MIXED METHODS RESEARCH DESIGN

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Informasi	Abstract
Volume : 2 Nomor : 6 Bulan : Juni Tahun : 2025 E-ISSN : 3062-9624	*Mixed methods research combines quantitative and qualitative approaches to provide a more comprehensive understanding of the phenomenon being studied. This method allows researchers to collect and analyze data from various sources, resulting in more valid and objective findings. This journal article aims to provide a comprehensive understanding of mixed-method research design, and not only that, but also encourages readers to explore various existing designs, such as convergent parallel design, exploratory sequential design, embedded design, transformative design, and multiphase design. Through an in-depth literature review, this article reveals the methods used in mixed-method research, showing that each design has its own advantages and challenges. The main findings of this article indicate that there are various types of mixed-method research designs and examples of their application. The implications of these findings are significant, as the use of mixed-method research can enhance the validity and reliability of data, as well as provide richer insights for researchers and practitioners.* ***Keywords :*** *Research, Design, Mixed Methods*

Abstrak

Penelitian mixed methods menggabungkan pendekatan kuantitatif dan kualitatif untuk memberikan pemahaman yang lebih komprehensif terhadap fenomena yang diteliti. Metode ini memungkinkan peneliti untuk mengumpulkan dan menganalisis data dari berbagai sumber, sehingga menghasilkan temuan yang lebih valid dan obyektif. Artikel jurnal ini bertujuan untuk memberikan pemahaman yang komprehensif tentang desain penelitian mixed method, dan tidak hanya itu, tetapi juga mengajak pembaca untuk menjelajahi berbagai desain yang ada, seperti convergent parallel design, convergent parallel design, exploratory sequential design, embedded design, transformative design dan multiphase design. Melalui tinjauan literatur yang mendalam, artikel ini mengungkapkan metode yang digunakan dalam penelitian mixed method, menunjukkan bahwa setiap desain memiliki kelebihan dan tantangan tersendiri. Temuan utama dari artikel ini menunjukkan bahwa ada berbagai jenis desain penelitian mixed methods dan contoh penerapannya. Implikasi dari temuan ini sangat signifikan, karena penggunaan penelitian mixed methodsdapat meningkatkan validitas dan reliabilitas data, serta memberikan wawasan yang lebih kaya bagi peneliti dan praktisi.

Kata Kunci: *Penelitian, Desain, Metode Campuran*

A.   INTRODUCTION

Research in the social sciences, education and health are often faced with the challenge of understanding complex phenomena. To overcome the limitations of separate quantitative and qualitative approaches, mixed methods research is becoming an increasingly popular option. Mixed methods is a research approach that combines quantitative and qualitative methods in one study to gain a more comprehensive understanding of a problem (Creswell & Plano Clark, 2018). A mixed methods approach not only allows for data triangulation, but also provides flexibility in the in-depth exploration of the phenomenon under study. In social and educational research, the use of mixed methods can increase the validity and reliability of findings by integrating numerical and narrative data (Tashakkori & Teddlie, 2010).

In addition, this approach is also useful in overcoming the limitations of each method, where quantitative methods provide generalization and objectivity, while qualitative methods provide an in-depth understanding of the social context (Bryman, 2012). Adopting mixed methods in research requires careful design planning. Some of the main designs often used in mixed methods research include convergent design, sequential explanatory design, and sequential exploratory design (Creswell, 2014). The choice of design depends on the purpose of the study, the type of data collected, and the analysis strategy used.

Despite its many advantages, the application of mixed methods also faces challenges, such as complexity in design, the need for diverse research skills, and greater allocation of time and resources (Plano Clark & Ivankova, 2016). Therefore, it is important for researchers to understand the basic principles of mixed methods in order to design effective studies and produce meaningful findings. This article aims to review the basic concepts, key designs, and challenges and opportunities in mixed methods research. With a better understanding of these methods, it is hoped that researchers can optimize the mixed methods approach in their studies to produce richer and deeper findings.

