Research in Social Sciences and Technology

https://ressat.org

E-ISSN: 2468-6891

Volume: 8 Issue: 4 2023

pp. 14-36

Conceptualisation and Contextualisation of Mixed-Methods Research: A Review

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10.46303/ ressat.2023.31

Article Info
Received: July 01, 2023
Accepted: August 8, 2023
Published: November 1, 2023

How to cite
Aramide, K., Jacob, U. S., & Pillay, J. (2023). Conceptualisation and contextualisation of mixed-methods research: A review. *Research in Social Sciences and Technology*, *8*(4), 14-36. https://doi.org/10.46303/ressat.2023.31

ABSTRACT

The purpose of this study was to investigate the conceptualisation and contextualisation of mixed-methods research within the research methodology paradigm to ascertain the categorisation of mixed methods as a type of research, research design or research approach. The methodology adopted for this paper is qualitative in nature and involves the analysis of documents and contents. The content of journals and books was analysed to review and draw inferences relating to the themes set out for investigation in the study. Thematic analysis was used for the analysis of data for the study. The study revealed that mixed-methods research was situated within the context of types of research, research design and research approach as evident in the result of the systematic review of the articles selected for the study. Findings from the study further revealed that the conceptualisation of mixed methods within the context type of research and research approach was more than that of a research design. This study is novel and has contributed new knowledge in the aspect of research methodology with specific emphasis and definitive conceptualisation, contextualisation, and categorisation of mixed methods as a type of research, research design or research approach. Just like qualitative and quantitative research, there is a need for definitive conceptualisation, contextualisation, and categorisation of mixed-methods research. Meanwhile, this article is a synthesis for further discourse on mixed-methods research to establish a definitive conclusion on mixed-methods research conceptualisation.

KEYWORDS

Mixed-methods; philosophical perspectives; research design; research methodology; research onion; research approach; type of research.

INTRODUCTION

In the context of research and research methodologies, mixed-methods research is a growing trend that combines the theoretical and philosophical perspectives of quantitative and qualitative research. Mixed-methods research adopts a pragmatic philosophical perspective, considered one of its strengths, unlike quantitative research which tends to have positivist and postpositivist perspectives. Comparatively, qualitative research focuses on constructivism and interpretation. In contrast to conventional qualitative and quantitative research methodologies, mixed-methods research has the advantage of being dynamic and adaptable. As a result of embracing a variety of real-world phenomena, mixed-methods research has gained a great deal of popularity in recent years (Creswell & Plano-Clark, 2017). In addition to offering a comprehensive insight into complex research questions, mixed-methods research allows researchers to peel back complex layers of understanding. It also combines the depth of narratives with the rigor of statistical analysis to break free of the traditional dichotomy of qualitative and quantitative approaches. Hence, qualitative and quantitative research are combined in this methodology.

Mixed-methods research integrates narratives, interviews, observations, and textual analyses to enrich the exploration process and establish patterns, relationships, and generalizability through quantitative analysis. In qualitative research, researchers uncover the underlying meanings and perspectives that quantitative data may miss by capturing the complexity of human experiences (Neelam, 2020). In addition, mixed-methods research has a distinct advantage over qualitative or quantitative research in capturing the complexity of human experience (Aramide, 2023). Researchers can enhance their understanding of complex phenomena by combining methods to investigate their topics' temporal, spatial, and social dimensions. Research designs are chosen for more than just their practicality and ease of use. Knowledge is understood and produced based on philosophical perspectives that guide the choice of research design. Therefore, mixing qualitative and quantitative research methods requires a different philosophical perspective, as they provide different perspectives on the research question (Dawadi et al., 2021). Researchers can develop high-quality research that contributes to our understanding of the world by carefully considering the philosophical underpinnings of their research and choosing a mixed-methods research design that is appropriate for their research question and goals.

Kumar (2008) situated mixed-methods research within the 'critical theory' and pragmatism perspectives which regards the positivist, postpositivist and interpretivist/constructivist perspectives and paradigms as presenting incomplete accounts of social behaviour by their neglect of the political and ideological contexts. According to Kumar, the expressed intention of carrying out research is usually political and focuses on the emancipation of individuals and groups in an egalitarian society. Critical theory is explicitly prescriptive and normative, entailing a view of what behaviour in a social democracy *should* entail (Fay, 1987; Morrison, 1995; Osworth, 2022; Smith, 2020). Its intention is not merely to

give an account of society and behaviour but to realise a society that is based on equality and democracy for all its members. Its purpose is not merely to understand situations and phenomena but to change them. It seeks to emancipate the disempowered, to redress inequality and to promote individual freedoms within a democratic society.

Scholars in research methods and methodologies (Creswell & Creswell, 2017; Creswell, 2018; Asenahabi, 2019; Neelam, 2020) are of the view that mixed-methods research represents an engaging and comprehensive approach that transcends traditional boundaries, allowing researchers to venture into uncharted territories and gain a holistic understanding of complex phenomena – they also note that by harnessing the power of qualitative exploration and quantitative analysis, this methodology unlocks new avenues of knowledge, bridging disciplines, and propelling research to new heights.

Meanwhile, the designation of mixed methods as a type of research or research design remains unsettled as various scholars of research methods continue to situate mixed methods within the context of the type of research as 'mixed-methods research' and of the research design as 'mixed-methods research design'. This lack of definitive conceptualisation and contextualisation of mixed methods continues to generate discord and discourse among scholars. Hence, the need to investigate this phenomenon to initiate a discourse that will lead to a definitive and conclusive description of mixed-methods research. Thus, this paper aims at finding the answer to the question: Is mixed methods a research design?

