Knowledge-Constitutive Interests and Social Paradigms in Guiding Mixed Methods Research (MMR)

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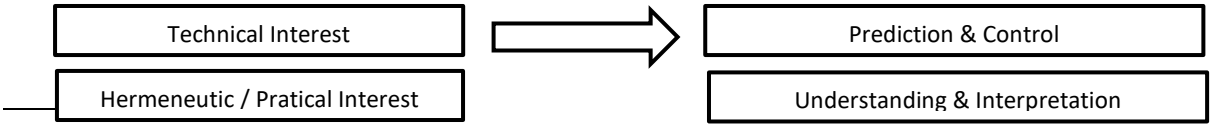
Abstract. The four paradigms of 'radical structuralist', 'funcionalist', 'interpretive' and 'radical humanist' (Burrel & Morgan, 1979) and Habermas's (1987) theory of knowledge-constitutive interests have solid philosophical positions to guide the designs of MMR in social sciences. Research nature and social phenomena can be mainly analyzed based on objective and subjective perspectives. After discussing the application of four paradigms and Habermas's theory of knowledge-constitutive interests of technical, hermeneutic and emancipatory into MMR, it was understood that the functionalist paradigm based on post-positivism and technical interest was very compatible with most quantitative strand of MMR. The interpretive paradigm based on post-modernism and hermeneutic interest is well suited to most of the qualitative strand of MMR. However, the umbrella philosophy of mixed methods studies is pragmatism. From the perspective of the radical humanist paradigm based on post-modernism and emancipatory interest, it is highly applicable to participatory action research, emancipatory action research and mixed typed transformative design and radical structuralist paradigm based on positivism and technical interest is very suitable with technical action research, mixed typed embedded design. However, some research designs include two paradigms; for example, mixed convergent parallel, mixed multi-phase design and mixed embedded design.

Keywords: Knowledge-constitutive interest, social paradigms, mixed methods research

Introduction

A researcher's knowledge-constitutive interests is prior to methodology of research. A researcher's knowledge interest motivates a study of objective or subjective reality or both realties. Habermas's (1987) theory of knowledge-constitutive interests has been reflected on epistemology of the social scientific research. For him, technical interest is the scientific, positivist method, with focusing on concrete 'facts' about behaviour observed by a detached observer, prediction and control of behavior, with passive research objects and instrumental knowledge (Cooper, 2016). Most of all, technical interest leads objective approach and systematic, value-free, context free generalization of inquiry in doing a research based on reductionist and deterministic (Guba & Lincoln, 2004; Hesse, 1980). Thus, it can be confirmed that this interest is very suitable for guiding the quantitative strand of MMR in nature.



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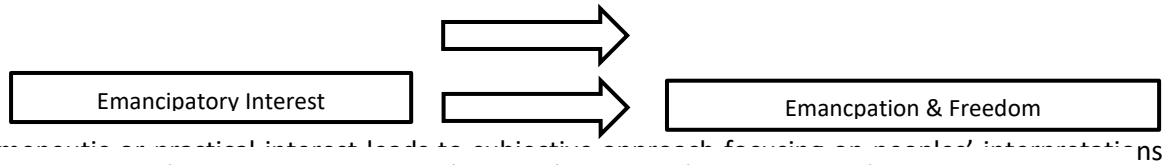

Figure 1. Habermas's knowledge constitutive (cognitive) ineterests (Habermas, 1987)

relations which create social reality based on the data of experience/interaction, interpretation of participants' realities. Thus, it can be confirmed that this interest is very suitable for guiding the qualitative strand of MMR in nature.

Emancipatory interest leads to research that is change oriented and seeks to 'advance social justice causes by identifying power imbalances and empowering individuals and/or communities' (Greene, 2007) relying on that 'domination and coercion have kept away full existential apprehension of individual and social freedom' (Cooper, 2016). Emancipation can be defined as the ability to free oneself from environmental constrain and power of others by being empowered through self-awareness (Bali, Wickramasinghe & Lehaney, 2009). Thus, it can be confirmed that this interest is also very suitable for guiding the qualitative strand of MMR in nature.