B.   RESEARCH METHODS

In writing this article, the method used was a literature review, which is an important step in collecting and analyzing previous research. A literature review helps authors understand the context and framework of existing research, as well as identify gaps that need to be explored further. The data sources used in writing this article include scientific journals and books. Scientific journals are the primary source because they contain the latest peer-reviewed research. The data analysis techniques applied in this article include descriptive

analysis and comparative analysis. Descriptive analysis is used to describe the data that has been collected, while comparative analysis allows the author to compare the results of various studies to draw broader conclusions.

C. RESULTS AND DISCUSSION

Definition of Mixed Methods Research

Mixed Methods is a research design based on philosophical assumptions such as inquiry methods. Mixed Methods is also referred to as a methodology that provides philosophical assumptions in showing direction or instructing how to collect data and analyze data as well as a combination of quantitative and qualitative approaches through several phases of the research process (Justan et al., 2024). This research can also be said to be research with data analysis, then integrated in the form of findings and finally drawing a conclusion. Mixed Methods is the perfection associated with quantitative and qualitative research (Indrawan & Jalilah, 2021). Mixed methods research combines qualitative and quantitative approaches to provide a more comprehensive understanding of the phenomenon under study.

Mixed methods research is a type of research that collects, analyzes, and combines quantitative and qualitative research methods in a series of studies to understand research problems. If researchers want to use this research design, it is very necessary to understand quantitative and qualitative research (Vebrianto et al., 2020). One of the advantages of mixed methods research is its ability to provide a more holistic perspective on a problem. For example, in research on consumer behavior, a quantitative approach can provide statistical data on buying patterns, while a qualitative approach can explore the motivations behind those choices. This shows how the two methods complement each other to produce a clearer and deeper picture. Researchers need to consider how qualitative data can support or explain quantitative findings, and vice versa.

This research method is used to obtain more complete and objective information. The use of this method is a form of effort to improve or minimize errors from the previous method. In other words, when researchers know what are the weaknesses of the method to be used, it will make accuracy in sorting out a research method (Indrawan & Jalilah, 2021). So mixed methods research is not just about combining two methods, but also requires a deep understanding of the context and purpose of the research. In their study, they found that researchers who are able to explain the rationale behind using mixed methods tend to produce more effective and useful research.

In the context of education, mixed methods research has been used to explore various aspects such as learning experiences and the influence of the learning environment on academic outcomes. By using mixed methods research, researchers can capture the nuances of the student experience that quantitative methods alone cannot capture. This approach allows researchers to understand how different variables interact in an educational context. Mixed methods research offers an innovative and effective approach to exploring complex phenomena. With its ability to combine multiple data sources, it can provide deeper and more applicable insights. However, it is important to remember that using this method requires skill and a good understanding of both approaches, as well as how to integrate them effectively.

Objectives of Mixed Methods Research

The overall goal of combining qualitative and quantitative research components of mixed methods research is to broaden and strengthen research conclusions and the use of these methods contributes to answering one's research questions. Ultimately, mixed methods research acquires a high degree of knowledge and validation. This design as a product is of sufficient quality to achieve some validity, which refers to mixed methods research studies that meet the relevant combination or set of quantitative, qualitative, and mixed methods validity. Given the goal of answering research questions with validation, a researcher can use various reasons or purposes to strengthen the research study and its conclusions (Patonah et al., 2023).

Mixed Methods Research Type

1. Convergent Parallel Design

Mixed methods type convergent paralled design, namely, the collection of data sources (quantitative and qualitative) is carried out "simultaneously" (concurrent= parallel = convergent). In brief, it can be said that this convergent parallel design aims to complement (complement each other) information that cannot be covered by one research method alone (qualitative or quantitative) (Vebrianto et al., 2020). In this design, researchers conduct data collection simultaneously, both qualitative and quantitative, to answer the same research question. This method allows researchers to gain a more holistic perspective on the topic under study. Data from these two approaches are then compared and analyzed simultaneously to see the congruence or differences between them. For example, in a study on customer satisfaction, a researcher may use surveys to collect quantitative data and in-depth

interviews to obtain qualitative data. The results of these two methods can provide a clearer picture of what customers really want.

