From Variables to Research Design: A Deep Dive into Educational Research Methodology

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A R T I C L E   I N F O

A B S T R A K

Pengumpulan dan analisis data yang relevan dengan bidang pendidikan secara sistematis disebut sebagai penelitian pendidikan. Penulisan penelitian adalah praktik yang melelahkan yang secara metodis mendekati solusi terhadap tantangan penelitian tertentu. Ini berbeda dari lembaga pendidikan dan biasanya dipimpin oleh format. Mengingat pentingnya penulisan penelitian, penelitian ini bertujuan untuk menganalisis penjelasan metodologis variabel, latar belakang penelitian, tinjauan literatur & desain penelitian sebagai cara untuk mempromosikan kesarjanaan yang kuat. Penelitian ini menggunakan metode Systematic Literature Review (SLR). Hasil penelitian ini menjelaskan banyak jenis metodologi penelitian yang mendalam. Tujuan utama sumber daya ini adalah untuk membantu akademisi muda dan profesional pendidikan dalam mempelajari latar belakang penelitian, tinjauan literatur, desain penelitian, dan penjelasan metodologis variabel. Penelitian pendidikan memainkan peran penting dalam pengembangan dan peningkatan praktik dan kebijakan pendidikan. Hal ini memungkinkan para pendidik dan pembuat kebijakan untuk membuat keputusan berdasarkan bukti dan data. Ini menawarkan pengetahuan dasar yang bermanfaat bagi mereka yang ingin mengejar karir sebagai peneliti.

A B S T R A C T

The systematic collection and analysis of data relevant to the field of education are referred to as educational research. Research writing is a laborious practice that methodically approaches the solution to a given research challenge. It differs from educational institutions and is typically led by a format. This study aims to analyze methodological explanation of variables, background to the study, literature review & research design as ways of promoting vigorous scholarship. This research uses the Systematic Literature Review (SLR) method. The results of this research explain many types of in-depth research methodology. These resources' main goal is to assist young academics and education professionals in learning about the background of the study, literature review, research design, and methodological explanation of variables. Educational research plays a crucial role in the development and improvement of educational practices and policies. It enables educators and policymakers to make informed decisions based on evidence and data. These offer beneficial fundamental knowledge for those who wish to pursue careers as researchers.

1. INTRODUCTION

The background to the study should clarify the concepts and variables' meanings, give special attention to the dependent variable, highlight its significance and then link or relate it to the independent variables with the appropriate citations (Dharmadi & Agustini, 2019; Yu et al., 2022; Yue, 2019). However, moving from a general to a specific explanation, it's what conveys to the reader, and of course, the subject matter, that the researcher has a solid grasp of the research issue. By including background information about the study in the introduction, you can give the reader important background on the subject being researched (Baumfalk et al., 2019; Madu, 2020; Šimunović & Babarović, 2020). For example, you can highlight and elaborate on earlier studies that laid the groundwork, describe significant historical occurrences that explain why and how the research problem exists or define key study components. Additionally, it acts as a link between the subject of your study and the reader (Agustini et al., 2020; Heap & Waters, 2019; J et al., 2015). The length and depth of this bridge will mostly depend on how much information you believe the reader will need to understand the topic at hand and understand why the problems you are looking into are significant. From a different angle, how long and in-depth your study's background should be will also depend on how much your reader will need to see proof of your thorough comprehension of the research subject (Dorfman & Kalugin, 2020; Shane-Simpson et al., 2022).

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You should effectively show that you understand the important concepts and concerns that underpin your whole study by offering pertinent background information. Basic background knowledge shouldn't be used as a replacement for an in-depth analysis (Saat et al., 2016; Siswono, 2017). Depending on the difficulty of your research and/or the requirements of the assignment, the format and writing style of your background to the subject may change. The study's background should explain the nature of the issue under investigation, its relevance to theory, research, and/or practice, its scope, and the extent to which earlier studies have successfully examined the issue (Hattan et al., 2015; Jamulia, 2018). It should also highlight any gaps that your study aims to fill.