Statement of the Problem

The conceptualisation and contextualisation of mixed methods as either a research type or research design has remained problematic. Scholars have described mixed methods within the context of a research type, research approach and research design without definitive clarifications. This lack of consensus requires further investigation. Scholars have also tried to provide evidence and criticism to adequately situate mixed methods. Unfortunately, this evidence and criticism, rather than providing clarity and definitive conclusions, continue to push the debates on the conceptualisation of mixed methods into further controversies. This paper aims to initiate a discourse to find a definitive conceptualisation for mixed methods as either a type of research or research design.

Objectives of the Study

The specific objectives of the study were to:

- establish the conceptualisation and contextualisation of mixed-methods research;
- determine whether mixed methods is a type of research or type of research design; and
- set an agenda for further discourse on mixed-methods research.

LITERATURE REVIEW

Contextualisation and Conceptualisation of Research

Research had been described by various authors from various perspectives based on their experiences and knowledge. Research has been described as a careful and systematic way of

solving problems and gaining new knowledge (Thomas et al., 2011). Research is also defined as a systematic process of discovery and advancement of human knowledge to solve a problem or make an innovative contribution to the existing body of knowledge (Gratton & Jones, 2010; Kumar, 2008). Therefore, for something to be counted as research, it has to be systematic and methodical in its approach and procedures and has to meet relevant norms and standards for validity and reliability. Kerlinger (1970) defined research as the systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among natural phenomena. Abubakar and Ahmad (2023) described research as a systematic, logical, scientific, and objective investigation of problems, phenomena, ideas, concepts and knowledge. Leedy (1997) defined research as the systematic process of collecting and analysing information (data) to increase our understanding of the phenomenon with which people are concerned or interested. It is an activity or process through which an attempt is made to systematically and with the support of data, answer a question, resolution of a problem or a greater understanding of a phenomenon. Thus, research involves a scientific, logical, careful, and systematic way of solving problems and gaining new knowledge.

Gratton and Jones (2010) and Kumar (2008) described research as a systematic process of discovery and advancement of human knowledge which should solve a problem or make an innovative contribution to the existing body of knowledge. Hence, it has to be systematic and methodical in its approach and procedures and has to meet relevant norms and standards for validity and reliability. Abubakar and Ahmad (2023) highlighted a major characteristic of research as that of having a specific plan of procedure otherwise known as research design. In other words, researchers plan their overall research in a purposeful way to yield data relevant to their particular research problem. Consequently, research design is a component of research. Tawar (2020) classified research as pure research, applied research, descriptive research, analytical research, fundamental research, conceptual research, empirical research, longitudinal research, laboratory research, exploratory research, and conclusion-oriented research. According to Creswell (2003), research can be classified into three categories of approaches viz. quantitative, qualitative, and mixed methods.

Gliner et al. (2017) further classified research into quantitative, qualitative, and mixed-methods research within the context of six contrasts or dichotomies: (1) theoretical versus applied; (2) laboratory versus field; (3) participant report versus researcher observation; (4) quantitative/postpositivist versus qualitative/constructivist philosophical or *theoretical framework*; (5) quantitative/objective versus qualitative/subjective data and data collection *methods*; and (6) quantitative/statistical versus qualitative/descriptive data *analysis*. Walliman (2017) highlighted the various components of research including the identification of the research problem; literature review; formulation of research questions; research design which may be experimental, observational, qualitative, quantitative, or a combination of these, depending on the research objectives; data collection; data analysis; interpretation of the findings considering the research questions or hypotheses; conclusion; and communication of

results. The final step involves disseminating the research findings through various channels, such as academic publications, conferences, presentations, reports, or online platforms. This allows other researchers and the wider community to benefit from the new knowledge generated.

Singh (2006) listed the kinds of research based on the objectives of research (fundamental research and action research), approach of research (longitudinal research and cross-sectional research), precision in research findings (experimental research and non-experimental research), and nature of findings (explanatory research and descriptive research) and categorises research types as basic/fundamental research and applied research. This implies that there are kinds of research and types of research. Types of research can be classified in many ways such as descriptive versus analytical research, applied versus fundamental research, qualitative versus quantitative research, and conceptual versus empirical research.

In conclusion, research is seen as a systematic and logical process of discovering new information, solving problems, or making innovative contributions to existing knowledge. It can be classified into various types, such as pure research, applied research, descriptive research, analytical research, fundamental research, conceptual research, empirical research, longitudinal research, laboratory research, exploratory research, and conclusion-oriented research. Research design is an integral component of research, providing a plan of procedure to yield relevant data. Research can also be classified based on its goal or purpose, qualitative or quantitative methods, and general methods. The systematic process of collecting and analysing information to increase understanding of a phenomenon is an essential part of research. Research involves careful inquiry and examination to seek facts or principles, and it aims to provide solutions to problems and gain new knowledge. Research design is a critical component of research, providing a systematic and refined technique of thinking to obtain an adequate solution to a problem.

Research is also broadly classified based on the goal or purpose; qualitative or quantitative and general methods, and specifically basic and applied research; qualitative and quantitative research; experimental research; quasi-experimental research; non-experimental quantitative research; historical research; and ethnographic research (Oloyede, 2011). The various definitions above establish the fact that research must be scientific, systematic, and logical in nature to find answers to questions and provide solutions to existing and/or future problems.