2. *Explanatory Sequential Design*

This design is the use of two research methods (quantitative and qualitative) in a sequence so that each method will be implemented one by one (not simultaneously) in two different research phases (Vebrianto et al., 2020). This approach is usually used when researchers want to dig deeper into initial quantitative findings or confirm and explain the results of quantitative research with qualitative data (Nasution et al., 2019). The Mixed Method research method, sequential explanatory model, is characterized by quantitative data collection and analysis in the first stage, and followed by qualitative data collection and analysis in the second stage, in order to strengthen the results of quantitative research conducted in the first stage.

This design has a very logical approach, starting with quantitative data and then followed by qualitative data to explain the initial findings. Researchers first collect and analyze quantitative data, and based on those results, they conduct qualitative research to dig deeper. This is especially useful when the quantitative results show unexpected or interesting results. For example, if in a customer satisfaction survey it is found that 70% of customers are dissatisfied, researchers can then conduct interviews to understand the reasons behind the dissatisfaction. In this way, the researcher can explore deeper factors that may not be apparent in the initial quantitative data. In this way, researchers can explore deeper factors that may not be apparent in the initial quantitative data

3. *Exploratory Sequential Design*

Similar to the previous design, this exploratory sequential design also has the word "sequential" in its naming. This has signaled that this type of mixed methods also does not carry out both research methods (quantitative and qualitative) simultaneously, but sequentially (Vebrianto et al., 2020). The Sequential Exploratory model refers to a mixed methods research approach in which two main research stages are involved: a qualitative stage followed by a quantitative stage. This approach allows researchers to gain a deeper and more comprehensive understanding of the phenomenon under study (Nasution et al., n.d.).

Mixed Method explanatory sequential model, characterized by data collection and quantitative data analysis in the first stage, and followed by qualitative data collection and analysis in the second stage, in order to strengthen the results of quantitative research conducted in the first stage (Azhari et al., 2023). This design is the opposite of the Explanatory

Sequential Design. Here, researchers start with qualitative data collection to explore a new, under-researched phenomenon, and then use the results to develop quantitative instruments. This approach is useful when the research topic is new and requires a deeper understanding. For example, if researchers want to understand the impact of social media on adolescent behavior, they might start with indepth interviews to gain initial insights. Based on these insights, researchers can then design surveys to measure these trends more broadly in the population.

4. Embedded Design

Mixed methods embedded design tends to give researchers the freedom to choose one method to prioritize. Creswell mentioned that the strength of embedded design lies in utilizing a combination of the advantages of both research methods. Therefore, this embedded design is certainly quite effective and worth trying for researchers who want to get research results with optimal interpretation by utilizing the advantages of both research methods (Vebrianto et al., 2020). This research combination collects quantitative and qualitative data together or sequentially where one form of data plays a supporting role for the other. The application of this model can help gain a more holistic and in-depth understanding of the phenomenon being studied (Nasution et al., n.d.).

In Embedded Design, one research method (either qualitative or quantitative) is integrated into the main research design. This means that one approach serves as a "complement" to the other. Usually, the more dominant method becomes the main focus, while the lesser approach serves to enrich the analysis. For example, in a study focusing on the effectiveness of a training program, researchers might use surveys to quantitatively measure training outcomes. However, they may also include interviews with trainees to understand their experiences in greater depth. This qualitative data will enrich the understanding of how effective the program was.

5. Transformative Design

This transformative design is similar to the previously described mixed methods research designs (convergent, explanatory, exploratory, or embedded). It applies one of the four design flows. However, the fundamental difference lies only in the framework within which the research is conducted. This transformative framework is the lens or perspective brought by the researcher with the ultimate goal of "transformation or change" in the group of participants under study. Usually, this type of transformative design research is widely

used in feminist social research with the ending of social change at the end of the research (Vebrianto et al., 2020).

