Research Paradigms in Education

Merita Poni

Docent of Sociology, Department of Sociology,
Faculty of Social Sciences, University of Tirana, Albania
Email: merita.poni@unitir.edu.al; meritaponi@gmail.com

Doi:10.5901/jesr.2014.v4n1p407

Abstract

This article brings an account into educational research and the impact on policy and practice. Research paradigms represent a crucial element in the research project as they influence both the strategy and the way the researchers construct and interpret the meaning of the reality. The research paradigms have a philosophical underpinning and orient the researchers' point of view on the reality as given by nature or constructed by human agency. Depending on the research paradigm, the researchers have been for long divided into two camps: the tenants of the quantitative methods and the tenants of qualitative ones. They have been arguing from opposing stances which method is superior. The quantitative method privilege the numbers, while the qualitative uses the words, therefore it seems like a war of numbers versus words. Lately, a third way is advocating for a mixed methodology, as more beneficial to research. The paper concludes that the different perspectives of research can be considered more as complementing rather than contradicting each other. The paper considers the implications of research on education and the role of research for professional development and educational practice.

Keywords: *education, research, paradigms, quantitative, qualitative, mixed methods*

1. Introduction

The social research is an intentional investigation aiming to explore and to offer solutions for complex social problems (Cohen, Manion & Morrison, 2007). Besides an investigation of the contemporary problems, the social research is an organized effort for understanding the social construction of the knowledge. In order to be able to invest into a research project, the researcher should understand the multiple social constructions of meaning and knowledge and make use of complementary means such as experience, reasoning and research (Robson, 2002). Research enquiry is an endless journey by which researchers set out to discover truth (Cohen et al., 2000). No matter what kind of truth contending to pursuit, the researchers pledge allegiance to conditions that qualify the inquiry as valid research. The research achieves validity criteria when the researcher pays attention to the rules and avoids haphazard accumulation of facts, referred to as naïve empiricism (Bryman, 2004). The enterprise of research is very needed in the field education to provide conditions for adapting to the huge challenges of a rapidly changing world, where what works today may not work tomorrow (Whitty, 2006). Therefore the educational problems have to be examined in the light of culturally determined needs, objectives and conditions of society (Raivola, 1986). One of the major changes in the educational system is the inclusion of children with disabilities in the regular schools. Inclusion is being a major challenge for the entire education, because the past legacy of segregated education for people with disabilities. Inclusive education for learners with disabilities has acquired a central position in the educational policy at international level. However, the application of the inclusion in the regular educational settings faces resistance. The educational research is invested in the exploration of the inclusion prerequisites in order to facilitate the implementation of the policy objectives. The researchers are inquiring the barriers of inclusion in regular education (Pilj, S. J., Meijer, Cor J. W., Hegarty, Seamus 1997). The investigation has been conducted at school-based level in order to explore teachers' attitudes towards inclusion. Another example is the research on the long-life education which aim is to provide opportunities for education to all learners regardless age (Edwards, 2002). The altering educational forms are the focus of research that intends to reform the traditional education into a flexible institution. Research is being conducted in the community as well to explore the beneficial output of education for the social cohesion and economic prosperity. Although research has given a plausible contribution to the social problems investigation and sometimes even to their solutions, the investigation is not always conducted with the researched. The researchers have been expressing paternalistic attitudes towards the researched by excluding them from the findings process. The aim of educational research is not exploring the school problems only but empowering the

educational actors as well. The social reality of school where educational research is conducted is the reality of teachers and learners therefore the research has to be conducted with them.

Except the debate on the role of the research in education, another concern is the methodology of research. Polemics have been evolved over the question: Which methodology provides the best results for the educational research, the quantitative or the qualitative? Expressed in simple word the quantitative research is based in numbers while the qualitative research is based in words. Fortunately, within the researchers' community, the voices into favor of the use of both methodologies are increasing. The mixing of both methodologies is bringing benefits to the research in social sciences.

