
APPLICATION OF MIXED-METHODS RESEARCH IN PAKISTAN: EMERGING ISSUES AND CHALLENGES

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ABSTRACT

Mixed-methods research (MMR) is considered as most influential research since the 1990s. In recent years (2010 and onwards), there has been a growing tendency to conduct educational research using Mixed-Methods Research (MMR) worldwide. This study was designed to investigate the issues and challenges associated with the application of mixed-method research in higher education institutes. The objectives of the study were i) to find out the perceptions of faculty members regarding the application of mixed-method, ii) to find out the issues faced by faculty members in the application of Mixed-Methods research, and iii) to find out the challenges faced by faculty members regarding the application of Mxed-Methods Research. Concurrent triangulation design of mixed method was used as the design of the study. The population of the study comprises all faculty members and research students of five public sector universities. Using purposive sampling, 62 faculty members from departments of education of five public sector universities using mixed-method research were selected as samples. A tailor-made questionnaire and an interview were used as data collection tools. The percentage was used to analyze the quantitatce data, while thematic analysis was done for analysis of interview data. The study's findings revealed that faculty members have serious issues about the

understanding of mixed-methods research like not being aware of the concerns related to internal and external validity, and limited expertise in data mixing and interpretation of mixed data. It was also found that faculty members faced many challenges, including an understanding of the term Mixed-Methods and triangulation, improper training, and less academic and professional support provided to faculty members. Besides, the most crucial challenge was the unavailability of previous research on this pattern to use as a model. Based on these findings, it is recommended that appropriate training might be provided to faculty members, and mixed-method research courses should be included in teachers' training programs.

KEYWORDS

Mixed-Methods Research, Issues, Challenges

INTRODUCTION

Qual-Quant discussion in educational research has a long history. Quantitative research experts claimed that numbers and accurate measures could provide detailed and authentic knowledge (Reilly, Kiyimba & Drewett 2021). On the other hand, Fielding and Fielding (1986) pointed out that qualitative experts claimed that there is a need for a holistic view of the situation, which cannot be obtained by numbers only; it needs an in-depth investigation and qualitative data. Scientifically speaking, both approaches have long been associated with different and opposite paradigmatic research approaches. They have different assumptions about ontology and epistemology. The idea that one's paradigmatic view of the world might be related to the way one went about researching the world was prompted initially by Kuhn (1963), while Guba and Lincoln's work on naturalistic inquiry (e.g. Lincoln & Guba, 1985) contributed significantly to the "paradigm wars" of the '80s. They argue that all scientific observation, data collection, data analysis, and theorizing involve interpretation based on context, and most of the investigation provides a base for developing a theory.

Creswell (2011) stated a growing tendency to conduct Mixed-Methods Research (MMR) in higher education. The development of Mixed-Method Research did not happen without some debate. Some researchers are debating the issues of incompatibility and impossibility if both quantitative and qualitative research methods are applied in one study (Foss & Ellefsen, 2002). On the other hand, Begley (1996) argues that data gathered using Mixed-Methods can be put together to form a better and clear picture of the study (Begley, 1996). However, they all agree that using multiple methods will increase the accuracy of the results of a research study (Begley, 1996; Foss & Ellefsen, 2002; Risjord et al., 2002; Halcomb & Andrew, 2005) and the tendency to combine quantitative and qualitative methods is becoming more

prevalent in research methodologies in the humanistic and social sciences. With these methodological usability debates, another issue is a related problem and associated challenges in conducting Mixed Method Research.

Mixed Methods Research and debates related to these paradigms are remaining a bone of contention. This results in developing misunderstandings and less understanding of the phenomenon. Mixed Methods Research gained attraction and attention in the last decade all over the world. In Pakistan, it is now considered one of the most popular approaches of research, and everyone is trying to conduct a Mixed-Method Research in education. In this scenario, it is necessary to investigate faculty members' perceptions regarding its application, issues, and related. So the problem to be investigated is “what are the perceptions, issues, and challenges faced by faculty members in using Mixed-Method Research designs.

This study would benefit the faculty members of departments of education in Pakistan who are using Mixed-Method Research. This research will be beneficial for course developers and teachers teaching research at graduate and post-graduate levels to change their contacts with new content. The research would be helpful for senior faculty members to revise and update their knowledge and views about research paradigms. The study will be helpful to understand some research issues and challenges and find out the problems associated with this type of research.