What is a Research Design?

Drawing from the various definitions of research, a research design can be described as a plan for carrying out research or study. It sets out the procedure for carrying out a study to ensure the achievement of the purpose for carrying out the study. For example, in the construction of a building, there is no point in ordering materials or setting critical dates for the completion of the project stages until the type of building is determined. The first decision is what is needed: a high-rise office building, a factory for manufacturing machinery, a school, a residential home,

or an apartment block. Similarly, in social research, a design or structure is needed before data collection or analysis can begin. Therefore, the research design to be adopted is a function of the type of research or study. A research design is more than just a work plan; it is a framework that ensures that the evidence obtained allows the researcher to answer the initial question as clearly as possible. A research design is not just a work plan.

A work plan details what must be done to complete the project, but the work plan will flow from the project's research design. The function of a research design is to ensure that the evidence obtained enables the researcher to answer the initial question as unambiguously as possible. Selltiz et al. (1965) defined a research design as the arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. Mouton and Marais (1990), similar to Kerlinger (1986), indicated that a research design aims to plan and structure a given research project in such a manner that the eventual validity of the research findings is maximised. In other words, an appropriate research design ensures the validity and reliability of the findings of the research. A research design is a plan, structure, and strategy of investigation conceived so as to obtain answers to research questions or problems. The plan is the complete scheme or program of the research. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of data (Kerlinger, 1986).

A traditional research design is a blueprint or detailed plan for how a research study is to be completed—operationalizing variables so that they can be measured, selecting a sample of interest to study, collecting data to be used as a basis for testing hypotheses and analysing the results. A design is used to structure the research, to show how all the major parts of the research project including the samples or groups, measures, treatments, programs, and methods of assignment, work together to address the central research questions and themes of the study. A research design is often described using concise notations that enable the summary of a complex design structure efficiently (Penniel, 2015), and that the explorative or formulating, descriptive, ex-post facto, experimental, quasi-experimental, factorial, survey, and cross-sectional or correlational research designs are the only types available for any type of research. Mixed methods are yet again not included. Is it possible that mixed methods has not been identified as a type of research design at this time?

A research design usually comes up with a plan which incorporates the research problem, research questions, data collection methods, organization, and analysis techniques which together provide strong evidence of answers to the research questions and even convince users to accept that the findings based upon them are reasonable inferences (Asenahabi, 2019). Consequently, a research design can be seen as a step-by-step procedure which is adopted by a researcher before data collection and the analysis process commences to achieve the research objective validly. The essence of a research design is to translate a research problem into data for analysis to provide relevant answers to research questions at a minimum cost. Kerlinger (1986) described a research design as a plan, structure, and strategy of investigation that is

adopted to obtain answers to research questions with optimal control of variables. Cooper and Schindler (2003) indicated that several different research design approaches exist, but no simple classification system defines all the variations that must be considered. They classified research design into exploratory, experimental, or quasi-experimental, ex-post facto, descriptive, causal, cross-sectional, longitudinal, qualitative/case study, and quantitative study.

MacMillan and Schumacher (2001) stated that the mode of enquiry informs the research design and that researchers adopt either qualitative, quantitative, or mixed methods of enquiry. Abosede and Onanuga (2016) classified research design into qualitative, quantitative, and mixed methods. Wang and Zhu (2016) categorised types of research design into exploratory, descriptive, cross-sectional, longitudinal, causal, experimental, action, and case study. This does not include mixed methods as a type of research design. The researcher thinks that any of the research designs can be adopted for qualitative, quantitative, and mixed-methods research. Singh (2011) emphasised that differences in philosophical perspectives in design paradigm combined with the aims of a study primarily determine the focus, approach, and mode of enquiry which, in turn, determine the structural aspects of a study design. Singh (2011) concluded that quantitative and qualitative research are the major approaches to conducting any type of research.

According to Singh (2011), cross-sectional studies, before-and-after studies (experimental research), and longitudinal studies are types of designs under quantitative research while case study research, action research, and holistic research are highlighted as types of designs under qualitative research. It can, therefore, be deduced that cross-sectional studies, before-and-after studies (experimental research), longitudinal studies, case study research, action research, and holistic research are types of research design. These do not include mixed methods as a type of research design.

The use of both methods, namely, a quantitative method and a qualitative method, is also referred to as concurrent triangulation (Denzin & Lincoln 1994; Kvale, 1996; Morgan, 1998; Streckler et al., 1992). This research design approach makes use of separate quantitative and qualitative methods as a way of offsetting the weaknesses within one method with the strengths of the other. The multi-method strategy will guide the collection and corroboration of data collected and will enhance the validity and credibility of the study (MacMillan & Schumacher, 2001). Oloyede (2011) highlighted the types of research design to include qualitative, quantitative, action research, case study, observation, ethnography, phenomenology, grounded theory, correlation studies, historical, survey, experimental, quasi-experimental, ex-post facto, and evaluation.

The research design always determines the kinds of analysis that are to be done to get the desired results. It articulates what data is required, what methods are going to be used to collect and analyse the data, and how it is going to answer the research questions. The research design must contain a strategy for interpreting the analysed data to provide adequate findings and conclusions from the research which will allow the researcher to make recommendations

or implications based on the study. Research design is divided into three groups: quantitative (experimental, true experiment, quasi-experiments; non-experimental, survey research, causal-comparative research, and correlation design); qualitative (case studies, narrative research, phenomenological research, grounded theory, action research and ethnography); and mixed-method research design (convergent parallel mixed method, explanatory sequential mixed methods, and exploratory sequential mixed methods) (Asenahabi, 2019).