All research builds on philosophical foundations. Philosophical assumptions derived from a paradigm that guides the design (Gunbayi, 2018). These include: ontological assumptions about the nature of reality, epistemological assumptions about what can be known, axiological assumptions about what is important and valuable in research and methodological assumptions about what methods and procedures are allowable within the paradigm. Methodology is prior to method and more fundamental, it provides the philosophical groundwork for methods. To state one's methodological position is to describe one's view of the nature of reality: for the positivist, the methodological position is that the facts of the world represent real objects, while for the post-modernist, the world (or at least the world s/he chooses to explore) is one of inter-subjectively constructed meanings (Wilson, 2002)

Table 1.

Knowledge-constitutive interest: Positivism vs post-modernism

Item	**Technical Interest**	**Hermeneutic / Practical Interest**	**Emancipation & Freedom**
	Positivism	**Post-modernism / Interpretive**	**Post-modernism/ Critical Theory**
Focus	Concrete 'facts' about behaviour observed by a detached observer	Peoples' interpretations and shared meanings and symbols of their life worlds	Structural/historic insights
Aim	The fixed rules behind how world operates	Changing and negotiated relations which create social reality	Social justice causes by identifying power imbalances and empowering individuals and/or communities
Preferred Data	Experiment and objective concrete 'facts' about behaviour which can be observed by a detached observer	Experience/interaction interpretation of participants realities Subjective, value meditated findings	Experience/interaction Interpretation of participants' realities. Subjective, value meditated findings
Researcher	Separate, impartial observer of external facts	Knowledge is always partial Examine social actors' views and interpretations	Challenging the status quo and developing solutions

As understood from Table 1 and Figure 1, the choice between quantitative and qualitative research methods should be determined by the research question, not by the preference of the researcher. The aim of the quantitative approach based on positivism is to test pre-determined hypotheses and produce generalizable results. Such studies are useful for answering more mechanistic 'what?' questions. Qualitative studies based on post-modernism aim to provide illumination and understanding of complex psychosocial issues and are most useful for answering humanistic 'why?' and 'how?' questions.

Quantitative studies rely on prediction, control and objective measurement of observable phenomena. For instance, Gunbayi (2007), published an article examining "the levels of school climate perceived by high school teachers", Gunbayi made the following Philosophical assumptions derived from a paradigm that guides the design in his study:

- ***Ontological assumption:*** The levels of school climate can be predicted, controlled, observed and measured. There is one defined reality for this concept: The levels of school climate, and when measured, will be readily visible to all who observe it.
- ***Epistemological assumption:*** The acquisition of knowledge about the levels of school climate is an objective process, one that can be predicted, controlled, measured, and objective report based on that predicted, controlled, measured is reliable and acceptable realist knowledge.
- ***Axiological assumption*****:** The score for the levels of school climate will objectively inform the extent to which the teachers at high schools perceived climate factors, which is a valuable thing to understand.
- ***Methodological assumption*****:** Quantitative design – Specific closed-ended survey: *School Cimate Questionnaire* by Gunbayi (2007). Consists of 27 question items using a 5-point, Likert-type scale; captures seven dimensions of school climate: organizational clarity and standards, team commitment, autonomy, intimacy and support, member conflict, rewards, and risk a teacher possesses. No subjective data are necessary.

As the positivist paradigm leads inevitably to objective, quantifiable methods, the interpretivist paradigm leads to methods that involve qualitative inquiry-researcher and participant talking together, constructing a new reality together.

Gunbayi (2014a) published a qualitative study designed to understand the kinds of stressors originating from academic work setting, the influences of those kinds of stressors on academic staff and to know how they overcame stress at work setting. While quantitative opinion surveys simply ask people to rate pre-determined opinions on a scale of some sort, but the qualitative approach is to ask for the opinions and attitudes in the participant's own words and focuses on peoples' interpretations and shared meanings and symbols of their life worlds. Then the researcher examines social actors' views and interprets to create a new reality assuming that knowledge is always partial.