A literature review is a thorough summary of all the information currently accessible on a given subject. Reviews of relevant literature are intended to give an overview and synthesis of the research-supporting materials you have looked into (Eccles & Arsal, 2017; Rahman & Manaf, 2017). Learning more about the earlier research that has been done on the subject is typically the first step you take after selecting a research topic. This information eventually converts into a literature review when you write your research paper. Since it gives background, context, and relevance to the research subject you are examining, the literature review is one of the pillars on which your research concept rests (Bhat & Bhat, 2019; M. Gopalan et al., 2020). The main purpose of the review is to introduce the readers to the need for conducting the said research. A literature review should begin with a thorough literature search using the main keywords in relevant online databases such as Google Scholar, PubMed, etc.

An experimental literature review involves examining all the information that is currently available on a specific subject and identifying any gaps that require further research. An experimental literature review is a term used to describe the process of scanning and critically evaluating the body of prior research (Maithreyi Gopalan et al., 2020; Lee et al., 2019). A theoretical review is used to help establish a lack of appropriate theories or reveal that current theories are inadequate for explaining new or emerging research problems. A theoretical literature review aids in identifying the theories that are currently in existence, their connections, the depth to which they have been explored, and the creation of new testable hypotheses. It is used to summarize and organize your review's main points in writing (Hill, 2021; Siti et al., 2021).

This method selectively explores the literature to confirm or contradict a claim, a deeply held presumption, or a philosophical problem already established in the literature. Creating a body of writing that promotes a different point of view is the goal. The use of them to make summary claims like those found in systematic reviews, however, might potentially introduce issues with bias (Dixon-Woods et al., 2005; Gyasi et al., 2021). It is regarded as a type of research that reviews, critiques, and synthesizes representative literature on a subject to produce fresh frameworks and viewpoints. All research that addresses similar or related theories is included in the body of literature. Regarding clarity, accuracy, and reproducibility, a well-done integrative review upholds the same requirements as primary research.

Historical reviews concentrate on looking at research over some time, frequently beginning with the first instance of a topic, concept, theory, or singularity appearing in the literature and then following its development within the scholarly work of a discipline. To demonstrate familiarity with contemporary trends and to determine the most likely pathways for future study, it is important to situate research in a historical context. The aims of this study is to analyze methodological explanation of variables, background to the study, literature review & research design as ways of promoting vigorous scholarship.

2. METHODS

This research uses the Systematic Literature Review (SLR) method. SLR is a very useful method for systematically collecting, evaluating, and synthesizing existing literature on a particular research topic (Triandini et al., 2019). This method is suitable for exploring a deep dive into educational research methodology. The data collection stages in this research were carried out in several stages. 1.) Search for and identify relevant data sources. This can include scientific journals, books, articles, research reports, and other trusted sources. A literature search was carried out systematically using scientific databases such as Google Scholar, PubMed, or university library databases to search for relevant articles and papers. 2.) Carry out literature selection to determine whether the data is relevant to the research questions created. 3.) Extract relevant data from each article. This may include the main findings, research methods used, samples used, results, and conclusions. The articles use in this study total 30 articles. After collecting data from various sources, it continues with data analysis. This research uses thematic analysis methods to identify patterns, trends and main findings in the literature reviewed. Here the author identifies the ways in which English language teaching and the preservation of local culture interact in the literature studied.

3. RESULT AND DISCUSSION

Results

There are many types of research that can be used in research in the field of education. The explanation is as follows.

