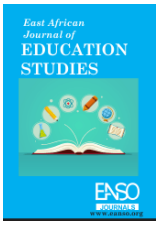
Article DOI: https://doi.org/10.37284/eajes.7.2.1909



East African Journal of Education Studies
eajes.eanso.org
Volume 7, Issue 2, 2024
Print ISSN: 2707-3939 | Online ISSN: 2707-3947
Title DOI: https://doi.org/10.37284/2707-3947

EAST AFRICAN NATURE & SCIENCE ORGANIZATION

Original Article

Literature Review in Scientific Research: An Overview

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Article DOI: https://doi.org/10.37284/eajes.7.2.1909

Date Published: *04 May 2024*

Keywords: *Literature Review, Research Methodology, Systematic, Meta-Analysis, Synthesis.*

ABSTRACT

The quality and success of academic work are closely linked to the literature review process. A literature review is essential to any scientific research study, which entails an in-depth analysis and synthesis of the existing literature and studies related to the research topic. The literature review process thoroughly searches various databases and sources to ensure the review is comprehensive and up to date. The primary objective of this article is to provide an overview of the literature review process in scientific research, its importance in research methodology, and its different types. It also aims to discuss the purpose of conducting a literature review in research, the methods involved, and the significance of having access to relevant literature. Additionally, it provides guidelines for early career researchers on how to conduct a comprehensive literature search. A literature search was conducted in major databases and supplemented by browsing journals and citations with relevant keywords. There are four main types of literature reviews: traditional or narrative, systematic, meta-analysis, and meta-synthesis. By conducting a literature review, researchers gain a deep understanding of the research landscape, identify potential biases and limitations, and contribute to developing knowledge in their field of study. Executing a literature search is fruitless unless researchers possess fundamental knowledge about it. Hence, collecting literature for the literature review is an indispensable step that requires a comprehensive search of various databases and sources, such as academic journals, books, conference proceedings, and other relevant publications. The present article provides vital information and literature search guidelines for early career researchers.

APA CITATION
Ebidor, L. & Ikhide, I. G. (2024). Literature Review in Scientific Research: An Overview *East African Journal of Education Studies*, *7*(2), 211-218. https://doi.org/10.37284/eajes.7.2.1909

CHICAGO CITATION
Ebidor, Lawani-Luwaji, and Ilegbedion Godwin Ikhide. 2024. "Literature Review in Scientific Research: An Overview". *East African Journal of Education Studies* 7 (2), 211-218. https://doi.org/10.37284/eajes.7.2.1909

HARVARD CITATION
Ebidor, L. & Ikhide, I. G. (2024) "Literature Review in Scientific Research: An Overview", *East African Journal of Education Studies*, 7(2), pp. 211-218. doi: 10.37284/eajes.7.2.1909.

IEEE CITATION
L., Ebidor & I. G., Ikhide "Literature Review in Scientific Research: An Overview" *EAJES*, vol. 7, no. 2, pp. 211-218, May. 2024. doi:10.37284/eajes.7.2.1909.

MLA CITATION
Ebidor, Lawani-Luwaji, & Ilegbedion Godwin Ikhide. "Literature Review in Scientific Research: An Overview". *East African Journal of Education Studies*, Vol. 7, no. 2, May. 2024, pp. 211-218, doi:10.37284/eajes.7.2.1909.

Article DOI: https://doi.org/10.37284/eajes.7.2.1909

INTRODUCTION

Building upon and connecting to existing knowledge is fundamental to research across academic disciplines. Given this, a literature review is an indispensable aspect of scientific research. It entails an in-depth analysis and synthesis of extant literature and studies about the research topic. This process facilitates the identification of research gaps and aids in formulating research questions for further investigation (Snyder, 2019).

Literature review plays a vital role in designing the research methodology, as it provides the researcher with an understanding of the research landscape and informs them about the best practices and approaches to use. Therefore, collecting literature for the literature review is a critical step that requires a thorough search of various databases and sources, such as academic journals, books, conference proceedings, and other relevant publications. This process ensures that the literature review is comprehensive and up-to-date, essential for producing high-quality research (Baumeister & Leary, 1997).

A literature review critically analyses published sources on a particular subject matter and involves an in-depth examination of academic texts, scholarly articles, and other relevant materials to gain knowledge and a deep understanding of a specific topic. The primary goal of a literature review is to provide a comprehensive background and reasoning for a research project (Kraus et al., 2022).

A literature review is essential in research methodology for several reasons. It helps identify research gaps and areas where further research is needed. It also allows researchers to formulate specific research questions or hypotheses and provides a theoretical framework. The literature review informs methodological decisions and contextualises research findings. All these aspects highlight the importance of conducting a literature review for a research study (Torraco, 2005).

A literature review involves analysing and combining existing literature to identify gaps and potential directions for future research. It can also challenge established assumptions and norms, recognise problems and errors, and promote scientific discussions within a particular field or topic (Post et al., 2020).

It is an essential chapter in an undergraduate project work and a postgraduate thesis that offers a critical evaluation of the existing literature and identifies gaps in the research that need further investigation. A well-written literature review also helps establish the significance of the research problem and provides the basis for the research question and design.