LITERATURE REVIEW

These paradigmatic debates can never be resolved. This results in a series of rejoinders in the early 1990s who had given paradigms so much attention and a shift in emphasis to the more tractable issues of design and methods (Krantz, 1995) and features of the knowledge claims that could be generated (Greene & Caracelli, 1997). Thus, according to Miles and Huberman (1994, p.41): “The question, then, is not whether the two sorts of data and associated methods can be linked during study design, but whether it should be done, how it will be done, and for what purposes. In other words, the main focus is on the process of mixing data rather than objective and outcome.

Following their review of 56 Mixed-Methods studies, Greene, Caracelli and Graham (1989) concluded: “Our own thinking to date suggests that the notion of mixing paradigms is problematic for designs with triangulation or complementary purposes, acceptable but still problematic for designs with a development or expansion intent, and actively encouraged for designs with an initiation intent” (Greene et al., 1989, p.271). The emergence of Mixed-Method Research has a long past and standing. Here is a glimpse of some important events:

1. Up to the 1970s, positivism reigned supreme as its adherents tried to elevate this approach to the uppermost epistemic position, such that —doing quantitative became the gold standard of education research (Howe and Eisenhardt, 1990).
2. Jick (1979) considered the issue of mixing methodologies within organizational research
3. In the era of 1980s, the golden age of qualitative research, the constructivist-interpretive paradigm had become firmly entrenched within several fields, including that of education (Denzin & Lincoln, 1986).
4. At the same time, alternative and supportive epistemological stances in the qualitative arena, such as critical theory and feminism. (Denzin & Lincoln, 2007)
5. Tashakkori and Teddlie (2006) argued that the term “mixed model” is more appropriate than “mixed method” for research in which different approaches are applied at any or all of several stages through the research, their point being that mixing often extends beyond just the methods used in the research.

This definition which is considered the latest and most straightforward definition implies that mixing may occur at any stage of inquiry and in any way. For example, in social history, or when scientists engage in social research to evaluate the impact of their work. But for any type of Mixed-Method Research, it is necessary to clarify just what is being mixed and *how* it is being mixed. The “mixing” may be nothing more than a side-by-side or sequential use of different methods, or it may be that other methods are being fully integrated with a single analysis (Caracelli & Greene, 1997).

Onwuegbuzie, and Leach (2004), stated that the term *Mixed-Method Research* had gained ascendancy over alternatives like *integrative research* and *mixed research*. The *mixed-methods* label suggests that it is the methodologies and not the mixed-methods. Onwuegbuzie and Johnson. (2004) provide a synthesis of 19 definitions:

Mixed-Method Research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the general purposes of breadth and depth of understanding and corroboration (p. 123).

Johnson et al (2004) also distinguished among three subtypes of Mixed-Method Research —qualitative dominant, pure mixed, and quantitative dominant. So the concepts of designs as in Creswell has not emerged here. Combining methodologies

within a broad quantitative or qualitative approach may raise almost as many issues as when working across approaches (Reilly, Kiyimba and Drewett 2021).

A research design addresses different aspects of the research procedure, from philosophical assumptions to data analysis. A design might be considered mixed if it employs qualitative and quantitative (Morse and Niehaus 2009).

The approaches at any stage, including research questions development, sampling strategies, data collection approaches, data analysis methods, or conclusions (Creswell & Plano 2011; Creswell & Tashakkori, 2007). Mixed method designs are easily distinguishable from mono-method studies, which make use of a single approach. However, Tashakkori & Teddlie (1998) consider integration to be the primary criterion for determining mixed-methods status. Thus, they defined *quasi-Mixed-Methods research designs* as studies that make use of two or more approaches at some stage while failing to integrate the methods in any way. Such studies are relatively common (Bryman, 1998)

According to Morse (1991), there are many benefits of Mixed-Method Research. For example, Mixed Methods Design can be based on either or both perspectives, Research problems can become research questions and/or hypotheses based on prior literature, knowledge, experience, or the research process, Sample sizes vary based on methods used, data collection can involve any technique available to researchers and interpretation is continual and can influence stages in the research process.

Another relevant question is why any researcher may use Mixed-Method Research. There may be several answers to these questions. The simplest one is to overcome the limitations of single design research. Besides, there are some reasons to select Mixed-Methods Research (MMR) more. A detailed answer involves various reasons to adopt method such as:

1. It helps in explaining and interpreting.
2. It helps in exploring a phenomenon.
3. It is used to develop and test a new instrument.
4. It serves a theoretical perspective like qualitative research.
5. It complements the strengths of a single design.
6. It helps overcome the weaknesses of a single design as it consists of multi-method research.
7. It addresses a question at different levels.
8. It addresses a theoretical perspective at different levels.

