

**REVIEW OF RESEARCHES BASED ON MIXED METHODS
APPROACH SPECIAL REFERENCE TO DEFINITIONS AND
TYPES OF MIXED METHOD RESEARCH**

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ABSTRACT

There have been numerous waves in research and these waves are quantitative, qualitative and mixed method. Researchers who refuted the quantitative paradigm's assumptions and principles turned to the qualitative research paradigm. During the 1960s, that the concept of mixing the two approaches was introduced.

This paper highlights the definition and advantages of mixed methods research and also give the idea about uses of mixed method research in various fields by the review of researches.

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Full Paper

There have been numerous waves in research. In many disciplines, the quantitative research prototype, which incorporates multiple types of quantitative research designs, was the first and only research design choice. At the revolve of the 20th century, researchers who refuted the quantitative paradigm's assumptions and principles turned to the qualitative research paradigm. During the 1960s, that the concept of mixing the two approaches was introduced. Since the 1960s mixed methods research has become more popular in many disciplines including education. Today, the primary philosophy of mixed research is that of pragmatism. Mixed methods research is, generally speaking, an approach to knowledge (theory and practice) that attempts to consider multiple viewpoints, perspectives, positions, and standpoints (always including the standpoints of qualitative and quantitative research).

We don't say that the mixed methods is a new approach, researcher for many years have collected both quantitative and qualitative data in the same studies. Greene (2008) asked the question, "Is mixed methods social inquiry a distinctive methodology?" The answer today seems to be "Yes." Mixed methods research combines quantitative and qualitative research methods in different ways, with each approach adding something to the understanding of the phenomenon. If mixing methods offers a better understanding of the research problem than a single method design, then it is worth considering. In current scenario practitioners, evaluators, policymakers, and funding agencies now recognize that combining multiple forms of data within a single study is not only justifiable but also, preferable. Thus the idea of mixing the data, the specific types of research designs, the terminology and the challenges and the issues in using different designs – all topics found in this paper.

1.1 Definitions of Mixed Methods Research

The popularity of mixed methods has grown exponentially during the past 30 years; and mixed methods research has become popular as the newest development in research methods and in approaches to "mixing" quantitative and qualitative research.

A mixed methods research design is a procedure for collecting, analyzing, and "mixing" both quantitative and qualitative methods in a single study or a series of studies to understand a research problem (Creswell & Plano Clark, 2011).

By using this design, there is need to understand both quantitative and qualitative research. Mixed methods research is not simply collecting two distinct “strands” of research – quantitative and qualitative. It consists of merging, integrating, linking, or embedding the two “strands”. In short, the data are “mixed” in a mixed methods study.

In addition to multiple operationalism and triangulation, the third methodological movement (an intellectual and practical synthesis) has been given many names. Here are a few: blended research (Thomas, 2003), integrative research (Johnson & Onwuegbuzie, 2004), multimethod research (e.g., Hunter & Brewer, 2003; Morse, 2003), multiple methods (Smith, in press), triangulated studies (cf. Sandelowski, 2003), ethnographic residual analysis (Fry, Chantavanich, & Chantavanich, 1981), and mixed research (Johnson, 2006; Johnson & Christensen, 2004). An advantage of the broader term mixed research, as well as integrative research, is that it does not suggest a limitation of mixing to methods only.

According to Valerie Caracelli “A mixed method study is one that plan fully juxtaposes or combines methods of different types (qualitative and quantitative) to provide a more elaborated understanding of the phenomenon of interest (including its context) and, as well, to gain greater confidence in the conclusions generated by the evaluation study”.

According to Huey Chen “Mixed methods research is a systematic integration of quantitative and qualitative methods in a single study for purposes of obtaining a fuller picture and deeper understanding of a phenomenon. Mixed methods can be integrated in such a way that qualitative and quantitative methods retain their original structures and procedures (pure form mixed methods). Alternatively, these two methods can be adapted, altered, or synthesized to fit the research and cost situations of the study (modified form mixed methods).

According to John Creswell “Mixed methods research is a research design (or methodology) in which the researcher collects, analyzes, and mixes (integrates or connects) both quantitative and qualitative data in a single study or a multiphase program of inquiry. Above definitions reveals that mixed methods research is formally defined here as the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study.

1.2 Advantages of Mixed Methods Research

On the basis of definitions of mixed methods research given by the researcher there are many advantages of mixed methods researches among them (According to Jick):-

- It allows researchers to be more confident of their results.
- It stimulates the development of creative ways of collecting data.
- It can lead to thicker, richer data.
- It can lead to synthesis or integration of theories.
- It could also provide more comprehensive answers to research questions, going beyond the limitations of a single approach.