Gunbayi (2014a) made the following philosophical assumptions derived from a paradigm that guides the design in his study:

- ***Ontological assumption*** – There are multiple social realities of attitudes about what practices are helpful. Reality cannot be easily defined by concrete 'facts' about behaviour observed by a detached observer. It is more important to capture the meanings, experiences, and perceptions of those academic staff who experienced stressors originating from academic work setting.
- ***Epistemological assumption* –** The study of those academic staff's experiences could only be captured by hearing what they have to say, observing real life settings, and getting real life

documents related phenomenon studied since they are the ones who themselves lived in this unit in the context of academic setting through this process.

- ***Axiological assumptions*** **–** The types of questions to understand the kinds of stressors originating from academic work setting, the influences of those kinds of stressors on academic staff and to know how they overcame stress at work setting asked were influenced by the researchers' worldviews and led to their own opinions. It also should be noted that although qualitative researcher stands objective while collecting subjective data, the analysis of data based on the findings; exploration of themes are also influenced by the researchers' values, personal experiences, and worldviews. At the same time, the values, experiences, and worldviews of the participants interact with those of the researchers to deepen the analysis.
- ***Methodological assumptions*** **–** Using qualitative design and in-depth, face-to-face interviews, with open-ended questions, particiapant observations and real life documents, he acquired deep and rich understandings of what those academic staff experienced due to stressors originating from academic work setting.

A social science researcher works with both paradigms, and each has its unique power. The most apparent use of the two is in designing MMR in which both the positivist and the interpretivist or critical theory paradigms interact in the design and the data analysis as the umbrella philosophy of mixed methods studies is pragmatism. Thus, a mixed methods research design is a procedure for collecting, analyzing, and "mixing" both quantitative and qualitative research and methods in a single study to understand a research problem.

In a mixed-methods doctoral dissertation, for qualitative strand to understand "the school principals' experiences in practicing pedagogical leadership in nurturing teaching and learning in primary schools" and for quantitative strand to determine to "what extend do school principals practice pedagogical leadership in nurturing teaching and learning in primary school", in the context of Cambodia in the study called 'The principal's praxis of pedagogical leadership in nurturing teaching and learning in Cambodian primary schools', Sorm (2019) employed, methodologically, the exploratory sequential mixed design synthesized by holistic multiple case study in the first, and survey design in the second phase. Paradigmatically, subjectivist approach of investigation in interpretivist paradigm was dominant on functionalist or positivist paradigm. Thus, the priority was put in the qualitative method. The results of qualitative data were used to design a questionnaire for survey data collection. Thus while, researcher found answers to in what way school principals developed pedagogical leadership in qualitative strand, he found answers to what extend school principals practiced pedagogical leadership in quantitative strand. Thus, he increased the power of his dissertation through useful information based on the two kinds of analysis.

The four Paradigms in guiding social research

Before choosing any research design in mixed methods, a researcher should be aware of which social paradigm will guide her or his research and why.

Change

Nominalism	Radical Humanist Paradigm	Radical Structuralist Paradigm	Realism

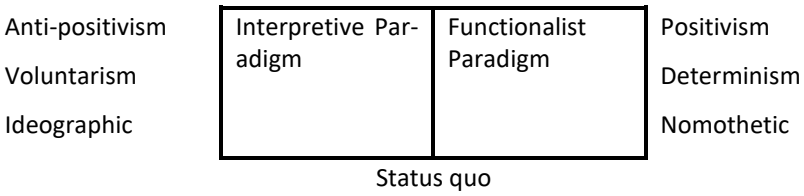

Figure 2. The four Paradigms guiding Social Research (Burrell & Morgan, 1979)

As seen in Figure 1, Burrell and Morgan (1979), in their work called "Sociological paradigms and organizational analysis: Elements of the sociology of corporate life", developed four paradigms for the analysis of social theory and social sciences, radical structuralist paradigm, functionalist paradigm, interpretive paradigm, and radical humanist paradigm. They explain the opposition of nominalism-realism as an ontological debate, opposition of positivism-anti-positivism as an epistemological debate, opposition of voluntarism-determinism as debate to nature of human, and opposition of ideographic-nomotetic as a methodological debate.