2. Research Methods in Education

2.1 Quantitative research

Quantitative research has been given the imperial status of being valid, accurate, and a truth-mirror, for almost a century. Such a privileged position was attributed to its ability to test the falsity or veracity of interrelations between regularities of the social world. The research has been honoured with the maxim 'scientific', not as much for its affinity to natural science approach, but rather for its ability to use scientific methods in social research context. That is why the quantitative research is classified as a scientific method by many researchers coining to the method the features of the fixed design, or data in form of numbers and as a technique emanating quantified and generalisable conclusions (Bell, 2005; Bryman, 2004; Robson, 2002; Walliman, 2005). In quantitative research, it is the investigator who, puzzled by the organisation of the social world, 'drives the machine' of inquiry, seeking to understand the human behaviour. This deductive itinerary leads to the explanation of macro concepts such as: society, institutions, norms, values, roles and positions. The quantitative research represents an attempt to provide a rationale for the existence of social institutions such as education (Opie, 2004).

Principles of 'Parmenides's philosophy permeates the philosophic underpinnings of the quantitative research approach which advocates for the ontology of *being* instead of the ontology of *becoming*, by emphasising the immutability of reality (Gray 2004). This reality has an existence *in se* and *per se*, unconditioned by human presence. That is what objectivism means. What a researcher has to know lies just aside but distant to the researcher, waiting to be discovered. This is the given reality, a single one, independent of human senses that has to be known (Crotty, 2005). Such an externality to social reality disables the researcher's agency to influence the social phenomena (Bryman, 2004). The distance that a quantitative researcher takes from reality - paradoxical, yet justified - is motivated by the orthodox principle of unbiased research; that is, research findings should be unadulterated. The researcher's exploration is a dispassionate observation of the natural and universal laws regulating and determining individual and social behaviour (Cohen et al., 2007). A good understanding of a certain phenomenon is an indispensable pre-condition of change. For example, in the educational research, it is necessary for the researcher to understand how and why the educational system functions, and what role plays the culture upon the educational organization before proposing specific strategies for changing the *status quo*. It is important that the researcher dissociate himself or herself from the own cultural values in order to understand the social phenomenon as it is. The objective philosophy lies at the root of empiricism which epistemology considers the nature of knowledge as hard, real, capable of being transmitted in tangible forms, because no knowledge exists beyond what is objectively and immediately observable (Opie, 2004). It is through this objective observation that the truth emerges.

The positivistic research does not go further than theory and leaves the reality intact, because the reality is external to the actor (Cohen, 2007). Critics of quantitative approach argue that the traditional approach 'science only' is not invested in problem-solving, so the change agency remains dormant (Robson, 2002). In educational studies, the imperative of objectivity may become a barrier to the agency for the educational change. The rule of entering without pre-conceptions about the truth grants to the research the validity. However, the researcher is not limited only to tell the findings about reality, but is asked to undertake positive action as well. But, for the positivistic stance the researchers' investment in change action is not justified. The ethical issue laid at the foundation of this passivity relates to the principle of the representation which questions: On behalf of whom should researcher invest into changing the existing rules? While addressing a critique of such an indifferent approach that considers human behaviour as rule-governed, Cohen (2007) reminds that 'the role of theory is to say how the reality might be changed, so as to be more effective' (p. 22). The research aims at the improvement of the actual social regulation, no matter the methodology used for investigation of the reality. For example, based on the research findings, several conclusions can be drawn with regard to ways inclusive

education can be improved. The research is like the puzzle and if the puzzle-solver fails to solve problems, then the failure of existing rules will lead to new ones (Gray, 2004:19). This can mark the 'crisis time' in science in Kuhn's words (1996). In the turmoil generated by such a crisis, the unheard voice of excluded people may still remain unheard. Trying to predict the consequences of social inequalities in global level, Brzezinski (1993) argued that in order to prevent the world going out of control, it is wiser to make use of theories and avoid upheaval scenarios.