Scholars (see Creswell, 2014; Fetters & Molina-Azorin, 2017; Kerlinger, 1978; Polit et. al., 2001) have defined a research design in different ways that attempt to explain a research design as a comprehensive plan and procedure that provides an answer to the research question. Kerlinger (1978) described a research design as a total plan that connects the conceptual research problems to the pertinent empirical research. Polit et al. (2001) viewed a research design as the researcher's overall plan for answering the research question or testing the research hypothesis, hence, the researcher must decide the most appropriate design which befits the type of research work. A research design is different from the method by which data is collected because many research methods texts mix up research designs with types and/or methods of research. It is not uncommon to see a research design treated as a mode of data collection rather than as a logical structure of the inquiry. Consequently, a research design is not related to any method of collecting data or any particular type of data since any research design can, in principle, use any type of data collection method and can use either quantitative or qualitative data. Fetters and Molina-Azorin (2017) broadly classified types of research into quantitative and qualitative which accommodate five major types of research designs viz. descriptive research design, correlational research design, experimental research design, diagnostic research design, and explanatory research design.

The major defining characteristics of mixed-methods research lies in its flexibility, adaptability, and ability to embrace complexity. Creswell (2014) asserted that researchers can employ various designs, such as concurrent, sequential, or transformative, based on the research objectives, the research questions at hand, and the available resources. Thus, researchers can adopt various strategies to navigate the intricacies of their research landscape through diverse research inquiries and overcome the limitations imposed by rigid methodological frameworks.

Mixed Methods as a Research Design or a Type of Research

The definition of mixed methods as a research design is inconclusive according to by the views of various authors, with every author giving reasons to justify their conclusions. For instance, Oluwole (2023) described mixed methods as a procedure for collecting, analysing, and "mixing" both quantitative and qualitative research and methods in a single study to understand a research problem and that the knowledge and understanding of both quantitative and qualitative research are important for effective implementation of mixed methods research. On the other hand, Tashakkori and Teddlie (2009) emphasised that there are nearly 40 different types of mixed-methods designs in the literature and that because of the wide variations of the

mixed-methods design, some people concluded that it is not a design. Salami (2023) citing Ary et al. (2010) described mixed methods as a type of research and not a research design (with quantitative and qualitative as other types) but that the decision on the type of design to use in mixed-methods research is dependent on what the research aims to achieve including the research questions. Also, Fehintola (2023) emphasised that there are three types of research design in education viz. quasi-experimental, descriptive, and mixed methods. Shehu (2023) reported that the typology of research can be done along the lines of use and form, design and data collection approach used and that mixed methods can be regarded as a design. Creswell (2018) highlighted the types of design that can be adopted in mixed-methods research including triangulation. Exploratory, explanatory, transformative, and embedded (for quasi-experimental) research designs have been identified as types of research designs that can be adopted in mixed-methods research (Aramide, 2022).

One of the important aspects of research is the design adopted in a study. The only known research design in the 19th century was quantitative research, thus the most used research design to date (Nagpal et al., 2020). The introduction of the qualitative research design brought about different research designs and certain controversies surrounding the designs. There have been continuous debates on whether mixed-methods research is a research design or approach.

Doyle et al. (2009) opined that mixed methods is evolving; as such, there is an ongoing discussion on its true nomenclature and the definition of mixed-methods research has changed over time and has been described differently by different people. Molina-Azorin (2016) defined mixed methods as the combination and integration of both quantitative and qualitative methods in the same study. Although the author opined that mixed methods is a methodological approach in research and that the combination of both qualitative and quantitative approaches yields better results, they are however silent on whether it is a research design or not.

Creswell (2006) defined research designs as procedures for collecting, analysing, interpreting, and reporting data in research studies. From the definition of a research design, Creswell views mixed methods as a research design that has four major types. Similarly, Hafsa (2019), in an article on the overview of mixed methods, described it as a research design which incorporates qualitative and quantitative research and data in a single study. From the point of view of the author, the mixed methods is a research design. Doyle et al. (2009) also postulated that though mixed methods are emerging as a research design in other fields, it is a dominant research design in healthcare research. Giving credence to this opinion, the authors defined mixed methods as a research design where a researcher collects and analyses data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study. The author reported that the mixed-methods approach could be the third paradigm to bridge the gap between the qualitative and quantitative research approaches.

In the view of Dawadi et al. (2021), mixed methods complement qualitative and quantitative research approaches catering to the needs of contemporary researchers. The advantage of mixed methods over traditional research designs is that by combining both qualitative and quantitative data, a better understanding of the research problem is achieved (Buchanan & Herschell, 2019). The definition of the mixed-methods research design by Schoonenboom and Johnson (2017) indicated that it involves the use of quantitative and qualitative approaches not only in data collection but also in analysis and inference techniques for enhanced understanding and corroboration in research. While giving justification for the use of mixed methods in research, Nagpal et al. (2020) highlighted five purposes for conducting mixed-method research which includes designs such as triangulation, complementarity, development, initiation, and expansion.