Radical structuralist paradigm

We can summarize the characteristics of the radical humanist paradigm in of which predecessors Marx, Althusser, Poulantzas and Colietti can be accepted that this paradigm views human actions as embedded in political and economic contradictions and shaped by these contradictions and concentrate on structural relations in the realistic social world. The features of this paradigm can be summarized as follows:

- The human liberation from social structures occurs at the end of conflict and change.
- It suggests that reality cannot be changed with people's consciousness.
- It focuses on concepts such as radical change, forms of domination, structural conflict, liberation, deprivation, opposition and possessed potential.
- It is realist, positivist, determinist, nomotetic (Burrell & Morgan, 1979; Gunbayi, 2019).

As it can be understood, the radical structuralist paradigm assumes that social change will occur with revolutionary, rapid changes, operating in social research methods, it can be said that this paradigm guides social researchers especially in experimental design in quantitative study based on pozitivism and technical interest as it suggests that reality cannot be changed with people's consciousness (Gunbayi, 2019). Thus, in the guidance radical structuralist paradigm of reality or phenomena can be changed through evidences as a result of positivist scientific experiments.

Functionalist paradigm

The structuralist paradigm, of which predecessors can be accepted Auguste Comte, Herbert Spencer, Emile Durkeim and Vifredo Pareto, is based on the discretion that the existing situation should be maintained in a controlled manner from the top in search of harmony and balance for a long time, as the existing situation in the society was changed from the top actors. The features of this paradigm can be summarized as follows:

- The understanding of social engineering is dominant: models and methods in science are valid in understanding human relations.
- Contrast, development and tension are non-functional values that should be avoided
- Cohesion and integrity, status quo, social order, social integration, consensus, solidarity, meeting needs, reality are functional concepts that need to be protected.
- It is realist, positivist, determinist, nomothetic (Burrell & Morgan, 1979; Gunbayi, 2019).

As it can be understood, the structuralist paradigm is in a sense based on the principle of applying the revolutionary changes based on the radical structuralist paradigm in society or institutions without compromising, and maintaining the current situation resulting as a result by resolving conflicts, and is different from the radical structuralist paradigm; but in a way, it is both the supporter and the continuation of the radical structuralist paradigm. (Gunbayi, 2019).

As seeing above, the functionalist paradigm is especially suitable for descriptive quantitative research via survey in nature because, ontologically, it is realist. Epistemologically, it is positivist. It tends to be determinist in human nature, and to be nomothetic in methodological assumption. Specifically, using this paradigm to underpin the descriptive quantitative design is very fit for social researches.

Interpretive paradigm

The interpretive paradigm of which predecessors Schultz, Kant, Hegel, Freud, Weber, Dilthey and Husserl can be accepted, is an approach that tries to understand and explain the social world, as it is, from the point of view of individuals directly involved in the social process, and its features can be summarized as follows.

- The main feature of social life is face to face relationships among individuals.
- To learn how society works, we need to grasp individuals' descriptions of the situation.
- It is based on the view that the final reality of the universe lies in 'soul' and 'thought' rather than the perception of the senses.
- It is not explanatory but covered.
- Nominalist, anti-positivist, voluntarist and ideographic (Burrell & Morgan, 1988; Gunbayi, 2019).

The interpretative paradigm approach can also be explained by means of the “phenomenological symbolic interaction approach” that reflects the interpersonal (social) world that exists as a result of our interaction with each other.