Transformative Design focuses on social issues and seeks to give voice to underrepresented groups. This design is often used in research that aims to promote social change. In this approach, researchers combine qualitative and quantitative methods to empower the voices and perspectives of marginalized groups. For example, in research on education access for children from low economic backgrounds, researchers may use interviews to hear stories directly from children and their parents, while also collecting statistical data on education levels and resource access. This approach helps to illustrate the challenges faced and encourage policy change.

6. *Multiphase Design*

As the name multiphase design implies, this research has multiple phases. This multiphase researcher utilizes the concept of mixed methods design in general, but adds multiphase to the design applied. Research that applies this design is research with a large scale and program objectives that can be said to be complex. Therefore, researchers in this design should first consider funds, abilities, and experience in large-scale research which is certainly difficult to do individually but in teams (Vebrianto et al., 2020).

Multiphase design refers to research that is conducted in several phases and can involve different types of methods. This approach is often used in larger and more complex research projects, where researchers need to collect data in stages and build knowledge progressively. For example, in a study that aims to evaluate a community program, the researcher might start with an exploratory phase to understand the context, followed by an evaluation phase to measure program outcomes, and finally a reflective phase to evaluate long-term impacts. In this way, researchers can capture dynamics that change over time.

Characteristics of Mixed Methods Research

The characteristics of mixed methods are knowledge that researchers must understand when using mixed methods as a methodology in their research (Justan & Aziz, 2024). The characteristics of mixed methods in general are a combination of the characteristics of quantitative methods and qualitative methods. The main goal is to obtain a more comprehensive and in-depth understanding of a research problem by utilizing the strengths of both methods. The following are some characteristics that must exist in mixed methods research:

1. Mixed methods research has several types of designs that can be chosen to be implemented, of course, taking into account the research objectives, data sources, priorities and research time. In research using this method, the researcher must provide a clear outline and reason for choosing a mixed research design (quantitative and qualitative). This outline or explanation is usually mentioned at the beginning before the research is conducted. The reason for conducting a mixed method study is to explain in more detail through initial quantitative statistical research obtained from data on a large number of people and generalize the results, while qualitative allows in-depth exploration of several individuals (Azhari et al., 2023).

2. Connecting, building new data, and embedding new data. This means that quantitative and qualitative data are "mixed" in a study (Vebrianto et al., 2020).

3. This mixed methods research will use two sources of data derived from qualitative and quantitative methods and then combine the two. Data collection methods are associated with numbers or numerical data and words or text and image data (Azhari et al., 2023).

4. This research is used when a researcher wants to follow up on a study to get more specific and detailed complementary information when compared to relying on only one research method. One example is when a policymaker wants both "numerical" and "narrative" data about a problem, the researcher can use both test and non-test data collection techniques to obtain the data. Thus, these different sources of information provide more detailed and appropriate results (Vebrianto et al., 2020).

5. Sequencing in data collection, the use of quantitative and qualitative data in combination research allows for sequencing in the use of both types of data. There are several possible sequences in data collection in combination research methods, namely: a. quantitative data and qualitative data are taken simultaneously; b. quantitative data are taken first before qualitative data; c. qualitative data are collected first before quantitative data (Azhari et al., 2023).

Mixed Methods Research Design

The mixed methods research design is the technical structure of the implementation of the research type mixed methods.

No.	Design	Flow	Destination	Example
1.	*Convergent Parallel Design*	Quantitative ⇌ Qualitative→ Integration of	Gain comprehensive understanding	Researchers conducted the satisfact ion survey (quantitative) and interviews