Beside these advantages, there are several strengths of MMR. Some of the strengths of MMR are:

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1. It can be easy to describe and report.
 2. It can be helpful when unexpected results arise from a prior study.
 3. It can help to generalize qualitative data.
 4. It can be beneficial in designing and validating an instrument.
 5. It can position research in a transformative framework.

Despite these strengths, there is some weakness of MMR also. These are :

1. MMR is time-consuming and requires more time than mono-method research.
2. It is challenging to resolve discrepancies between different types of data. As Mixed-Method contains both kinds of data, there are discrepancies in data (Rossman and Wilson 1985)
3. Some designs generate unequal evidence and develop a bone of contraction.
4. It can be demanding to decide when to proceed in sequential designs. (Teddlie and Tashakkori. 2003).

RESEARCH OBJECTIVES

1. To find out the perceptions of faculty members regarding the application of the Mixed-Methods in academic research.
2. To find out the issues faculty members face in applying Mixed-Method Research.
3. To find out the challenges faced by faculty members regarding the application of Mixed-Method Research.

RESEARCH METHODOLOGY

The researcher used a Concurrent design of Mixed Methods Research design. In this design, qualitative and quantitative data were collected and analyzed separately and then merged. The study population comprises all faculty members and students of five public sector universities of Pakistan. By using Purposive sampling, 71 teachers were selected using theoretical sampling. A closed-ended questionnaire and interview were used as data collection tools. Furthermore, to analyze quantitative data, simple percentages were calculated and qualitative data were analyzed by using thematic analysis.

Data Presentation and Analysis

Data collected by qualitative and quantitative tools which were as under

Table 1: Perception of Faculty members

| S.No | Perception of faculty members | Frequency | Percentage |
|------|-------------------------------|-----------|------------|
| 1 | Easy | 6 | 8.5 |
| 2 | Difficult | 45 | 63.4 |

| | | | |
|---|----------------|----|------|
| 3 | Very difficult | 20 | 28.2 |
| | Total | 71 | 100 |

The results of the above table can be seen in the following figure:

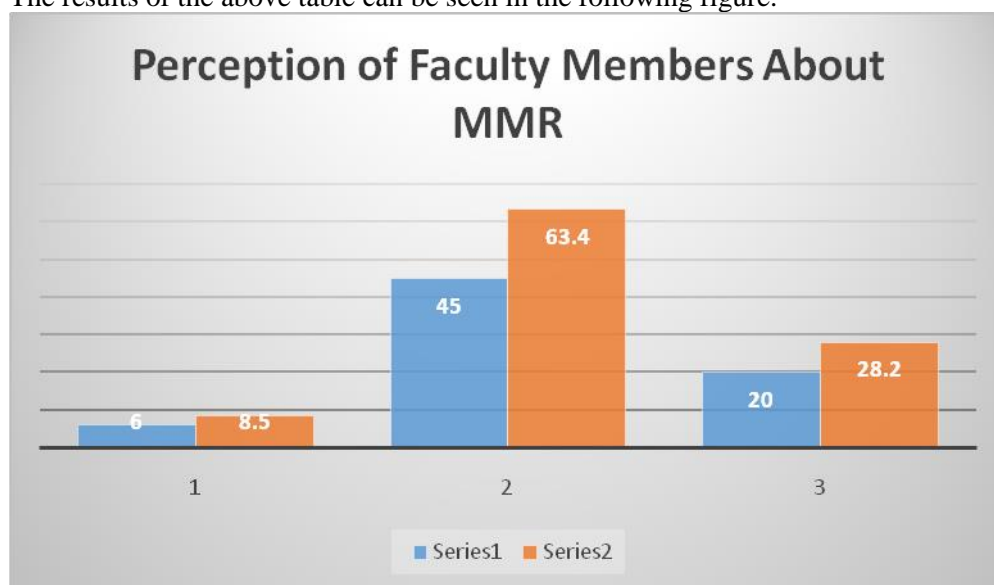


Table 1 and graph1 describe the perception of faculty members. They were asked about their views regarding the application of Mixed-Methods Research (MMR) in education. Only 6(8.5 %) stated that it is easy; theremaining 65 (93%) find it either difficult or very difficult. This shows that most faculty members are not accessible with this type of research.