Interpretative paradigm: Phenomenological symbolic interaction approach

Phenomenological symbolic interaction approach is based on the assumption that people interact with each other through shared meanings and seeks an answer to the question of how these meanings are created. In other words, the characteristics of this approach, which is based on social reality, can be summarized as follows:

- Society is in "order" rather than chaotic; this order is recreated every day in the social interaction of people.
- A process of interpretation based on negotiation-bargaining-reconciliation among individuals creates mutual action.
- Social order (social inter-action) is a “reconciliation order”.
- Micro (individual-oriented) analysis model is essential (Burrell and Morgan, 1979; Gunbayi, 2019).

As can be understood from the explanations and features above, the interpretive paradigm with phenomenological symbolic interaction approach is based on social validity. In a more abstract way, reality is created as a result of interpersonal interaction as a result of talking-discussion-understanding-conciliation, The interpretative paradigm includes status quo, like the structuralist paradigm, but here the status quo is based on the democratic preservation of the current situation on the grounds of reconciliation and persuasion, where the individual and individuals agree with the decision rather than the

authoritarian preservation of the current situation determined by the guidance of radical structural paradigm but sustained by guidance of functionalist paradigm (Gunbayi, 2019). Thus, it is very suitable for guiding qualitative research especially in descriptive designs such as case studies, phenomenology, cultural analysis, narrative i.e.

Radical humanist paradigm

In the light of this paradigm, human thoughts can be seen as a phenomenon imprisoned by ideological processes dominated by superstructures - powerful actors, which causes alienation and false awareness that hinders the right human actions. The features of this paradigm can be summarized as follows:

- It concentrates on consciousness.
- A revolution or transformation can take place through consciousness. It aims to realize itself by freeing the individual from the social pressure surrounding him.
- It focuses on concepts such as radical change, forms of domination, liberation, deprivation and potential possession.
- It s nominalist, anti-positivist, voluntarist and ideographic (Burrell & Morgan, 1979; Gunbayi, 2019).

Radical humanist paradigm can also be explained in by means of ethnomethodological approach that reflects subjective (individual) world that a person has created individually.

Radical humanist paradigm: Ethnomethodological approach

Ethnomethodological approach assumes that practical actions of individuals creates social order, not values-norms; it is based on the assumption that every action is meaningful in its context and seeks to answer questions on how to build real-daily interaction settings. The characteristics of this approach, which argues that reality is individual, can be summarized as follows:

- The social world is a dream; whereas it looks orderly, it is basically chaotic.
- Order appears as a result of confronting the meanings that individuals give to impression and experience. This is a psychological process.
- The answer to the question of “What are the means / ways of people making sense of the social world?” is sought.
- It was directly affected by phenomenology. Phenomenon is the subjective life of the person who perceives himself and the outside world in a unique i.e. the subjective experiences of the individual who is considered a phenomenon.
- Micro (individual-oriented) analysis model is essential (Burrell & Morgan, 1979; Gunbayi, 2019).

As can be understood from the explanations above, the radical humanist paradigm explains how human beings can be freed and how they can freely realize themselves by freeing themselves from the perception of super structures / top actors and the social order that is determined in a radical structuralist way and sustained and protected in a functionalist way by his or her free will. (Gunbayi, 2019). Additionally, ethnomethodological approach based on radical humanist paradigm assumes that that practical actions of individuals creates social order, not values-norms and explains the subjective life of the person who perceives himself and the outside world in a unique way. As in this paradigm and ethnomethodological approach it is assumed that transformation can take place through consciousness and it aims to free the individual from the social pressure surrounding him or her, it can be said

that this paradigm guides social researchers especially in transformative or critical discourse design in qualitative study in which priority is based on post-modernism and emancipatory interest for value-based and ideological reasons more than for reasons related to methods and procedures (Greene, 2007; Creswell & Plano Clark, 2011).

In the light of Habermas's (1987) knowledge-constitutive interests, we can interpret human assumptions about the nature of reality and the nature of relationships in three dimensions: Technical interest is related to the objective world that exists outside of us, practical interest to interpersonal (social) world that exists as a result of our interaction with others and emancipatory interest to the subjective world that exists as ethnomethodologically. When we evaluate the facts about the nature of reality in terms of people with respect to human relations, the objective world is in parallel with authority and hierarchy in relations, the social world with social solidarity and cooperation, and the subjective world with individual freedoms (Gunbayi, 2014b).