Doyle et al. (2009) also highlighted the benefits of mixed-methods research including triangulation which enhances the validity of a study through corroboration between quantitative and qualitative data, completeness which is a more complete and comprehensive view of the study phenomenon and offsetting weaknesses and providing stronger inferences – these imply that mixed-methods research neutralises the limitations of the traditional approaches and also builds on the strengths of these approaches to achieve stronger and more accurate inferences. The advantages further include answering research questions that qualitative or quantitative approaches alone could not answer; the explanation of findings is also enhanced with mixed methods as quantitative data generated could be further explained using qualitative data. Other benefits of mixed methods are hypotheses developed through the qualitative approach which could be tested using quantitative data and instrument development and testing through the same process as hypothesis development and testing. With these benefits, it could be inferred that mixed methods indeed has an edge over qualitative and quantitative methods, though its classification either as a research design or research type has not been established.

Meanwhile, effective use of a research design requires that a researcher has a good understanding of both qualitative and quantitative approaches. This will entail that a researcher knows the different types of mixed-methods design to be able to choose the type appropriate for the study to be conducted. Creswell (2006) identified four major types of mixed-methods research design including triangulation design, the embedded design, the explanatory design, and the exploratory design. However, citing a previous article by Creswell, Hafsa (2019) identified three types of mixed methods used in social science research which are convergent parallel, explanatory sequential, and exploratory sequential mixed methods. The authors noted that these three types have been further broken into transformative, embedded, and multiphase mixed methods. Drawing from the explanation of Creswell, mixed methods can be described as a research type with different research designs.

Nagpal et al. (2020) gave a brief explanation of a convergent research design as one in which qualitative and quantitative studies are carried out separately, but the result is

incorporated into a comprehensive analysis. Buchanan and Herschell (2019) posited that convergent parallel mixed methods help researchers to gather qualitative and quantitative data and analyse them independently in parallel for a comprehensive analysis of the research problem, question, or issue under investigation. However, the authors noted that although the mixed-methods research design increases the legitimation and believability of a research result, it does not increase its reliability or trustworthiness. This position contrasts with the view of Ventakesh reported by Dawadi et al. (2021), which posited that data triangulation, as a design in mixed-methods study, allows for the collection of various data and findings are then compared for better insight into the issues being investigated. The triangulation, according to the report, results in valid and stronger inferences which in turn lead to a well-validated conclusion which enhances the credibility of findings.

The explanatory sequential design was explained by Napgal et al. (2020) as a mixed-methods research design in which qualitative data are used to provide more information to clarify initial quantitative data. In this type of mixed methods, quantitative data is collected first while qualitative data is collected thereafter to clarify the initial result of quantitative data. The third variant which is exploratory sequential begins with the collection of qualitative data which is then followed by the collection of quantitative data which is used to explore the result of the initial qualitative data. Meanwhile, the embedded design of mixed methods was described as a method where there is one dominant method and a supportive or secondary method (Doyle et al., 2009). According to the author, an embedded design also has two types which are the embedded experimental model where quantitative data is dominant and qualitative data is subservient and the embedded correlational where qualitative data are embedded in the qualitative one. Irrespective of whether the embedded design is experimental or correlational, the quantitative and the qualitative methods could be conducted concurrently or sequentially.

Whatever type of mixed methods used in a study would give the study outcome an increased validity, however, using the mixed-methods research design is not without some challenges. Dawadi et al. (2021) highlighted the challenges including failure to achieve the research objectives arising from threats such as lengthy data collection and analysis process, high expense in cost and time, and intensive labour in data collection encountered in mixing qualitative and quantitative methods. The authors reported the second challenge as the difficulty researchers encounter when integrating qualitative and quantitative data and the third challenge as those to do with epistemological and philosophical issues since quantitative and qualitative methods are from different paradigms. The other two challenges mentioned by the authors are choosing the right type of design and maintaining quality in the integration of the two different data collected, and deciding which variant of the mixed-methods design is appropriate for a particular study. The debate on mixed methods seems not to have reached any conclusion, but in the meantime, the method is still viewed as a credible method for arriving at credible and reliable findings. From the foregoing, it can be deduced that mixed methods is a research type with variants of designs.

Creswell and Creswell (2017) emphasised that there are various types of research designs, each suited to different research objectives and contexts and highlighted the commonly used research designs including experimental design, observational design, cross-sectional design, longitudinal design, qualitative design and mixed-methods design. The mixed-methods research design is aimed at addressing the limitations of quantitative and qualitative research and adopts the pragmatic approach as a new approach that shows promise for social and therapeutic science research that combines qualitative and quantitative methods focusing on methodological rather than philosophical concerns. The mixed-methods research design is therefore based on the pragmatic philosophical perspectives as opposed to positivist/postpositivist and constructivist/interpretivist which form the philosophical basis for both quantitative and qualitative research respectively. Meanwhile, Trochim et al. (2015) in their critique of research designs and methodologies concluded that mixed methods is an approach in research just as qualitative and quantitative approaches and that any approach can be adopted within any type of research and research design.

METHODOLOGY

The methodology adopted for this paper is qualitative in nature and it involves analysis of documents and content. The content of journals and books was analysed to review and draw inferences relating to the themes set out for investigation by the study. Themes that were considered include research methodology, types of research, research design, mixed-methods research and/or mixed-methods research design and research approaches. A multi-stage procedure was adopted in filtering and selecting relevant articles that fell into the category of documents that addressed the themes which the paper focused on. In the first stage, the author decided on the use of the ResearchGate database and Google Scholar web search engine which are prominent platforms for archiving and searching for scholarly articles in all fields. Forty-nine (49) articles were retrieved from the two platforms on the themes. The first level of search was done to have a high recall rate of documents on the themes of the study. In the second stage, articles that specifically focused on types of research, research design and mixed-methods research were selected for the study. A high level of precision in document selection was ensured to capture only articles that specifically focused on the basic themes which the study intended to investigate at the second stage. A total of 22 publications (including journal articles and books) were selected at this stage and were analysed in this study. These specific articles and books formed the key sources of information for this study. Following the completion of the investigation, a procedure known as thematic data analysis was performed on the many problems that were discovered to categorise them into themes. See Table 1 for the distribution of articles and documents used across the two sources consulted where the documents were retrieved.