Analysis of interview

An interview was conducted with ten faculty members who are involved in Mixed-Method Research. They identified the following issues:

1. Lack of deep understanding of both types of research
2. Unable to comprehend the need formixing methods
3. Unable to identify topics that need Mixed-Methods
4. Most of the faculty members do not have a sound grip on qualitative and quantitative analysis
5. The merging of qualitative data is another big issue.

Table 2: Issues Faced by Faculty members

The 2nd question is about issues faced by faculty members

| S.No | Issue | Frequency | Percentage |
|-------|--|-----------|------------|
| 1 | Inadequate training | 8 | 11.3 |
| 2 | Acceptance by senior faculty members | 18 | 25.4 |
| 3 | Less opportunity for practice | 22 | 31.0 |
| 4 | Less examples are available | 15 | 21.1 |
| 5 | There are very few researchers who can guide this type of research | 8 | 11.3 |
| Total | | 71 | 100 |

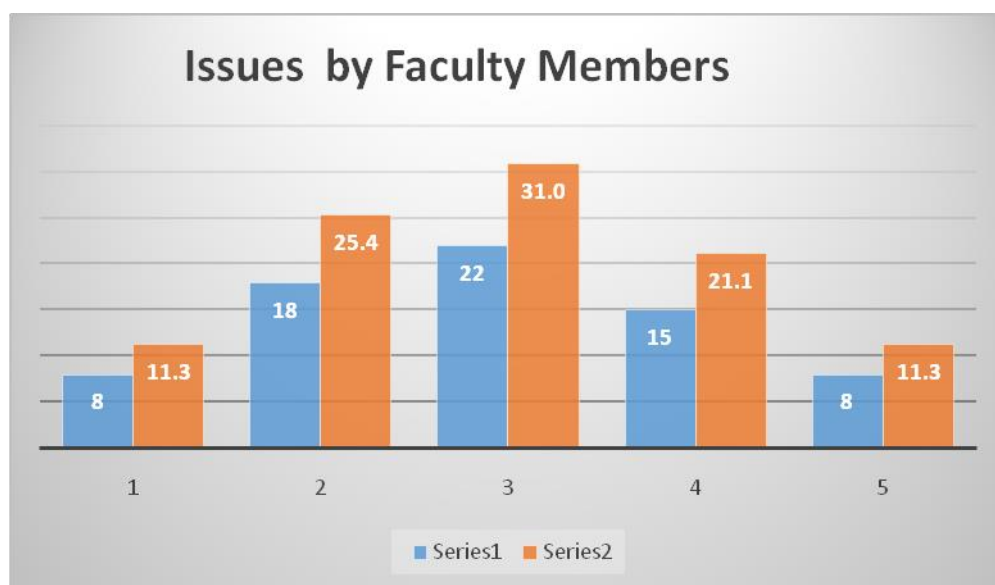


Table 2 and graph 2 represent the responses about issues faced by the faculty members. There were five-issue that the faculty members met. The practice is a significant issue followed by the attitude of senior faculty members. The other issues included less number of examples, lack of training, and lack of guides. This table clearly describes that the fundamental issue is the lack of training and attitudes of seniors, which are inter-related. As it is a new concept, there are few examples and senior faculty.

Table 3: Challenges Faced by Faculty members.

| S.No | Challenge | Frequency | Percentage |
|------|---|-----------|------------|
| 1 | Decision of use | 10 | 14 |
| 2 | Equal weightage to both paradigms of research | 16 | 22.5 |
| 3 | Keeping findings from each method | 33 | 46.5 |

| | | | |
|---|--|----|-----|
| | independent and not affected by other | | |
| 4 | Merging findings | 5 | 7.0 |
| 5 | Both research paradigms place researcher in a different position | 7 | |
| | | | 10 |
| | Total | 71 | 100 |