Baptising the quantitative method as 'value-free', the positivist axiology urges scientists to keep clear distinction between facts and values (Crotty, 2003). Such value absenteeism is difficult to maintain because research usually has an underlying moral agenda (Fraser, 2004). Furthermore, it is not possible to find some point from which realities can be viewed free from influence of the observer's standpoint. Disagreeing with the principle of unbiased research findings, the research tradition has proved that the researcher offers value-bound findings, reminding that what observers 'see' is not determined simply by the characteristics of the thing observed, but from the perspective of the observer also (Robson, 2002). Being intrinsic to the researcher's identity, the societal values render the metamorphosis of the researcher from a sensible person into an insensitive agent almost impossible. Moreover, loyalty to the objectivity principle may raise ethical questions for the researcher, especially when injustice and dishonest traditions in education are questioned by the research (Fraser, 2004). The aim of educational research is to unveil the values of the education system, with social justice being one of them. However, the latter, instead of offering equality, perpetuates the traditional class or race disparity. The empiricist epistemology has been criticised from another approach also, that stresses the necessity for knowledge transmission to others (Opie, 2004). The problem with the objectivistic stance is that impartiality restricts researcher's language and censures it in some forms such as: use of rhetorical neutrality, formal writing and impersonal voice.

Another feature of the quantitative method is the wish for deductionism. To enter the inquiry process, the quantitative researcher makes use of deductive reasoning, which begins with a universal view of the situation and works back to the particulars (Gray, 2004). An *a priori* hypothesis is deduced from the theory which provides the concepts that explain the way for data collection (Bryman, 2004). For example, for the study of the teachers' attitudes towards inclusion of children with disabilities in regular education, the hypothesis may originate from the inclusive education theory. Investigating the educational system, the research can explore the class structure and analyse how the school culture can impact the power relations in the classroom. For the sake of objectivity, findings have to be built upon demonstrable facts or observations. As a consequence, descriptive and explanatory methods, such as surveys and experiments, are put in place to capture the reality which should be explained in terms of variables. For an objective reading of reality, the quantitative researcher employs empirical methods to test if a valid premise can be deduced from a valid conclusion (Cohen et al., 2007). In adopting a scientific approach, statistical numerical methods are employed, with the aim of providing an objective scientific knowledge (Burges, H., Sieminski, S., and Arthur, L., 2006). Research strategy is directed toward quantification in order to provide explanations for the findings that can be generalised. This is a *nomothetic* approach in which findings are presented as objective facts and established truths (Gray, 2004). The truth comes from data that are gathered in statistic ways such as surveys. However, surveys samplings present problems with the population representation (Bell, 2006). How do researchers know that the population under investigation is truly representing the whole population? This question is related to the concern of generalisation of findings for the whole population based in a certain sample. Another concern for quantitative research is the experiment use which does not lead to the advancement of the knowledge because hypothesis do not relate to facts but to concepts (Raviola, 1986). However, quantitative research is necessary for the investigation of the education as a social institution with structure and functions. By capturing the interaction between social institutions and individuals, quantitative research addresses issues at a macro-social-level. In education research, the quantitative research explores the functions and dysfunctions of the education system, with the aim of improving it.

2.2 Qualitative research

Questioning quantitative ontology and epistemology with regard to the externality of the knower to the known and the usability of a natural science approach to the study of social life, the opponents of quantitative research furiously objected to the objectivist view of social world. The qualitative researchers reject the view that truths' about social world can be established by using natural science methods (Robson, 2004). Both camps were engaged in a fervent competition for hegemony, driving the research community into a dichotomised division, running in a parallel track to reach the same end, without crossing lines. Opposing the view of the social actor as an outsider of social world, qualitative researchers, however accept that there is an objective reality with which our mind has to work with to create meanings (Crotty, 2003).

Some realism can be detected here because there is a portion of the 'same blood' running in the veins of both research strategies. Although holding different epistemological positions, both constructivism and objectivism are still based upon the ontology of *being* (Gray, 2004). The constructionist ideas played out in epistemology are perfectly compatible with realism expressed in ontology. Furthermore, to say that the social reality is both meaningful and socially constructed is not to say that it is not real. It is through the interaction between a researcher and social properties that the meaning-making is conceived. This argument is supported by research work in which social phenomena and their meaning is continually being accomplished by social actors (Bryman, 2004). Not only is there an interaction between the knower and the known, but it is intentional too. The argument on 'intentionality' implies the presence of an innate agency of the knower to construct the social reality (Crotty, 2003). In social research the meaning is *constructed* not discovered (Gray, 2004). As long as we live in a socially construed multi-reality, the reality is not a single one, but multifaceted. The subjects construct their own meaning in different ways, even in relation to the same phenomenon. The social realities are socially constructed and they alter each time the actors change (Robson, 2002).