There are two main philosophies; realism/modernism and nominalism/post-modernism and four paradigms- radical structuralist, functionalist, radical humanist and interpretive paradigms guiding researches in social science. Realism/modernism can be accepted as the umbrella paradigm of positivism and post-positivism and nominalism/post-modernism umbrella paradigm of critical theory and constructivism. The following table characterizes the basic beliefs of those approaches in terms of ontology, epistemology and methodology of realism and post-modernism. (Burrell & Morgan, 1988, Guba & Lincoln, 2004; Mertens 2009).

Table 2.

Basic beliefs of alternative research paradigms

Assumptions	Realism/Modernism		Nominalism/Post-modernism	
	Positivism	Post-positivism	Critical Theory	Constructivism
	Radical Structuralist Paradigm	Functionalist Paradigm	Radical Humanist Paradigm	Interpretive Paradigm
Ontology	Naive realism – "real" reality but apprehensible	Critical realism – "real" reality but only imperfectly and probabilistically apprehensible	Historical realism – virtual reality shaped by social, political, cultural, economic, ethnic, and gender values; crystallized over time	Relativism – local and specific constructed and co-constructed realities
Epistemology	Dualistic/ objectivistic; findings true	Modified dualistic/ objectivistic; critical tradition/ community; findings probably true	Transactional/ subjectivist; value-mediated findings	Transactional/ subjectivist; created findings
Methodology	Experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	Modified experimental/ manipulative; critical multiplism; falsification of	Dialogical/ dialectical	Hermeneutical/ dialectical

		hypotheses; may include qualitative methods		

Source: Adapted from (Guba & Lincoln, 2004, p. 24-29)

Taking two main philosophies of realism/modernism and nominalism/post-modernism, Guba and Lincoln's (2005) differentiating between four paradigms in the theory of science and Burrel and Morgan's (1979) social paradigms into consideration, it can be claimed that radical structuralist paradigm can be defined as positivism as it is based on positivist position of naive realism assuming an objective external; functionalist paradigm as post-positivizm as it is based on critical realism – "real" reality but only imperfectly and probabilistically apprehensible reality upon which inquiry can converge; interpretive paradigm as constructivism as it is based on relativism – local and specific constructed and co-constructed realities and radical humanist paradigm as critical theory as it is based on historical realism -virtual reality shaped by social, political, cultural, economic, ethnic, and gender values; crystallized over time.

Mixed Methods Designs

There are six major mixed method designs with sixteen sub- variants as classified by Creswell and Plano Clark (2011). Six major mixed method designs are both guided by positivism based on radical structuralist paradigm, post-positivism based on functionalist paradigm or constructivism based on interpretive paradigm and critical theory based on radical humanist paradigm.

Table 3.

Major mixed methods designs

The Convergent Parallel Design
• The parallel-databases variant
• The data-transformation variant
• The data-validation variant
The Explanatory Sequential Design
• Follow-up explanations variant
• Participant selection variant
The Exploratory Sequential Design
• Instrument-development variant
• Theory-development variant
The Embedded Design
• Embedded Experimental variant
• Embedded Correlational variant
• Embedded Instrument Development and Validation Variant
The Multiphase design
• Large-scale program development and evaluation projects
• Multilevel statewide studies
• Single mixed methods studies that combine both concurrent and sequential phases
The Transformative design
• The feminist lens transformative variant
• The disability lens transformative variant
• The socioeconomic class lens transformative variant

Source: Adapted by Creswell & Plano Clark (2011)

The convergent parallel design

The convergent parallel is a design in which quantitative and qualitative data and results are collected, analyzed, and merged at one time. It has three sub-variants: ***the parallel-databases variant*** in which two parallel strands of quantitative and qualitative are led independently and are only got gathered during the interpretation, ***the data-transformation variant*** in which after analyzing of the qualitative and quantitative data sets initially, the researcher uses processes to quantify the qualitative findings, creating a new variable based on qualitative themes, ***the data-validation variant*** in which researcher use a questionnaire including both open- and closed-ended questions to confirm results from the closed-ended questions. (Patton, 1990, Creswell & Plano Clark, 2011).

