to respond to the validity question regarding the issues of subjectivity and objectivity. In these attempts Lather (1986: 65-66) asserts the need to recognize Lee Cronbach’s (1980) point that “to call for value-free standards of validity is a contradiction in terms, a nostalgic longing for a world that never was” (p. 150).

Lincoln and Guba (1985) reject the notion of objectivity and believe that research cannot be value-free because it includes the values of the inquirer, the choice of inquiry paradigm, the choice of substantive theory to guide an inquiry, and values inherent in the context of inquiry. They see the inquirer-respondent relationship as “one of mutual and simultaneous influence” (p. 76) and emphasize the need to develop alternative validity criteria that are more appropriate to naturalistic inquiry.

Similarly, Wainwright (1997), acknowledging the subjectivity of qualitative research and phenomenology in particular, proposes a re-conceptualization of validity in terms of reflexivity practice. By reflexivity Wainwright means that the researcher adopts “a skeptical approach to the testimony of respondents (i.e., Are they telling me what I want to hear?)”, and develops “a theoretical schema (i.e., Am I seeing what I want to see?)” (p. 7). Eisenhart and Howe (1992: 647) cite Goetz and LeCompte’s (1984) suggestion of how the validity of ethnographic studies may be established. According to Goetz and LeCompte, internal validity of ethnographic studies may be strengthened when researchers are immersed in the field for long periods of time, being directly involved in the lives of those being studied, using and conducting interviews in the idiom of participants (Eisenhart and Howe, 1992: 647). Similarly, Goetz and LeCompte suggest that for external validity “careful and extensive descriptions of the settings and people being studied, of the social conditions of study, and of the constructs being used” give other researchers the information necessary to decide on generalization and translation issues (Eisenhart and Howe, 1992: 648).

Lincoln and Guba (1985) propose four validity criteria to replace the ones used for rigor in conventional research that “refer only to methodology and ignore the influence of context” (p. 78). These ‘parallel criteria of trustworthiness’ cater for the differences inherent in naturalistic inquiry and serve to establish the “truth value” of the inquiry (internal validity), its applicability (external validity), its consistency (reliability), and its neutrality (objectivity). They claim, “these criteria when fulfilled obviate problems of confounding, a typicality, instability, and bias, respectively” (p. 74). In order to realize their criteria, Lincoln and Guba suggest techniques that, which in my view, are similar to Goetz and LeCompte’s (1984) earlier suggestions but are presented in more detail. For example, for credibility (internal validity), Lincoln and Guba (1985) propose prolonged engagement and intensive contact with the phenomena, persistent observation, and for transferability (external validity), they suggest thick descriptive data (p. 77). In addition, Trifonas (1995)

### **Managing mediation**

I think that attitude toward objectivity or subjectivity is affected by the underlying epistemic assumptions. I agree with Mellon (1990) who states that objective researchers try to eliminate bias while subjective researchers recognise and acknowledge it:

“Total objectivity is impossible for researchers who are, after all, human beings. The difference between the two research traditions is not that one has and one lacks objectivity. The difference is that naturalistic researchers systematically acknowledge and document their biases rather than striving to rise above them.” (1990:26)

Not far away from (Mellon, 1990), Pring (2003) also supports the issue of what he names 'false dualism' between different research traditions by referring to Dewey (1916) and explaining that such dichotomies are mistaken, and "that researchers have fallen into a philosophical trap". (p.33)

I believe that once we recognise that just there is no neutral education there is no neutral research. Therefore, researchers in quantitative and qualitative research should manage to re-conceptualise validity in terms of 'reflexive practice'. This is because he or she will refer to his or her conscious self-understanding of the research process or respondents in case of whether they are telling him or her truth or not and also to the development of the theoretical schema. The purpose of reflexivity hence is not to produce an objective description of the phenomena, but to demonstrate the validity of research to an audience by a personal strategy in which he or she can manage a balance analysis between theory and observation. On the other hand, trusting the random sampling and statistical testing of a researcher in a quantitative research will lead to validity of his or her quantitative research too. In this sense, validity in educational research should be ultimately depending upon trust in the researcher's integrity and so it should refer to the techniques employed by the researcher to create a distance for self-deception, and critical interpretation. This all can be achieved by reflexivity, which has transformed the claim that subjectivity renders findings untrustworthy to an old concern. I think that the new interest in subjectivity, as I see it, is considerably less with whether or not my work is trustworthy and considerably more with how self and subject have interested and with what effects. In addition, we need to understand the uneasy relationship of qualitative-based methodologies and the construction of experimental validity as an epistemological bifurcation of the time-honoured truth-effect of science versus the less expressionistic freedom of art.

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