Contrasting the deterministic attitude of objectivism with reality, constructivist researchers have adopted a relativistic approach maintaining that there is no external reality independent of human consciousness. There are only different set of meaning which people attach to the world (Robson, 2002). For example, the studies in the domain of inclusive education, have involved both professionals and people with disabilities to discover the conditions of inclusion in education. Through the process of investigation, the research participants have constructed the meaning of inclusion and exclusion, by discussing in their own words what these concepts meant to them in practice. As a consequence, the segregation polities in disability practice changed and the recent policy on disability has articulated de-institutionalisation as the best way for starting social inclusion. Research on disability has made known to the educational and social policy the tormenting conditions in residential institutions which were spelled out by people with disabilities that spent their lives in residential institutions, isolated from society. The research gave voice to their exclusion and informed the policy on the ways of social inclusion.

It is through the multitude of stories that the researchers capture the *verstehen* (meaning) of the social reality lived by people in their social context. Beside *verstehen,* a concept introduced by Weber, interpretivism, which is the epistemological stance to qualitative research, includes phenomenology or hermeneutic and symbolic inter-actionism (Bryman 2004). The major concern of interpretive epistemology is the interactive link between researcher and participants (Mertens, 2005). Through this channel, the social scientist can gain access to people's common-sense of thinking The qualitative methods allow the immersion of the researcher in the social settings, and facilitate inter-subjective understanding between the researcher and the participants. Qualitative methodology calls the research participants to construct the reality with the help of the researchers (Robson, 2004). A triple hermeneutic analysis urges researchers to interpret: the participants' views on social world, the researcher's point of view and the interpretations interpreted in terms of theories (Bryman, 2004). Qualitative research is a threefold puzzle: the situations are fluid, behaviour evolves over time and individuals are unique and non-generalizable (Cohen et al., 2007). To solve the puzzle, the researcher has to become an intelligent *bricoleur* in order to approach the object with a radical open-mindset. The research offers the potential for new richer meaning. The research is an invitation for interpretation (Crotty, 2003). For example the stories of people with disabilities living in like prison-institutions have been meaningful to the researchers that have interpreted the institutional isolation as an exclusionary practice. The institutionalized isolation has been a long tradition in special education as well. Through interviews, researchers and participants have created the meaning of disempowering residential environments. In conversation, they have analysed the meaning of freedom and the right of choice. Continuously, they have evaluated the chances of constructing an enabling system.

Contrary to the deductive approach of the quantitative research, the qualitative research commences the project with an inductive stance from a particular situation, leading to a theory generated from data. The qualitative research inquires about people's perceptions about the social context. Investigating human affairs, researchers are concerned with the individuals (*idios*) which makes qualitative research ideographic. Data collection and analysis are carried out to see whether patterns suggest relationship between variables and in order *to infer* generalizations and even *theories* (Gray, 2004). Upon completing this stage, researchers go back to collect more data in an *iterant process* (Bryman, 2004). The axiology of interpretive episteme asks for the researcher to stay close to the object and convey personal values through research. The constructivist paradigm grants unrestricted freedom to a researcher to express his/her own values. However, researcher's values are bound by *confirmability* requirements that assure research validity and reliability (Bryman, 2004). For the qualitative research, the individuals' values and self-representation is important. For example, research on disability, has made use of constructivist ontology to drain the spirit of voluntarism and to react against the tyrannous culture of segregation.