Descriptive Research

A descriptive research design involves a full discussion of the situation or case in the study materials. In this type of study design, the researcher collects data, performs analysis, prepares it, and then clearly presents the findings (Han et al., 2022; Lambert & Lambert, 2013). The method of research design is the most flexible. This allows researchers to generate a comprehensive and accurate picture of the phenomenon under investigation. A descriptive design may study one or more variables using a wide variety of research methods. Descriptive research designs are useful for addressing who, what, when, where and how questions about a particular study problem, but they are unable to provide a conclusive answer to the why questions. To characterize "what exists" in terms of factors or conditions in a situation, descriptive research is performed to gather data about the phenomenon's current state. In descriptive research, there are four primary ways to gather data: survey research, developmental research, observational research, and correlational research.

Survey Research

Survey research is a specific kind of research design where surveys are used as the main method of data collection. Surveys are a technique that researchers in this study design employ to better understand individual or group viewpoints on a certain subject or issue of interest (Noble & Heale, 2019; Rea & Parker, 2014). In the systematic investigation, survey research aids in the collection of reliable data sets. Based on its goals, data source, and methodology, survey research can be categorized into various categories (Rintayati et al., 2020). 1.) Interview, this is a form of simulation of the face-to-face survey experience. The fact that it is costly and time-consuming, however, is one of this method's significant drawbacks. 2.) Questionnaire: This is a portion of a survey that is administered to a particular target audience and consists of a list of inquiries or other forms of information-gathering prompts. The purpose of a questionnaire is to gather data from respondents in a survey or statistical analysis by using a set of structured questions.

Developmental Research

This methodology is centred on the examination of variables and their evolution across time. The main focus of this strategy is to examine the growth patterns and rates, as well as their directions, structures, and the common thread that connects them. Various categories of developmental research (M. Gopalan et al., 2020; Noble & Heale, 2019), include: 1.) Cross-sectional Study: With this research strategy, data from a population or a sample that is representative of the population at a certain period are examined. The cross-sectional study cannot track a process of change; it can only measure differences between or from a variety of persons, subjects, or events. 2.) Trend Study: Volunteers in a trend study include participants who are followed throughout time and participants of various ages. A trend study collects information from a certain population that is distinguished by a particular variable, such as education level. It looks at how individuals evolve and develop as they age and takes into consideration any potential cohort or period of measurement effects. By focusing on research themes, methodological approaches, theoretical frameworks, etc. about that research issue, this form of study indicates the current state of a certain research subject in a specific discipline. 3.) Longitudinal Study: Observing the same variables repeatedly over a short or long period is referred to as longitudinal research. Repeated observations are made while tracking the same sample in a longitudinal investigation. When the same group of people are surveyed again, as is the case with longitudinal surveys, researchers may trace changes over time and link them to factors that may help to understand why the changes take place.

Observational Research

With this method, one component of behaviour is highlighted and quantified in terms of its accuracy, frequency, or intensity. Direct observation and systematic observation are the two main forms of observational designs. When you view someone directly, they are aware of your presence (Fryling et al., 2011; Malmqvist et al., 2019). Any technique for observing behavior where the subject is unaware that the researcher is watching them falls under the category of discrete measures. An observational study offers a helpful understanding of a phenomenon and avoids the moral and logistical challenges of organizing a sizable and time-consuming research endeavor.

Correlational Research

Without allowing for any kind of manipulation or control, correlational research examines correlations between variables. Using correlational analysis, researchers can determine the strength and/or direction of a relationship between two (or more) variables. This makes it possible for you to legitimately and externally apply your results to actual situations. The same variables across several subjects at once, the same variables across multiple subjects at various times, and the same variables across multiple subjects at once (Azrai et al., 2017; Konakll, 2015). The correlation between two variables, whose values range from -1 to +1, is determined by a correlation coefficient. Indicating a positive relationship between the variables is a correlation coefficient of 1, whereas a negative association between the two variables is shown by a correlation coefficient of -1.