The explanatory sequential design

The explanatory sequential is a mixed methods design called a qualitative follow-up approach (Morgan, 2014). in which researcher starts with a quantitative phase and goes on qualitative phase based on the explicit results of quantitative phase in order to explain the initial results based on mechanical "what" question and its numerical results in more depth based on humanistic "how" and "why" questions. It has two sub-variants: the most common is ***follow-up explanations variant*** in which a researcher places the priority on the quantitative phase and then uses qualitative phase to explain the quantitative results and the less common is ***participant selection variant*** called a quantitative preliminary design (Morgan, 2014), in which the researcher places priority on the qualitative phase and selects participants of qualitative strand based on the initial results of quantitative strand (Creswell & Plano Clark, 2011; Tashakkori & Teddlie, 1998). In a sense in this variant the researcher use quantitative strand design as a tool to form sampling of qualitative strand.

The exploratory sequential design

The exploratory sequential is a mixed methods design called the instrument development design or the quantitative follow-up design (Morgan, 1998) in which the researcher develops an instrument in quatitative strand in the second phase of the research based on the results of qualitative strand in the first phase so qualitative strand has greater priority within the design. It has two sub-variants: ***instrument-development variant*** in which the qualitative phase is in a secondary position so as to gather information to build a quantitative instrument or questionnaire needed for the quantitative phase and ***theory-development variant*** in which the researcher conduct the qualitative strand to develop a theory and then examines the prevalence of the findings and/or tests the theory with a larger sample in order to generalize the findings to the population of the study (Creswell & Plano Clark, 2011; Morgan, 2014; Morse, 1991).

The embedded design

The embedded design is a mixed methods design in which depending on the priority of primary design, either quantitative or qualitative is used by a researcher, as the supplemental method in order to enhance the application of quantitative or qualitative design. It has three sub-variants: ***embedded experimental variant*** in which the researcher embeds qualitative data within an experimental trial, **embedded correlational variant** in which the researcher embeds qualitative data within usually two or sets of quantitative data correlated to each other and ***embedded instrument development and validation variant*** in which the researcher embeds qualitative data within developed and validated quantitative instrument (Creswell & Plano Clark, 2011).

The multiphase design

The multiphase design is a mixed methods design which provides a primary methodological framework to a multiyear project in multiple phases to develop a whole program of research or evaluation. In multiphase design strands are implemented concurrently or sequentially and if sequential, primary design can be either quantitative or qualitative and in advance a mixed methods design either convergent or sequential can be employed. It has three sub-variants ***large-scale program development and evaluation projects, multilevel statewide studies and single mixed methods studies that combine both concurrent and sequential phases*** (Creswell & Plano Clark, 2011).

The transformative design

The transformative design is a mixed methods design that the researcher employ the research in a transformative theoretical framework. According to the context of the transformative framework, interaction, priority, timing, and mixing of strands are decided and employed. This design is "change oriented and seeks to advance social justice causes by identifying power imbalances and empowering individuals and/or communities" (Greene, 2007). For example, the researcher using a feminist perspective may utilize a transformative design to quantitatively uncover and then qualitatively illuminate how the stereotypes of female managers have served to keep them away from management position within their work context. Three variants of the transformative design are (1) ***the feminist lens transformative variant,*** in which the researcher frames the study using a feminist theoretical lens; (2) ***the disability lens transformative variant***, in which the researcher frames the study using a disability theoretical lens; and (3) **the socioeconomic class lens transformative variant**, in which the researcher frames the study using a socioeconomic class theoretical lens. (Creswell & Plano Clark, 2011).

Discussion and Conclusion

Habermas's (1987) three knowledge-constitutive interests and Burrell & Morgan's (1979) four paradigms are effective stances used to advocate MMR since they inquiry social phenomena based on two main analytical approaches, objective and subjective viewpoints.