The role of communication, symbols and language are fundamental to interpretive researchers (Burges et al., 2006). Very often, the researchers find it difficult to translate the words of people into abstract concepts, because the researchers' labels for concepts have their own accepted meanings in normal usage (Raivola, 1986). Not constrained by the objectivity criterion of value-neutral language, the rhetoric of qualitative research celebrates the expression of values and offers opportunity for personal voice to be heard. Qualitative methodologies, whose subject matter is people, include: ethnography, case studies, and bibliographical research (Robson, 2002). The techniques used are accounts, participant observation, and personal constructs (Cohen et al., 2007). The main characteristics of qualitative research, such as empathy, contextualization, flexibility and problem-solving, are extensively used in educational studies. Grounded theory is another main feature of qualitative research. However, the main task of research in education is to sensitise the stakeholders' community regarding the need to provide conditions for inclusive access and quality of education. Concerning the validity of qualitative research, at least two criteria are conditional: the trustworthiness and the authenticity (Bryman, 2004). In qualitative research, there is no true or valid interpretation, but useful interpretation (Crotty, 2003). Furthermore, qualitative research involves honesty in order to guaranty the reliability (Robson, 2002). Indeed, in social research, it is very difficult to prove the truth, which makes the *relatability* preferred to generalisability (Opie, 2004). The concept of meaning-making is indispensable to educational research. At the very least, the qualitative research can facilitate a mind-set for change. Constructivism accommodates the uniqueness and promotes interaction of unique individualities in a common environment (Child, 1986).

2.3 Mixed Methods Research

For the past three decades, the research community has been discussing the dilemmatic issue of mixing research paradigms. The good news is that voices promoting the use of both paradigms in a united study design are increasing, as the dichotomy attributed to research strategies is increasingly considered false (Onwuegbuzie & Leech, 2003). A mono-methodic stance has produced an extensive divisive debate between researchers, leading each camp to think that the method they use is hegemonic. The paradigms war between the positivists and constructivists has consumed the energies of researchers and created extreme polarization (Goodwin & Goodwin, 1996). The paradoxical competition between researchers has proved to be counterproductive. Not only has it enforced orthodox rules upon researchers, directing the researcher to sometimes conduct research *per se*, but it has damaged the trustworthiness of stakeholders on research (Goodwin & Goodwin 1996, Onwuegbuzie & Leech, 2003).

A monolithic division between paradigms has disorientated novice researchers and incited in them the fear of mixing methodology. There has been an overstatement of the inappropriateness of mixing the methods due to epistemological and ontological ties intrinsic to each set of methods. However, the research methods are much more free-floating than is supposed (Bryman, 2004). Despite the advantages of using each method independently, there are more good reasons in favor of multi-strategy or pragmatist research. The research questions are best answered by a mixed methodology rather than a single one. The combined methods can serve the achievement of the research goals by generating knowledge from diverse purposes. The distinctions between research paradigms are indeed exaggerated by both paradigms' proponents, creating mythical assumptions such as 'Kerlinger's statement that all data are either a 1 or a 0 (Goodwin & Goodwin, 1996).

While accepting the merits and the diversity of each of the research designs, researchers are reaching a higher degree of consensus on the similarities between mono-method research strategies and the complementary characteristics of both when used in a single research study. The natural science model is not a monopoly of quantitative research, as there are a lot of arguments for a natural science model in qualitative research, such as empiricism, in which the researcher is in direct contact with social world. Additionally, there is realism in grounded theory which investigates the social world beyond researcher (Bryman, 2004). Critical realism in ethnography is the proof of realism. Like quantitative research, the qualitative method is often applied to a specific problem. Although it appears as more acceptable that hypothesis and theory-testing are only associated with quantitative research, this is not necessarily true. Qualitative research is also concerned with hypothesis or theories generated in the course of conducting research, as in analytic induction or grounded theory (Bryman, 2004). Quantitative research demonstrates an interest in addressing meaning, through attitudinal surveys or questionnaires using *Likert Scale* technique, whereas qualitative researchers interpret people's behavior in terms of the norms, values and culture (Bryman, 2004).

The term quantification is mostly used as the demarcation line between the two research paradigms, feeding the metaphor of the war of numbers versus words. And indeed, there is some truth here, in that the quantitative method uses quantification extensively compared to the qualitative. But this does not mean that measurement represents a sacrilege

for qualitative research. Conversely, in qualitative research, measurement is a critical element for credibility. The use of quantification in qualitative research increases precision to inquiry and uncovers the generality of the described phenomena.

3. Conclusions

In this essay three paradigms of social research in education are analysed. The discussion includes the main underlying characteristics related to ontology, epistemology, methodology and their impact on the education research. Even though it appears to be challenging to a novice researcher, the pragmatic mixed paradigm, which employs features of both research strategies in one research project, seems to better address the process of inquiry. In increasing acquaintance with the mixed research paradigm, researchers improve comprehension of the use of mixed methodology in educational studies.