Table 1.

Distribution of Articles Selected Across the Sources Consulted

Sources	First Stage	Second Stage (After Screening)
Google Scholar	31 (63.3%)	15 (62.5%)
Research Gate	18 (36.7%)	7 (37.5%)
Total	49 (100.0%)	22 (100.0%)

Table 2 presents information about the articles selected for the study. The articles were selected after screening along the lines of the themes investigated in the study.

Table 2.

Selected Articles for the Study (see Appendix)

Diagrammatic Representation of Types of Research Design

Taherdoost (2022) classified types of research based on application, objectives, and information sought. Application includes pure, applied, and basic while objectives are descriptive, correlational, exploratory, explanatory, case study, phenomenology, ethnography, content analysis, and narrative. The information sought/approach is quantitative, qualitative, and mixed methods.

Figure 1.

Classification of Types of Research, Aramide, 2022

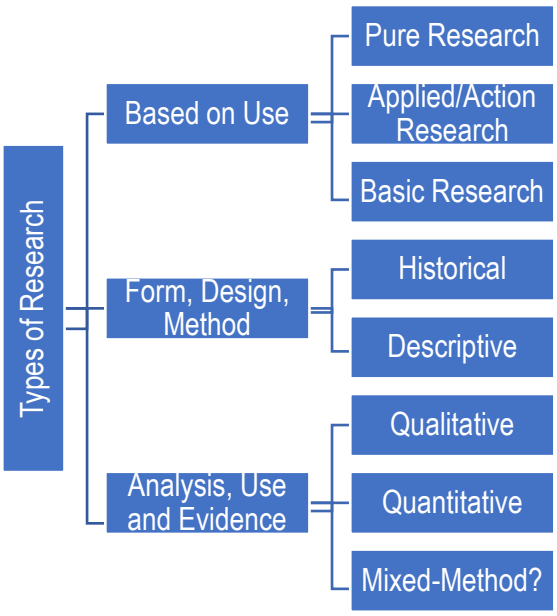


Figure 2.

Classification of Types of Research and Research Design (Abubakar & Ahmad, 2023)

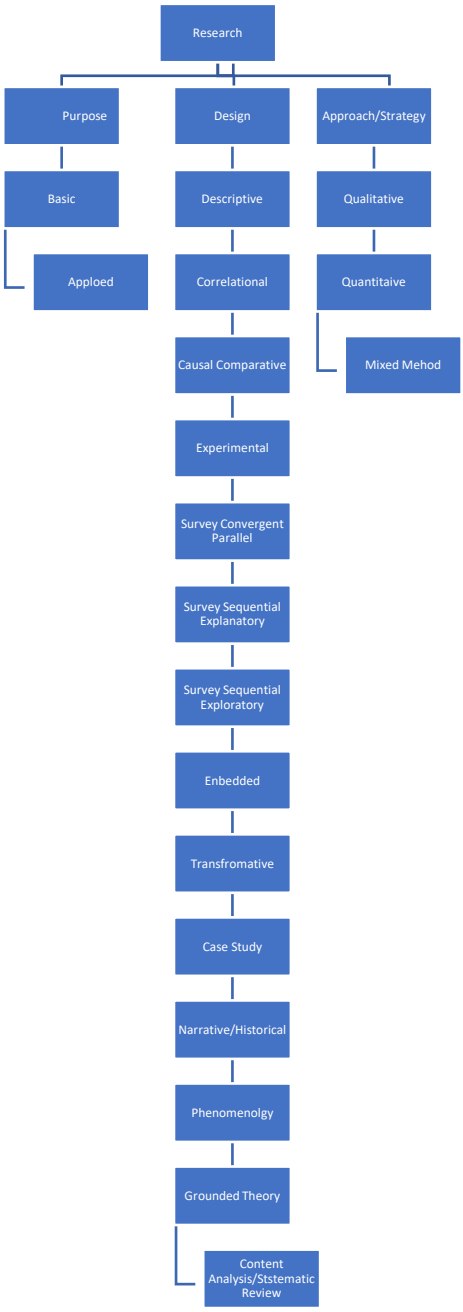
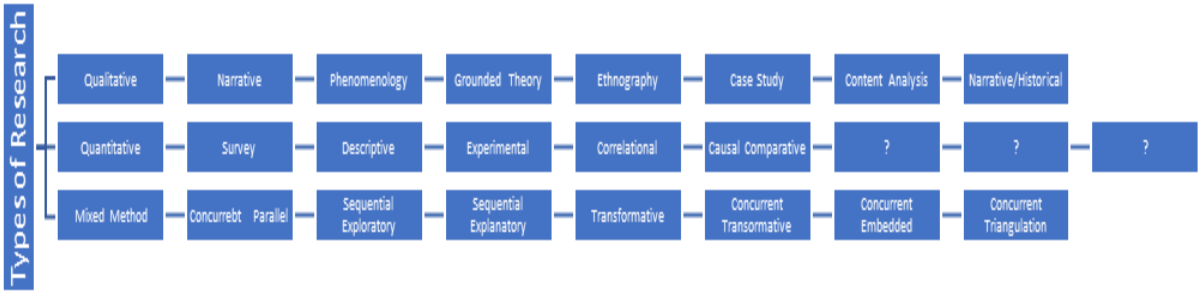


Figure 3.