		results.	by comparing or combining two approaches that done at together.	with learners (qualitative) in parallel, and then combined the findings of both.
2.	*Explanatory Sequential Design*	Quantitative→ Analysis → Qualitative → Analysis → Combined interpretation.	Explaining quantitative results with additional qualitative insights.	After the survey showed low learning motivation, the researcher conducted interviews to explore the deeper reasons behind the phenomenon.
3.	*Exploratory Sequential Design*	Qualitative → Analysis → Quantitative→ Analysis → Combined interpretation.	Develop a theory or measurement tool based on initial qualitative findings.	Researchers conducted FGDs with teachers to understand teachin g strategies, then created a questionnaire and pass it out for testing statistically.
4.	*Embedded Design*	Main (quantitative/ qualitative) data collection & analysis data → Interpretation.	Provides additional context to the main approach.	In an experiment to improve learning outcomes (quantitative), researchers insert learnin g process observation notes (qualitative) to understand student behavior.
5.	*Transformati ve Design*	quantitative → Follow Up → Qualitative→ Interpretation.	Empowering groups marginali zed groups through impartial research ethical and social.	Study of inclusive education with a qualitative approach to explore the voices of students with disabilities, followed by quantitative to compile data-driven policy.
6.	*Multiphase*	Multiple cycles	Examining the	Stage 1: Qualitative (problem

	Design	of mixed research Methods → Interpretation.	problem in a continuous and incremental manner, commonly used in research term long term or development projects.	identification) → Stage 2: Quantitative (solution testing) → Stage 3: Qualitative (impact evaluation from participants' perspective).

Implications of Mixed Methods Research Findings

The implications of using mixed methods research are wide-ranging and significant. One of the main benefits is its ability to provide a richer and deeper understanding of complex issues. Research that relies on only one approach is often caught up in the limitations of each method. By combining both approaches, researchers can bridge these shortcomings. For example, in education, the use of mixed methods allows researchers to not only measure student learning outcomes quantitatively, but also understand the context and factors that influence these outcomes through interviews with teachers and students (Johnson et al., 2007). This is crucial for formulating more effective and evidence-based education policies.

In social fields, mixed methods approaches provide deeper insights into individual and group behavior. Quantitative data allows for robust statistical analysis, while qualitative data provides richer narratives to understand complex social experiences (Bryman, 2012). Additionally, in the health field, mixed methods research findings can be used to improve the effectiveness of medical interventions and public health policies. By combining epidemiological data with patient interviews, healthcare decision-making can be more responsive to patient needs (Plano Clark & Ivankova, 2016). Overall, the implications of mixed methods research are vast, encompassing policy development, professional practice, as well as academic contributions. Therefore, mixed methods research is increasingly important in addressing complex challenges in various fields.

Challenges in Implementing Mixed Methods Research

Despite its advantages, the application of mixed methods research also faces several challenges that need to be considered by researchers. One of the main challenges is the

complexity of the research design. Because it involves the combination of two different methods, mixed methods require careful planning and a deep understanding of both approaches (Creswell & Plano Clark, 2018).

In addition, mixed methods require more resources than research using only one method. Collecting and analyzing data from two approaches requires more time, effort, and cost (Tashakkori & Teddlie, 2010). Researchers must also have skills in both methods in order to be able to integrate the findings well. Another challenge in the application of mixed methods is data validity and reliability. The process of integrating quantitative and qualitative data often faces difficulties in concept alignment, interpretation of results, and justification of the methodology used (Plano Clark & Ivankova, 2016). Therefore, it is important for researchers to choose the right analysis strategy so that the research results can be academically justified. Finally, the challenge of publication is also a concern, given that there are still scientific journals that focus more on quantitative or qualitative methods separately. Mixed methods researchers need to organize research reports clearly and systematically in order to be accepted by the academic community (Bryman, 2012).

D.   CONCLUSIONS

Mixed methods research offers a comprehensive solution to understanding complex phenomena by integrating quantitative and qualitative approaches. This article provides an in-depth overview of various commonly used mixed methods designs, such as convergent parallel design, exploratory sequential design, embedded design, transformative design, and multiphase design. The use of mixed methods significantly increases the validity and reliability of research findings by allowing for data triangulation and flexibility in in-depth exploration. However, its application demands careful design planning, diverse research skills, and adequate resource allocation. Understanding the basic principles and various mixed methods designs is essential for researchers to design effective studies, generate richer and deeper insights, and overcome the inherent limitations of a single approach. The implications of mixed methods research are significant due to its ability to provide richer and more relevant insights for both researchers and practitioners.

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