As seen in Table 3, after scrutinizing social science researches in terms of three knowledge-constitutive interests and four main and sub-paradigms in MMR, it can be concluded that the radical structuralist paradigm based on positivism is very compatible with quantitative strand of MMR because according to its assumption, it utilizes natural science methods to study its subject areas mainly experimental and manipulative design based on knowledge nature of verified hypothesis that are established as facts of law (Guba & Lincoln, 2004, Gunbayi & Sorm, 2018).

Table 3.

Knowledge-constitutive interests and social paradigms in guiding MMR

Knowledge-constitutive interests	Main Paradigms	Social Sub-Paradigms Guiding Social Research	Types of Research Design
Technical	Positivism	Radical structuralist paradigm	Technical action research Mixed embedded design
Technical	Post-positivism	Functionalist paradigm	Mixed explanatory sequential design Mixed convergent parallel design Mixed multiphase design Mixed embedded design
Hermeneutic	Post-modernism	Interpretive paradigm/ Constructivism	Mixed convergent parallel design Mixed exploratory sequential design

			Mixed multiphase design Mixed embedded design
Emancipatory	Post-modernism	Radical humanist paradigm/ Critical theory	Participatory action research Emancipatory action research Mixed transformative design

Additionally, functionalist paradigm based on post-positivism is very compatible with quantitative strand of MMR because according to the realistic assumption, it utilizes natural science methods to study its subject areas: questionnaire, statistical analysis, test, measurement based on knowledge nature of nonfalsified hypothesis that are probably facts of law (Guba & Lincoln, 2004, Gunbayi & Sorm, 2018).Shortly, when objective approach based on knowledge nature of nonfalsified hypothesis that are probably facts of law or verified hypothesis that are established as facts of law is used in the quantitative strand of MMR, it can be said that radical structuralist paradigm or functionalist paradigm and technical interest guide quantitative strand of MMR because it is realist, post-positivist, determinist and nomothetic.

On the other hand, interpretive paradigm based on post-modernism is very compatible with qualitative strand of MMR because according to hermeneutic assumption, it utilizes social science methods to study its subject areas: face to face interview, participatory observations, real-life documents, focus group interviews based on knowledge nature of individual reconstructions coalescing around consensus (Guba & Lincoln, 2005; Gunbayi & Sorm, 2018; Wilson, 2002).

Besides, radical humanist paradigm is also very compatible with qualitative strand of MMR because it aims to free oneself from environmental constraint and power of others, virtual reality shaped by social, political, cultural, economic, ethnic, and gender values crystallized over time, over self and awareness. (Bali, Wickramasinghe & Lehaney, 2009; Guba & Lincoln, 2004, Gunbayi & Sorm, 2018).

Shortly, when subjective approach based on knowledge nature of individual reconstructions coalescing around consensus or the aim to free oneself from environmental constraints and power of others over self and awareness is used in the quantitative strand of MMR, it can be said that interpretive paradigm based on hermeneutic practical interest leading understanding and interpretation or radical humanist paradigm based on emancipatory interest leading freedom guides qualitative strand of MMR because it is nominalist, anti-positivist, voluntarist and idiographic.

Although the umbrella philosophy of mixed methods studies is pragmatism, after discussing the application of four paradigms and Habermas's theory of knowledge-constitutive interests of technical, hermeneutic and emancipatory into MMR, it can be concluded that the functionalist paradigm based on post-positivism and technical interest was very compatible with most quantitative strand of MMR. The interpretive paradigm based on post-modernism and hermeneutic interest is well suited to most of the qualitative strand of MMR. From the perspective of the radical humanist paradigm based on post-modernism and emancipatory interest, it is highly applicable to participatory action research, emancipatory action research and mixed typed transformative design and radical structuralist paradigm based on positivism and technical interest is very suitable with technical action research, mixed typed embedded design. However, some research designs include two paradigms; for example, mixed converging parallel, mixed multiphase design and mixed embedded design.

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