Evaluation Research Design

Evaluation Research Design is the methodical gathering and review of data that offers insightful feedback on particular objects. Performing a controlled evaluation of the worth of resources committed to a project or particular aim is another popular research design. To collect and analyze pertinent data about organizational procedures and outputs, it frequently uses social research methodologies. Summative and formative evaluations are the two types of evaluation. Formative evaluation is a sort of assessment research that entails determining the target market's or users' needs before starting a project (Aldoobie, 2015; Dhanil & Mufit, 2021). Since it establishes the organization's project's tone and offers beneficial insights for other types of evaluation, formative evaluation serves as the foundation of evaluation research. Summative evaluation is the process of analyzing how something is affected by describing what occurs, delivering the results, evaluating if the intervention may have contributed to the outcome, figuring out the overall effect, and measuring the relative cost of the object or action. The organization can gauge a project's level of success through summative evaluation. Stakeholders, target markets, and potential investors can be informed of these findings.

Action Research Design

The fundamentals of action research design follow a typical cycle in which an investigative posture is initially taken, followed by the development of an understanding of a problem and the formulation of plans for some sort of interventionary strategy. Action research is an approach in which a client and an action researcher work together to diagnose a problem and build a solution based on the diagnosis (Brooke, 2013; Hayama & Desai, 2022). To put it another way, one of the primary characteristics of action research is the researcher's collaboration with organizational members to address organizational issues. Action research is a structured investigation conducted by a teacher to inform and alter a future practice. Action research comes in the forms of solitary teacher research, group action research, district-wide action research, and school-wide action research.

Participatory Action Research Design

Participatory action research is a type of study that actively engages all pertinent parties in analyzing present action to change and enhance it. These are carried out by critically analyzing the contexts that give it meaning, including those that are historical, political, cultural, economic, geographical, and others (Bystrova, 2020; Smets & Struyven, 2020). A participatory action research design involves an action that is both investigated and re-researched by participants throughout the study process, rather than just research that is intended to be followed by action. The principles of participatory action research dictate that a study method must be democratic, equitable, liberating, and life-improving. Four conceptual parties are commonly involved in participatory action research: the researcher(s), the researched, the researched for the final research product, and the researched for critical reference.

Discussion

This method allows researchers to draw on a wide variety of knowledge ranging from the conceptual level to practical documents for use in fieldwork in the areas of ontological and epistemological consideration, quantitative and qualitative integration, sampling, interviewing, data collection, and data analysis techniques (Hair et al., 2017; Jimerson et al., 1997). In certain cases, the method of analysis is more important than the content of what was spoken. It also provides a framework of understanding at different levels (i.e. those of theory, substantive fields, research approaches, and data collection and analysis techniques).

This form includes a summary of the available research that is relevant to a clearly stated research question, as well as data collection, reporting, and analysis from the studies that are part of the review. The research is identified and critically evaluated using pre-specified and standardized methods. Usually, it

focuses on a fairly narrow empirical inquiry, frequently formulated in a cause-and-effect format, such as How much does A contribute to B?

The study design decides how participants are chosen, which variables are used and how they are controlled, how data are gathered and evaluated, and how superfluous variability is managed to answer the main research problem (Ahmmed et al., 2022; Schlegel et al., 2021). A research design is only a structural framework for the many research methodologies and approaches that a researcher uses. The study will be successful if it is designed properly. Research projects that are successful offer objective, precise findings. Reliability, neutrality, validity, and generalizability are the other four fundamental aspects of study design.

The implications of this research help students in the field of education to gain a deeper understanding of the various types of research designs that they can use in their research. This can improve the overall quality of educational research. The results of this research may help in the development of more effective research methodologies in educational contexts, so that research is more valid and reliable. However, this research is limited to certain research methods and does not cover all existing research methods. Therefore, the results may not reflect the diversity of research methods that can be used in educational research.

4. CONCLUSION

The results of this research explain many types of in-depth research methodology. These resources' main goal is to assist young academics and education professionals in learning about the background of the study, literature review, research design, and methodological explanation of variables. Educational research plays a crucial role in the development and improvement of educational practices and policies. It enables educators and policymakers to make informed decisions based on evidence and data. These offer beneficial fundamental knowledge for those who wish to pursue careers as researchers.

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