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Mixed methods research and its role in social and educational change

It looks like the controversies regarding methodologies of social research, especially those related to qualitative versus quantitative research have found some solution in the past two decades in the mixed method approach. In the present paper we describe Mixed Methods research and some of the dilemmas involved in it. Then we will discuss the transformative approach which strives for social change and social justice. We will demonstrate the approach through a study involving a network of schools whose vision is to promote educational values along with learning achievements. In our view it is important to discuss both the transformative mixed methods approach and the study as an example in the age of a technological revolution with the new dilemmas it entails regarding educational and social values. We will point out the contribution of such research to the educational change and to the empowerment of the participants responsible for generating it.

Two main approaches characterize the thinking and the development of Mixed Methods research: one is anchored in a pragmatic world view that deals with the best ways to understand social phenomena. and the other, the transformative, supports the active role of the research in advancing social change and responding to problems of injustice, discrimination and oppression that many of the world's population suffer from. Mixed methods in social research became known at the end of the 1980s and beginning of the 1990s with some publications on the topic, although some researchers proposed to combine qualitative methods in traditional quantitative studies already in the 1970s (Creswell, 2011). Interest in the approach increased with the publication of the first guide on the topic (Tashakkori & Teddlie, 2003) and later on the publication of the Journal of Mixed Methods Research in 2007.

In various discussions on mixed methods writers attempted to clarify the concepts: paradigm, world view, methodology and method and describe the differences between them. Paradigm represent a world view that reflects the philosophical tenets of the researcher regarding reality (ontology), knowledge (epistemology), methodology (Guba & Lincoln, 2005; Lincoln, Lynham & Guba, 2011) and also regarding values (axiology) (Mertens, 2012a). Methodological assumptions stem from the paradigms and according to them the researchers choose the research methods.

Thus, the concepts quantitative, qualitative and mixed methods represent methodologies and not paradigms (Mertens, 2012b; Biesta, 2010). Creswell (2014) suggests the concept “research approach” to characterize quantitative, qualitative and mixed methods and describes four world views influencing these approaches: the post-positivist guiding mainly traditional quantitative research, the constructivist-interpretive guiding qualitative research and the third one – the pragmatic, that for many researchers justifies mixing methods under the claim that it may enable to face each one of the methodologies’ weaknesses. The fourth world view is the transformative, which influenced many qualitative as well as mixed methods studies.

The pragmatic approach relies on pragmatism which is a philosophical world view stemming from ideas of such thinkers as John Dewey and George Herbert Mead. Its main interest is actions, situations, outcomes and practical solutions to problems (Patton, 1990; Morgan, 2007; Creswell, 2014). According to this approach researchers need to focus on selecting research methods that will produce knowledge regarding the research problem from among the existing methods. They may consider various suppositions and also various methods of data collection and analysis. Writers from the pragmatic mixed method movement recommended basic and advanced models of mixed research designs and typologies of strategies to combine methods at various stages of the research process (Tashakkori & Teddlie, 2003; Johnson & Owengbuzie, 2004; Creswell, 2011; Creswell, 2014). The main argument against mixed methods is that qualitative and quantitative methods are anchored in paradigms that have clear boundaries and the gap between them is too substantial. This stance has been called the “incompatibility thesis” (Howe, 2004) and created much controversy among researchers. Today even pure qualitative researchers such as Guba and Lincoln (2005) and Denzin (2012) admit that one can combine in one study components of the different paradigm and it may even be productive to knowledge. Creswell (2011) and Teddlie & Tashakkori (2011) in a volume dedicated to qualitative research point out the crucial role qualitative methods play in mixed methods studies, since they offer thorough and valuable interpretations to results gained by means of quantitative tools.

Mixed methods purposes, designs and typologies

Writers offer the following purposes for mixing methods: **Triangulation** of data, **complementarity** of data and knowledge, **development** according to the research needs and its questions, **initiation** of new points of views, **expansion** of knowledge accumulated through various tools (Greene, 2007; Teddlie & Tashakkori, 2011). Among these purposes triangulation received most attention of researchers from the qualitative interpretive paradigm. At first, the concept referred to various forms of gathering data such as observations, interviews and narratives to create trustworthiness of the research claims. Denzin (2012) contends that the concept reflects attempts to ensure a deep understanding of the phenomenon being explored: “Objective reality can never be captured. We only know a thing through its representations” (Denzin 2012: 82). Triangulation in his view is not a tool or strategy for validity but an alternative to validity. Denzin proposes, following

Ellingson (2011) to expand the term triangulation to “crystallization” so as to reflect the richness of methods, approaches and possibilities that studies entail.