A number of factors have contributed to the evolution of mixed methods research. A combination of both forms of data can provide the most complete analysis of problems. Researchers can situate numbers in the contexts and words of participants, and they can frame the words of participants with numbers, trends, and statistical results.

1.3 Researches Based on Mixed Methods Research

As with the other research approaches, mixed methods research is not without controversy. There are concerns about the time and expertise necessary to combine quantitative and qualitative research with one study, as well as the resources and funding necessary to conduct large scale, more complicated projects. Some argue that often the only way to properly conduct a mixed methods study is to create a team in which some members are skilled at conducting quantitative research and others qualitative research. Which can be shown by the collection of mixed methods researches by the review of literature which has shown as below:

Bryman, Alan , (2006), presented a paper on “how we think about mixed methods research.” In this paper author explain about mixed methods research seeks to move beyond typologies of the ways in which quantitative and qualitative research are integrated to an examination of the ways that they are combined in practice. This research is based on a content analysis of 232 social science articles in which the two were combined. An examination of the research methods and research designs employed suggests that on the quantitative side structured

interview and questionnaire research within a cross-sectional design tends to predominate, while on the qualitative side the semi-structured interview within a cross-sectional design tends to predominate. An examination of the rationales that are given for employing a mixed-methods research approach and the ways it is used in practice indicates that the two do not always correspond. The implications of this finding for how we think about mixed-methods research are outlined.

Burke R. Johnson, (2007), carried out a study on “Toward a Definition of Mixed Methods Research” The purpose of this research is to examine how the field of mixed methods currently is being defined. The authors asked many of the current leaders in mixed methods research how they define mixed methods research. The authors provide the leaders' definitions and discuss the content found as they searched for the criteria of demarcation. The authors provide a current answer to the question, What is mixed methods research? They also briefly summarize the recent history of mixed methods and list several issues that need additional work as the field continues to advance. They argue that mixed methods research is one of the three major “research paradigms” (quantitative research, qualitative research, and mixed methods research). The authors hope this research will contribute to the ongoing dialogue about how mixed methods research is defined and conceptualized by its practitioners.

Nicola Jones and Andy Sumner (2007), presented a paper on “Does Mixed Methods Research Matter To Understanding Childhood Well-Being”. The purpose of the research is to explore the particular challenges and opportunities surrounding mixed methods approaches to childhood wellbeing. We argue that there are additional layers of complexity due to the distinctiveness of children’s experiences of deprivation or ill-being. This paper is structured as follows. Sections 2 and 3 discuss the nature of mixed methods approaches and tensions. Sections 4 and 5 apply these debates to researching childhood well-being in particular, in both Northern and Southern contexts. Section 6 concludes and discusses future work.

Jonshen, B. (2010), carried out a study on “Educational research: quantitative, qualitative, and mixed approaches, A clear and in-depth understanding of the varied research methods that are used in education today...” This is a superior study with many features that make for an excellent research...This study does an excellent job of defining the varying types of research and settles the question of whether qualitative or quantitative is superior for educational research by

including mixed research models as a preferred model in some cases...I would recommend [this text] as a "must have" for anyone involved in research and program evaluation.

Charles L, McLafferty (2010), presented a paper on “Transcending the Quantitative-Qualitative Divide with Mixed Methods Research: A Multidimensional Framework for Understanding Congruence and Completeness in the Study of Values”. The paper reveals that Quantitative research dominates published literature in the helping professions. Mixed methods research, which integrates quantitative and qualitative methodologies, has received a lukewarm reception. The authors address the dimensional viewpoint as a framework for successful integration of mixed methods research. This dimensional perspective demonstrates that mixed methods research techniques are necessary but not sufficient to study spiritual, ethical, and religious value issues. Research of career development, "best practices," nature-nurture, and prayer illustrate weaknesses and opportunities for evaluating dimensional mixed methods approaches.

Palinkas , Lawrence A. and et. al.(2010), carried out a study on “Mixed Method Designs in Implementation Research”. This article describes the application of mixed method designs in implementation research in 22 mental health services research studies published in peer-reviewed journals over the last 5 years. Analysis revealed 7 different structural arrangements of qualitative and quantitative methods, 5 different functions of mixed methods, and 3 different ways of linking quantitative and qualitative data together. Complexity of design was associated with number of aims or objectives, study context, and phase of implementation examined. By the findings of this article author suggest for the use of mixed method designs in implementation research.