Classification of Types of Research (Asenahabi, 2019)



FINDINGS

Summary of Findings: Synthesis for Discourse

The analysis of the various conceptualisation of mixed methods by most authors and scholars revealed that mixed methods is situated within the context of both research designs and types of research, although it was not expressly listed among the types of research (Creswell & Plano-Clark, 2007, 2011; Tashakkori & Teddlie, 2010; Ary et al., 2010; Kumar, 2008; Cohen et al., 2018; Tobi & Kampen, 2018; Asenahabi, 2019; Neelam, 2020; Sato, 2022; Adeniji et al., 2022; Egunjobi, 2022; Love et al., 2022; Igiebor & Okonmah, 2022; Taherdoost, 2022; Abubakar & Ahmad, 2023: Hampson & McKinley, 2023; Otieno & Owino, 2023; Hagan, Spillane & Curran, 2023; Sharma et al., 2023). However, there are authors on research methodologies who classified mixed methods as a research design with designs such as convergent parallel, exploratory, explanatory, sequential, transformative, and embedded (Tashakkori & Teddlie, 2003; Abosede & Onanuga, 2016; Creswell & Creswell, 2017; Creswell, 2018; Tobi & Kampen, 2018; Asenahabi, 2019; Dawadi et al., 2021; Adeniji et al., 2022; Igiebor & Okonmah, 2022; Otieno & Owino, 2023; Sharma et al., 2023).

Also, some authors view mixed methods from the point of a research approach or research strategy that can be used for any type of research (Johnson & Onwuegbuzie, 2004; Singh, 2011; Trochim et al., 2015; Gliner et al., 2017; Cohen et al., 2018; Tobi & Kampen, 2018; Dawadi et al., 2021; Adeniji et al., 2022; Love et al., 2022; Mattar & Ramos, 2022; Taherdoost, 2022; Igiebor & Okonmah, 2022; Sato, 2022; Pashaie et al., 2023; Sharma et al., 2023). Some other authors described mixed methods as a research methodology (Dawadi et al., 2021; Mattar & Ramos, 2022; Igiebor & Okonmah, 2022; Pashaie et al., 2023) (See Table 3). These researchers are of the view that the conceptualisation and definition of mixed methods is not definitive since the mixed methods definition includes that of a research type, research design and research approach. Table 3 summarises the findings.

Table 3.

Authors Distribution on Conceptualization and Conceptualization of Mixed-Method Research (see Appendix)

SUMMARY AND CONCLUSION

Mixed methods has been described, defined, conceptualised, and contextualised in various ways by various authors, and classified as a research type, research design, research approach, and research method/methodology. Those who classified mixed methods as a research design based their argument on the paradigm and philosophical perspectives of mixed methods. They argue that every research design must have a philosophical perspective and that because mixed methods is pragmatic in nature, it is qualified to be called a research design. Having a specific blueprint or plan is another reason for categorising mixed methods as a design. Authors that argued for mixed method as a type of research do so because it fell within the criteria for the

classification of the type of research such as purpose, use, form, evidence, application, and information sought, among others.

Mixed methods have been classified as a research approach based on its conceptualisation within the criteria of information sought and strategy. These divergent views on mixed-methods conceptualisation need to be harmonised for a definitive description of mixed methods for clarity of the concept. Therefore, there is a need for authors and experts in research methodologies to engage in further conceptual clarification of mixed methods. The question persists: Is mixed methods a type of research, a type of research design or a research approach?

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APPENDIX

Table 2.

Selected Articles for the Study

S/N	Author(s)	Title of Study	Focus of Study
1	Haga et al. (2023)	Mixed-Methods Research: A Methodology in Social Sciences Research for the Construction Manager	This research demonstrates and strengthens that mixed-methods research will become increasingly successful as more construction managers study, use and spread its philosophy.
2	Igiebor and Okonmah (2022)	The Application and Implication of Combining Quantitative and Qualitative Data in The Social Sciences: A Third Methodological Movement in Context	Discussed the evolvement of mixed-methods research and the methodological, theoretical, philosophical, analytical, and practical basics and constructs for conducting a mixed-methods study.

3	Sato (2022)	Mixed-Methods Research in ISLA	Mixed-methods research for conducting robust ISLA research to understand complex second language (L2) learning phenomena in instructed settings with a specific focus on the three core MMR designs proposed by Creswell and Plano-Clark (2018): convergent, explanatory sequential, and exploratory sequential.
4	Pashaie et al. (2023)	Improving the Validity of Mixed and Multi-Methods Through Triangulation in Sports Management Research	Improving the validity of mixed and multi-methods through triangulation in sports management research.
5	Johnson and Onwuegbuzie (2004)	Mixed-Methods Research: A Research Paradigm Whose Time Has Come	Provide a framework for designing and conducting mixed-methods research.
6	Dawadi et al. (2021)	Mixed-Methods Research: A Discussion on its Types, Challenges, and Criticisms	Provides an overview of mixed-methods designs, discusses their main types, and explains challenges one can potentially encounter when using them to assist early career researchers in particular and other researchers in general.
8	Adeniji et al. (2022)	Redesigning a Mixed-Method Research Study During a Pandemic: A Case Study from Nigeria and Australia	Focus on identifying innovative methodologies that can be employed to carry out mixed-methods research in a non-technologically advanced country, reflecting on the benefits and limitations of carrying out rigorous research during difficult and the methodological approaches for carrying out mixed-methods research during unprecedented times.
9	Taherdoost (2022)	What are Different Research Approaches?	Provides a comprehensive review of qualitative, quantitative, and mixed-