Over the years different types of mixed methods research designs have been offered, coming from varied fields like evaluation, nursing, public health and education and then were reduced to four main types: convergent, embedded, explanatory and exploratory (Creswell & Plano Clark, 2007). Later on, Creswell (2014) offered the following mixed methods research designs:

- **Convergent parallel design** in which the researcher combines throughout the research process quantitative and qualitative data to provide a comprehensive analysis of the research problem.
- **Explanatory sequential design** in which the first phase is usually a quantitative research followed by qualitative data gathering aiming to explain the quantitative outcomes.
- **Exploratory sequential design** in which the results of the first qualitative phase of the research assist in developing the second phase of a quantitative research which is usually the development of quantitative research instruments.
- **Embedded design** in which within one dominant approach one combines a set of data from the other approach.
- **Multi phase research design**, prevalent in evaluation studies and in program interventions, according to which one can collect data using a variety of tools at different stages of the study, either sequentially or parallel.

In a recent book Creswell added the transformative design as relying on a social justice perspective. In our view this is a philosophical point of view rather than a research design like the ones delineated above. However, transformative approach is a comprehensive theoretical framework for a variety of mixed methods designs. We will now present the approach which serves as a framework for describing our example of a mixed method study.

The transformative approach

The transformative approach includes a large variety of stands and theoretical perspectives dealing with underprivileged social groups and with problems of discrimination and injustice. This approach which is influenced by postmodernism and post structuralism (Denzin & Lincoln, 2011) mostly characterized the work of qualitative researchers who investigate gender, race and ethnic minority issues and who are involved in post colonial and indigenous research and research of different excluded communities (e.g. Kinchloe, McLaren & Steinberg, 2011; Olesen, 2011). Their main purpose is to grant research an active role in social change.

Regarding mixed methods the transformative approach is favored by researchers who are not satisfied with pragmatic justifications for mixing qualitative and quantitative methods (Morgan, 2007; Creswell, 2014) but hold the view that research has to have a political agenda against social oppression. Mertens (2009; 2010; 2012a) claims that such research may represent the complexity of social problems and offer solutions to continuing difficulties. She presents some core characteristics of the approach such as: the importance of studying life experiences

of members of marginalized communities; inequality based on gender, race, ethnicity, special needs, and socio-economic status whose results are asymmetrical power relations; relating social and political action to phenomena of inequality and the ways one can act to change this reality (Mertens, 2010; Creswell, 2014).

The transformative approach provides a philosophical framework focusing on values and supporting the use of mixed methods to give a voice to underprivileged populations and to help in improving the lives of citizens and communities. Two main roads are offered to fulfill the potential of mixed methods research in this respect. One, the researcher's responsibility is to produce new knowledge that not only discern social problems, but actively contributes to considering solutions and second, to collaborate with participants of the study and carry out the research in cooperation. Thus one deconstructs the monopoly on scientific knowledge in a way that contributes to democratization. Both the researchers and the members of the groups under investigation commonly create knowledge in a dialogical process (Marti & Mertens, 2014; Rodrigues de Mello, 2014; Alpert et al., 2009). Methodologically, the transformative approach is not imposing a specific research method, but it makes sense to believe that researchers will have to use both qualitative and quantitative methods, sometimes in a cyclical and multi-phase mode, in order to produce insights and recommendations for change (Mertens, 2012b).

Mixing methods for social change – a research example

Our main claim is that mixed methods have a vital and important role in leading change since this kind of research empowers the change agent. The mixed methods study moves between the personal and the public voice, between the social phenomenon which is represented by means of a study sample and between the authentic voices that connect the stakeholders in an unconditional manner to the human experience. The research moves between the object and the subject and enables a holistic view of the phenomenon. Moreover, in the case described herein one can notice a clear connection between a social-educational transformative project and a transformative research design. Our claim is that for a social-educational move aimed at inflicting change one needs a transformative research design, like a mirroring picture between the change and the research accompanying it. We will exemplify this approach through a sequential qualitative-quantitative research design according to which the results of the first stage of the study, the qualitative stage, assisted in developing the second, quantitative stage of the study.

From a school to an educational home – implementing change in schools

The study dealt with a network of schools consisting of 50 state religious secondary schools throughout Israel. The network set itself the goal of transforming the school into what was called by the network leaders “an educational home”, that is, an institution in which education for values is imparted alongside education that targets academic achievement. This goal is based on a humanistic and holistic view of education (Paul-Binyamin & Gindi 2015). The goal of the evaluation research

was to examine the way the transfer from “a school” to “an educational home” was carried out and the extent of its implementation, to learn the views and perceptions of the educational staff members regarding the reform determined by the network’s management, and also learn the practices used to implement the change. The schools’ network management asked to evaluate the educational move in six schools by means of quantitative measures, but a discussion regarding the research design between the educational network representatives and the researchers led to choosing the mixed method design for the project.

We used the sequential design in which the first stage was qualitative-ethnographic and took place in two schools. Data gathering lasted for about six months and included open interviews with the administrative staff and the teachers, observations in the school site and in staff meetings and analysis of texts of school protocols. On the basis of this data analysis we developed a questionnaire for the teachers who participated in the change process in the six participating schools. The questionnaire was developed on the basis of the qualitative data so its items reflected authentically what was going on in the schools and enabled to examine the educational move from a critical multi-directional outlook: of the school staff, the researchers who studied the two schools as case studies and the commissioners of the research. Also the final version of the questionnaire was carried out through dialogue between the representatives of the educational network and the researchers who attempted to develop a final version agreed by all involved. Together with the evaluation focusing on the teachers and the administrative staff a need arose to develop a feedback questionnaire for the students in order to examine the school change from their point of view. The aim was to enable the students to express their voice regarding the change.