Newman, Isadore (2013), presented a paper on “Content Validity Using a Mixed Methods Approach Its Application and Development Through the Use of a Table of Specifications Methodology” There is paucity of detailed information in the literature on how to develop procedures for estimating content validity to increase trustworthiness of assessment instruments. The authors present three unique examples, interpretation, and application of Tables of Specifications (ToS) for generating these estimates. The development and logic of the ToS requires presenting evidence that has transparency and creates trustworthiness in the validity estimates by maintaining an audit trail and using of triangulation, expert debriefing, and peer

review. The argument presented is that content validity requires a mixed methods approach since data are developed through qualitative and quantitative methods that inform each other. This process is iterative and provides feedback on the effectiveness of the ToS through a process of determining consensus.

Hemmings, Annette (2013) carried out a paper on “Building a Community of Research Practice Intragroup Team Social Dynamics in Interdisciplinary Mixed Methods” This article explicates the intragroup social dynamics and work of a nursing and education research team as a community of research practice interested in organizational cultures and occupational subcultures. Dynamics were characterized by processes of socialization through reeducation and group social identity formation that enabled members to cross discipline-bordered traditions and produce interdisciplinary mixed methods combinations. At methods and technique levels, such achievements were accomplished through methodological capitalization and prioritization and the development of a quantitative culture assessment tool that can be used in combination with complementary qualitative observation and interview protocols.

Windsor, L.M. (2013) presented a paper on “Using Concept Mapping in Community-Based Participatory Research” A Mixed Methods Approach” Community-based participatory research (CBPR) has been identified as a useful approach to increasing community involvement in research. Developing rigorous methods in conducting CBPR is an important step in gaining more support for this approach. The current article argues that concept mapping, a structured mixed methods approach, is useful in the initial development of a rigorous CBPR program of research aiming to develop culturally tailored and community-based health interventions for vulnerable populations. A research project examining social dynamics and consequences of alcohol and substance use in Newark, New Jersey, is described to illustrate the use of concept mapping methodology in CBPR. A total of 75 individuals participated in the study.

Daigneault, Pierre-Marc (2013) carried out a study on “Mixed Methods for the Validation and Revision of the Participatory Evaluation Measurement Instrument” Although combining methods is nothing new, more contributions about why and how to mix methods for validation purposes are needed. This article presents a case of validating the inferences drawn from the Participatory Evaluation Measurement Instrument, an instrument that purports to measure stakeholder participation in evaluation. Although the process was intended to be almost

exclusively quantitative, one of its components unexpectedly turned into a mixed methods study. This, in turn, spurred on a cycle of instrument revision and further quantitative validation. Whereas the validation evidence is modest and tentative, it suggests that the revised version of the Participatory Evaluation Measurement Instrument offers a better fit with the respondents' opinions regarding the participation level of selected evaluation cases. The article concludes with a brief discussion on the added value of mixed methods for validation purposes.

Ivankova, Nataliya V. (2013) presented a paper on “Implementing Quality Criteria in Designing and Conducting a Sequential QUAN → QUAL Mixed Methods Study of Student Engagement With Learning Applied Research Methods Online” In spite of recent methodological developments related to quality assurance in mixed methods research, practical examples of how to implement quality criteria in designing and conducting sequential QUAN → QUAL mixed methods studies to ensure the process is systematic and rigorous remain scarce. This article discusses a three-step procedure for securing the quality of the meta-inferences generated from sequential employment of quantitative and qualitative methods and offers several validation strategies specific to a sequential QUAN → QUAL mixed methods design: applying a systematic process for selecting participants for qualitative follow-up, elaborating on unexpected quantitative results, and observing interaction between qualitative and quantitative study strands. The discussed procedures are illustrated using a mixed methods study of graduate student engagement in learning applied research methods online.

Freshwater, Dawn (2014) carried out a study on “**Mixed Methods Research and the Production of Contextualized Knowledge**” It was in the mid seventeenth century that Cardinal John Henry Newman (1858), in his foundational text “The Idea of a University,” first clearly articulated the purpose of the University as being about the pursuit of learning. The emphasis was specifically on learning associated with a liberal education based on the tenet that knowledge is valuable in its own right. Nevertheless, this original invocation of the University has been contested longer than is commonly recognized. It was Michael Oakeshott (1950/1989) who most openly predicted the demise of the so-called “Enlightenment” university and the threat to scholarship posed by “the emerging corporate mission of industrial-scale research” (Rolfe, 2012, p. 733). Since the 1980s, debates around the corporatization of public institutions have intensified in response to what has been termed the “McDonalidization” of higher education. This

concept, developed most fully by the sociologist George Ritzer (1993), is a now familiar backdrop to most scholarly debates around the standardisation and cost effectiveness of knowledge production, and indeed the purpose of research within the McVersity.