		Comprehensive Review of Qualitative, Quantitative, and Mixed-Method Research: Their Applications, Types, and Limitations	method research methods clearly defined and specifically based on applications, types, advantages, and limitations to help researchers identify and select the most relevant type based on each study and navigate accordingly.
10	Hampson and McKinley (2023)	Problems Posing as Solutions: Criticising Pragmatism as a Paradigm for Mixed Research	Focused on describing and criticising pragmatism as a paradigm for mixed-methods research.
12	Tobi and Kampen (2018)	Research Design: The Methodology for Interdisciplinary Research Framework	The paper presents the methodology for interdisciplinary research (MIR) framework and discussed the framework's utility in research design in landscape architecture, mixed-methods research, and provide an outlook on the framework's potential in inclusive interdisciplinary research.
13	Asenahabi (2019)	Basics of Research Design: A Guide to Selecting Appropriate Research Design	Investigates what research design is, the different kinds of research design and how a researcher can choose the appropriate research design for their study.
14	Cohen et al. (2018)	Research Methods in Education (8th ed.)	Covers the whole range of methods employed by educational research at all stages. Its five main parts cover the context of educational research; research design; methodologies for educational research; methods of data collection; and data analysis and reporting.
15	Neelam (2020)	Type of Research and Type of Research Design	Focuses on understanding the type of research and research design to prepare empirical analysis and also describes main variables operationalisation and explains measure selection behaviour.

16	Gliner et al. (2017)	Research Methods in Applied Settings and Integrated Approach to Design and Analysis	A text for a quantitative research design course or as a go-to text for the quantitatively focused researcher.
17	Abosede and Onanuga (2016)	Research Design: A Review of Features and Emerging Developments	The paper discusses and argues that developments in ethical issues have profound effects on research design construction and implementation. It goes further to emphasise threats to research design, especially in the use of the qualitative design method and explains the importance and setback of the use of the internet to complement the research design process.
19	Love et al. (2022)	Mixed-Methods Approaches in Special Education Research	Discussed mixed-methods research purposes, designs, and quality considerations to help practitioners critically consume and apply this type of research when working with students with learning disabilities and their families.
20	Otieno et al. (2023)	Mixed Methods in Accounting Research: The Rationale and Research Designs	This discusses a wide range of possibilities and challenges in conducting mixed-methods research.
21	Sharma et al. (2023)	Navigating the Research Landscape: A Guide to the Selection of the Right Research Design	Provides an overview of research designs and discusses its main types.
22	Mattar, and Ramos (2022)	Paradigms and Approaches in Educational Research	Discusses the concepts of paradigms and approaches in educational research.

Table 3.

Authors Distribution on Conceptualization and Conceptualization of Mixed-Method Research

Conceptualisation and Contextualisation of Mixed-Method	Frequency/ Percentage	List of Authors
Research Type	19 (86.4%)	Creswell & Plano-Clark, 2007; 2011; Tashakkori & Teddlie, 2010; Ary et al., 2010; Kumar, 2008; Cohen, Manion & Morrison, 2018; Tobi & Kampen, 2018; Asenahabi, 2019; Neelam, 2020; Sato, 2022; Adeniji et al. 2022; Love, Cook & Cook, 2022; Igiebor & Okonmah, 2022; Taherdoost, 2022; Abubakar & Ahmad, 2023: Hampson & McKinley, 2023; Otieno & Owino, 2023; Hagan, Spillane & Curran, 2023; Sharma, Jha, Koirala, Aryal, Budhathoki & Bhattarai, 2023
Research Design	12 (54.5%)	Tashakkori & Teddlie, 2003; Abosede & Onanuga, 2016; Creswell & Creswell, 2017; Creswel, 2018; Tobi & Kampen, 2018; Asenahabi, 2019; Dawadi et al., 2021; Adeniji et al. 2022; Igiebor & Okonmah, 2022; Otieno & Owino, 2023; Sharma, Jha, Koirala, Aryal, Budhathoki & Bhattarai, 2023
Research Approach	16 (72.7%)	Johnson & Onwuegbuzie, 2004; Singh, 2011; Trochim et al., 2015; Gliner et al., 2017; Cohen et al., 2018; Tobi & Kampen, 2018; Dawadi et al., 2021; Adeniji et al. 2022; Love, Cook & Cook, 2022; Mattar, & Ramos, 2022; Taherdoost, 2022; Igiebor & Okonmah, 2022; Sato, 2022; Pashaie, Abbaszadeh, Abdavi & Golmohammadi, 2023; Sharma, Jha, Koirala, Aryal, Budhathoki & Bhattarai, 2023)
Research Method/Methodology	10	Neelam, 2020; Love, Cook & Cook, 2022; Mattar, & Ramos, 2022; Taherdoost, 2022; Igiebor & Okonmah, 2022; Pashaie, Abbaszadeh, Abdavi & Golmohammadi, 2023; Dawadi et al., 2021; Otieno & Owino, 2023; Sharma, Jha, Koirala, Aryal, Budhathoki & Bhattarai, 2023