The transformation from school to an educational home is a continuous process over years in which the educational network sets up goals, but allows the schools autonomy to interpret these goals according to their needs. Developing the questionnaire for the students allowed them to express themselves and the administrative pedagogical staff to take it into consideration while planning the school goals every year.

Methodological and ideological contributions of the research

On the basis of the qualitative data, quantitative research instruments were constructed – a questionnaire for the teachers and one for the students. The qualitative-ethnographic study enabled a direct acquaintance with the educational change toward an “educational home”. The research design developed through a dialogue between the administrative and pedagogical managers of the school’s network and the researchers. The commissioners of the research were flexible and agreed to deviate from the preferred quantitative research methodology towards the qualitative method that the researchers recommended. The researchers on their part understood the organizational and political need for quantitative knowledge base. The study eventually expressed the collaborative work carried out by the stakeholders and the researchers. This research design was not a compromise between the field’s

needs and the research needs but rather expressed an equalitarian world view that perceives collaboration and symmetrical relations as important (Marti & Mertens, 2014; Kemmis & McTaggart, 2005; Brydon-Miller et al., 2011). The research design and the work of the researchers and the management of the educational network was indeed developed in collaboration (Alpert et al., 2009). A research design that starts with qualitative data collection and analysis and continues with quantitative data collection and analysis was the result of cooperation between the commissioners of the study who were interested to present to the stakeholders (the network management and potential contributors) quantitative outcome of a large population of students and between the researchers. The quantitative research instruments, the questionnaires, enabled teachers, students and school principals to respond to the features of the “educational home” as were presented in the educational vision and the results of the questionnaires.

The qualitative study enabled the researchers to provide the educational staff a stage and legitimization to doubt the core existence of the “educational home” and to translate its general objectives to local needs. The will to lead a top-down change met with a complex reality, yet the research allowed the educators in the field to influence it from bottom-up. The qualitative research gave strength to the teachers to make changes in the network policy, to influence it, to express their world views and to give a local interpretation to the network new policy.

Thus, the mixed methods research expressed dialogical and equalitarian relationships between all participants. The data produced through the quantitative and qualitative tools enabled the network managers to move in zoom-in and zoom-out moves between the general and the personal voice and the teachers in the school to have their voice heard and thus construct a process of feedback until the consolidation of the educational process. After this research project the educational project expanded to include 50 schools while giving the schools autonomy to formulate the general mission according to local interpretations (Paul-Binyamin & Gindi, 2015).

Conclusions

The development of mixed methods research indicates that quantitative studies alone may miss explanations, insights and research directions without the depth that interpretive observations can provide. Past attempts to give qualitative approaches auxiliary role in mixing methods were rejected by researchers (e.g. Howe, 2004), claiming that the hegemony of the quantitative paradigm in social and educational research reduces the potential of research to technocratic goals of products and outcomes information gathering. Qualitative inquiry in its essence strives to understand and give voice to people, as subjects and actors and it is also democratic and equalitarian in its aim to facilitate a dialogue among researchers and the research participants.

It is thus unsurprising that the transformative direction that characterized some of the qualitative, post-structural paradigms such as the critical, feminist and post-colonialist, affected also the development of mixed methods research.

A social and educational change is a complex process affected by many stakeholders – some having ideological, others political, or economical interests. Research or evaluation that accompanies such projects is a necessary mean to both improve the change process and to obtain social, political and economical support in the project. Therefore, in order to get to know the complexity of a transformative social move, one needs a transformative research design combining methodologies. The importance of a transformative research design lies in its power stemming from a large and strong data base, from its ability to move between object and subject, between the personal and the general voice. Mixed methods that include a variety of research tools provide also cultural sensitivity and attention to equal power relationships between researchers and the research participants, thus making the research a meaningful and influential part of social change processes.

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Abstract

The paper describes Mixed Methods research and some of the dilemmas involved in it. Two main approaches characterize the development of this kind of research: one anchored in

a pragmatic world view that deals with the best ways to understand social phenomena and the other – the transformative – which supports the active role of the research in advancing social change and responding to problems of injustice, discrimination and oppression. The paper demonstrates the approach through a study involving a network of schools whose vision is to promote educational values by changing the school into “an educational home”. The study used a sequential mixed method design in which the first stage was qualitative-ethnographic and on its basis questionnaires were developed for the teachers and the students who participated in the change process. The study engaged all participants in dialogue and equalitarian relationships between them have been developed. The study demonstrates that for a social-educational transformative project aimed at inflicting change to be successful one needs a transformative research design that will accompany it.

Key words: mixed methods research, transformative approach, social and educational change

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