1.4 Analysis and Discussions

It is felt from the review of above literature that are given for employing a mixed-methods research approach and the ways it is used in practice. The implication of the finding shows that how we think about mixed-methods research.

A number of factors have contributed to the evolution of mixed methods research. The complexity of our research problems calls for answers beyond simple numbers in a quantitative sense or words in a qualitative sense. A combination of both forms of data can provide the most complete analysis of problems.

For the analysis of above mention data let us draw a table

Table 1.1 Analyses of Researches on Mixed Methods Research

Author Name	Topic Name	Main Points	Discussions
Bryman, Alan	How We Think About Mixed Methods Research	Definitions, Collection of Data and Design of MMR	In this research for data collection both i.e. quantitative as well as qualitative tools used and findings shows that how we think about MMR.
Jonshen, B.	Toward a Definition of Mixed Methods Research	Definitions, History, Need and Issues of MMR	Answered about the recent history of MMR and examine how the field of mixed methods is currently is being used.
Nicola Jones and Andy Sumner	Does Mixed Methods Research Matter To Understanding Childhood Well-Being	Explore the knowledge of MMR	Uses of MMR in Educational psychology
Jonshen, R. B.	Educational research:	Focus on quantitative,	In depth understandings of the

	quantitative, qualitative, and mixed approaches, A clear and in-depth understanding of the varied research methods that are used in education today	qualitative and MMR	varied research methods that are used in today ie quantitative .qualitative and MMR
Charles L,	Transcending the Quantitative-Qualitative Divide with Mixed Methods Research :A Multidimensional Framework for Understanding Congruence and Completeness in the Study of Values	Focus on quantitative, qualitative and MMR	Mixed methods research, integrates quantitative and qualitative methodologies, has received a lukewarm reception. The authors address the dimensional viewpoint as a framework for successful integration of mixed methods research.
Palinkas , Lawrence A.	Mixed Method Designs in Implementation Research	Focus on history and definition of MMR	Analysis revealed 7 different structural arrangements of qualitative and quantitative methods, 5 different functions of mixed methods, and 3 different ways of linking quantitative and qualitative data together.
Newman	Content Validity Using a Mixed Methods Approach Its Application and Development Through the Use of a Table of Specifications Methodology	Tools of MMR	to develop procedures for estimating content validity to increase trustworthiness of assessment instruments by the use of mixed method approach.
Hemmings	Building a Community of Research Practice Intragroup Team Social Dynamics in Interdisciplinary Mixed Methods	Focus on Interdisciplinary mixed methods	Research explicates the intragroup social dynamics and work of a nursing and education research team as a community of research

			practice by using the MMR
Windsor	Using Concept Mapping in Community-Based Participatory Research A Mixed Methods Approach	Advantages of MMR.	article argues that concept mapping, a structured mixed methods approach, is useful in the initial development of a rigorous CBPR program of research
Daigneault	Mixed Methods for the Validation and Revision of the Participatory Evaluation Measurement Instrument	Mixed Methods as a measurement instrument.	This article concludes with a brief discussion on the added value of mixed methods for validation purposes.
Ivankova	Implementing Quality Criteria in Designing and Conducting a Sequential QUAN → QUAL Mixed Methods Study of Student Engagement With Learning Applied Research Methods Online	Types of MMR.	Researcher reflects the designing and conducting sequential QUAN → QUAL mixed methods studies to ensure the process is systematic and rigorous
Freshwater	Mixed Methods Research and the Production of Contextualized Knowledge	Contextual knowledge of MMR	To develop concept of MMR

1.5 Conclusions

From the table 1.1, it is conclude that there is not denying the effect of mixed methods approach in every field of educational researches. After the review of papers on MMR, Says that:

- It allows researchers to be more confident of their results.
- It stimulates the development of creative ways of collecting data.

- It could also provide complete answers to research questions, going beyond the limitations of a single approach.

A number of factors have contributed to the evolution of mixed methods research. A combination of both forms of data can provide the most complete analysis of problems. Researchers can situate numbers in the contexts and words of participants, and they can frame the words of participants with numbers, trends, and statistical results. And when discuss about the types of MMR then there are several types of MMR but mostly researcher focus on below mention types of MMR i.e.

Convergent Parallel Design, Embedded Design, Explanatory Design, Exploratory Design, Sequential Embedded Design. Lastly As with the other research approaches, mixed methods research is not without controversy. There are concerns about the time and expertise necessary to combine quantitative and qualitative research with one study, as well as the resources and funding necessary to conduct large scale, more complicated projects.

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