Both methods are invested in a rigorous process of inquiry, with substantial time devoted to the preparation, investigation, and interpretation of findings. Both have an interest in theory: modifying, testing or generating it. Induction and deduction are interchangeably utilized during the process of conducting research, and iteration is not a foreign word to quantitative research. Triangulation, which corroborates research findings of both research paradigms, is the arena of reconciliation versus hegemony. In social research there is room for triangulation to fill the gaps of each method. Employed in aid of each other, qualitative research provides a hypothesis and informs the process of designing survey questions for quantitative research, whereas quantitative research, in turn, serves qualitative research by providing a sample. It is possible for both research methods to approach each other, as in ethno-statistics and meta-ethnography. As both methods have strengthens and weaknesses, the strength of both techniques are used to better understand the social phenomena.

The same rules for the validity and similar standards, such as a well-designed research project and the appropriateness of the research question, are as applicable to multi-strategy research as they are to mono-method research. No hegemony or superiority is granted to multi-strategy research versus a mono-method. The research enterprise can accommodate one style of research, mono-method or multi-research, as long as the steps of intentional research that contributes to theory are followed. Researchers are asked to contribute to theory not as a mental exercise, but because theory can and should influence both policy-making and practice. This mission can be fulfilled if the researchers break the wall of polemics and bridge a mutual understanding on research strategies pluralism.

References

Bell, J. (2006) Doing Your Research Project: A guide for the first-time researchers in Education, Health and Social Science. (4th ed). Maidenhead: Open University Press.

Bryman, A. (2004) Social Research Methods. (2nd ed). Oxford: Oxford University Press.

Brzezinski, Z.K. (1993). Out of Control: Global Turmoil on the Eve of the 21st Century. New York: Collier.

Burges, H., Sieminski, S., and Arthur, L. (2006). Achieving your Doctorate in Education. London: Sage.

Child, D. (1986) Psychology and the Teacher. (12th ed.). London: Halt, Rinehart and Winston.

Cohen, L., Manion, L. and Morrison, K. (2007). Research Methods in Education. (6th ed.). London: Routledge Falmer.

Crotty, M. (2003). The foundations of Social Research: Meaning and perspective in the research process. London: Sage.

Edwards, A. (2002). Responsible Research: ways of being a researcher. British Educational Research Journal, 28(2):157-168.

Fraser, S., Lewis, V., Ding, S., Kellet, M. and Robinson, C. (2004). Doing Research with Children and Young People. London: Sage in association with the Open University.

Goodwin, W.L. and Goodwin, L.D (1996). Understanding quantitative and qualitative research in early childhood education. New York: London.

Gray, D.E. (2004). Doing Research in the Real World. London: Sage

McIntyre, D. (2005). Bridging the gap between research and practice. Cambridge Journal of Education, 35 (3): 357-382.

Mertens, D.M. (2005). Research and Evaluation in Education and Psychology; Integrating Diversity with Quantitative, Qualitative, and Mixed Methods. (2nd ed.). London: Sage Publications.

Kuhn, T. S. (1996). The Structure of Scientific Revolutions (3rd ed.). University of Chicago Press.

Onwuegbuzie, A. and Leech, N.L. (2003). On Becoming a Pragmatic Researcher: The importance of combining quantitative and qualitative research methodologies. Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Biloxi, MS, November 5-7, 2003), ERIC.

Opie, C. (eds.) (2004). Doing Education Research: A guide to first time Researchers. London:Sage.

Pilj, S.J., Meijer, Cor J.W. and Hegarty, S. (eds.) (1997). Introduction in Pilj, S. J., Meijer, Cor J. W., Hegarty, S. (1997). Inclusive Education: a global agenda. London: Routledge.

Raivola, R. (1986).What is comparison? Methodological and Philosophical Considerations in Altbach, P.G. and Kelly, G.P (eds.). New Approaches to Comparative Education. London: University of Chicago Press.
Robson, C. (2002). Real World Research. (2nd ed.). Oxford: Blackwell.
Walliman, N. (2001). Your Research Project. (2nd ed.). London: Sage.
Whitty, G. (2006). Educational research and education policy making: is conflict inevitable? British Educational Research Journal, 32(2):159-176.