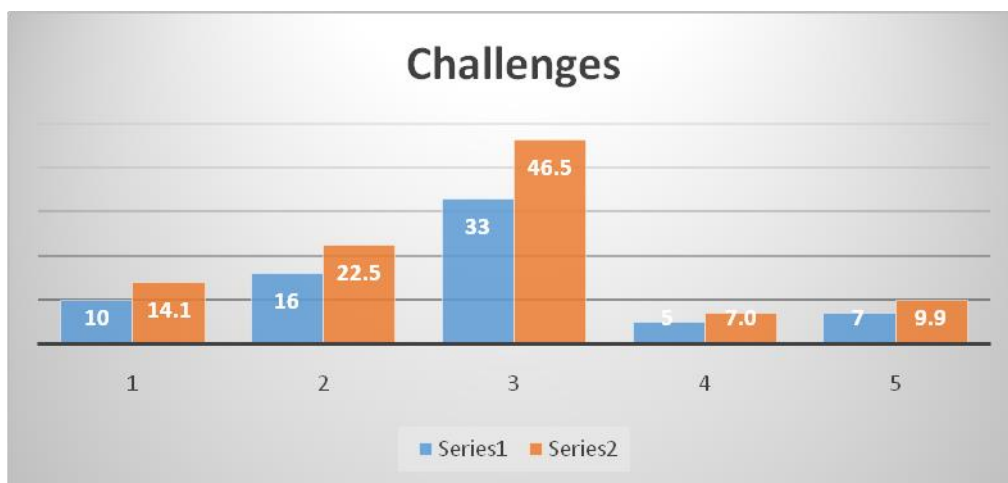


Table 3 and graph 3 clearly show that keeping findings unaffected by each other and organization of findings according to the research design were major issues. First qualitative and quantitative findings presenting separately is the biggest challenge. As a researcher, it is natural to give importance to one type of data, so it is not easy to balance both types of data. The other challenge associated with this is that giving equal weightage to both research paradigms is very difficult. The other difficulties include the decision of use, placing both paradigms independently as a big challenge.

FINDINGS

The first objective was to find out faculty members' perceptions regarding the application of Mixed-Methods in academic research. In this regard, from the quantitative analysis, it was found that most of the teachers (63 %) find it challenging to apply this method. Some researchers (6%) are not aware of Mixed-methods design as they never studied this in their course work. Many researchers (28 %) found it problematic. The main difficulty is that researchers are unable to distinguish between Mixed Methods and triangulation.

This problem is significantly associated with senior faculty members. From an analysis of interviews, it was found that most of the faculty members find it difficult

to tackle both types of data. Many respondents also indicate that many researchers have very little or no knowledge of qualitative data collection and analysis, affecting their perceptions.

The second objective was to find out the issues faculty members face in the application of Mixed-Methods research. In this regard, it was found that the following are the main issues faced by the researchers:

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|---|------|
| 1. Inadequate training | 11 % |
| 2. Acceptance by senior Faculty members | 25 % |
| 3. Less opportunity of practice | 31 % |
| 4. Less examples are available | 21 % |
| 5. There are very few researchers who can guide this type of research | 11 % |

From interview data, it was found that there are two significant issues. Many researchers identified that they did not study this type of research in their studies. The next one is that they are unable to go out of the box thinking and apply the concept; however, they all agree that using multiple methods will increase the accuracy of the results of a research

The last objective was to find out the challenges faced by faculty members. In this regard, it was found that the following are the challenges faced by the faculty members

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|--|--------|
| 1. The biggest challenge is the decision to use | 14.1 % |
| 2. Equal weightage to both paradigms of research | 22.5 % |
| 3. Keeping findings from each method independent and not affected by other | 46.5 % |
| 4. Merging of finding | 7 % |
| 5. Both research paradigms place researchers in different positions. | 10% |

Qualitative findings revealed that the most significant challenges are facilities and refreshing workshops are not conducted by the departments on Mixed Method Research Design. In qualitative research, the researcher is a part of the research, while in quantitative, it is an outside observer. This is a challenge that how research keeps him at two opposite positions. Some of the respondents opined that there should be a separate course on mixed-method research in course work. Some respondents opined that researchers' own prejudice against MMR is the biggest challenge.

CONCLUSIONS

On the basis of the above findings, it was concluded

1. Faculty members find it challenging to apply Mixed-Methods Research

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- (MMR) in actual research situations. (Finding 1.1)
2. There are several reasons, but the main reason is inadequate training and difficulty in differentiating different terminologies like triangulation and Mixed-Methods
 3. The prominent issue faced by faculty members is the attitude of seniors. As this is a new concept, it is not easy to accept by all members of the academia (Finding 2)
 4. Proper training is another big issue. Most faculty members did not study the MMR at master and doctorate levels. This is the main reason that they are unable to conduct this type of research
 5. It was also concluded that when to use is the biggest challenge. (Finding 3.1)
 6. Another challenge is balancing two kinds of data, keeping findings separate from each other, and merging are the main challenges faced by faculty members (finding 3.2-3.5)

RECOMMENDATIONS

1. At the postgraduate level, a course “Mixed-Methods Research” may be introduced.
2. Continuous training courses on MMR may be conducted.
3. Universities may open MMR chapters with the help of mixed-method Research Association.

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