The Purpose of the Literature Review

A literature review is a methodological tool used to answer research questions, evaluate theory or evidence, examine the validity or accuracy of specific theories, and provide an overview of a particular issue or research problem. It can also be used to create research agendas, identify research gaps, engage in theory development, and map the development of a particular research field over time. The method will vary depending on the goal of the literature review (Snyder, 2019). The process of conducting a literature review is crucial for research. It involves following specific steps and measures to ensure accuracy, precision, and reliability. The quality of the review depends on the methods used, the findings discovered, and the clarity of the report. Various strategies, standards, and guidelines can be used to conduct a thorough literature review based on the purpose of the review (Booth et al., 2021)

The importance of having access to relevant literature cannot be overstated in any research project. Previous research helps authors understand the research area, validate research questions and hypotheses, and establish the purpose of the study (Moher et al., 2009). The literature review is an essential part of any research project. It helps to map and evaluate the relevant intellectual territory to develop research questions and expand the knowledge base (Tranfield et al., 2003). Literature reviews in research can help address broader and abstract questions and engage in post hoc theorising. They

Article DOI: https://doi.org/10.37284/eajes.7.2.1909

can also strengthen the case for null hypothesis conclusions and appreciate methodological diversity (Baumeister et al., 1997).

A literature review plays a pivotal role in the development of a new conceptual model or theory while also serving as a valuable tool for charting the progression of a particular research field over time. However, it is essential to note that the methodology employed in conducting a literature review is contingent upon its objective. Whether the goal is to build a new theoretical framework or to survey the historical trajectory of a field, the selection of a suitable methodology is crucial to the success of the review (Snyder, 2019).

METHODOLOGY

A literature search was conducted in major databases and supplemented by browsing journals and citations with relevant keywords such as literature review, narrative review, systematic review, and meta-analysis.

TYPES OF LITERATURE REVIEW

Traditional or Narrative Literature Review

A traditional or narrative literature review carefully examines existing literature related to a particular research question or topic. It involves a comprehensive analysis of relevant publications identified, read, and evaluated by the researcher to synthesise information and summarise the current knowledge on the topic. The main objective of this type of review is to identify the major themes and trends present in the literature and present them cohesively and logically (Li et al., 2018).

This type of review is commonly used in the humanities and social sciences, where research questions are often more exploratory, and the data is qualitative. The researcher typically employs a systematic approach to identify relevant literature, including online databases, academic journals, books, and reports (Rozas et al., 2010).

Once relevant literature has been identified, researchers evaluate each publication's content to assess its quality and relevance. They then synthesise the information to provide a comprehensive summary of the key findings and themes in the literature. Finally, researchers set a future research agenda. This process enables researchers to present a complete overview of what is already known and unknown in a research field (Paul & Criado, 2020).

A traditional or narrative literature review is highly beneficial for researchers seeking to understand a specific topic or research question. By synthesising the existing literature, researchers can gain insights into the current state of knowledge, identify gaps, and develop new research questions and hypotheses. (Paul & Barari, 2022).

Systematic Literature Review

A systematic literature review is a research method that involves an extensive and meticulous investigation of all relevant studies on a particular topic. It involves a comprehensive and systematic search of various databases, journals, and other sources of information, followed by a critical appraisal and synthesis of the gathered data (Linnenluecke et al., 2020).

Systematically reviewing and analysing large amounts of data allows for the accurate and reliable summarisation of evidence, making it a crucial tool for healthcare industry professionals. Systematic reviews and meta-analyses help keep healthcare professionals up to date on the latest developments, providing policymakers with the necessary information to evaluate the risks and benefits of specific interventions and offering patients and their caregivers a comprehensive summary of related research. In addition, these reviews can serve as a starting point for clinical practice guidelines, help funders make informed decisions about supporting new research, and assist editors in determining which new studies to publish (Liberati et al., 2009). Systematic reviews are a widely used method in medical science to synthesize research findings thoroughly. They are conducted systematically, transparently, and reproducibly, and they are often considered the gold standard among reviews (Davis et al., 2014).

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The primary objective of a systematic literature review is to provide a comprehensive and unbiased summary of all the available evidence on a particular topic. It is a highly structured and rigorous research method that follows strict guidelines to avoid any potential bias or error in the study (Moher et al., 2009). Systematic literature reviews often inform clinical practice guidelines, policy decisions, and future research directions. By synthesising all the available evidence, they provide a high level of evidence that is considered more reliable than individual studies or expert opinions. (Snyder, 2019).

Conducting a systematic literature review involves defining clear search criteria, screening and selecting relevant articles, extracting data from selected articles, and synthesising the findings (Booth et al., 2021). It is a time-consuming and intensive process that requires expertise in research methodology and data analysis. However, a well-conducted systematic literature review provides a valuable contribution to the research field and helps make informed decisions based on reliable evidence (Davis et al., 2014).

Meta-Analysis Literature Review

A meta-analysis literature review is a research study that involves collecting, analysing, and integrating data from multiple studies or research articles to answer a particular research question or investigate a specific topic. Unlike a traditional literature review, which focuses on summarising and synthesising information from individual studies, meta-analysis uses statistical methods to combine the results of multiple studies, providing a more comprehensive and thorough analysis of the research question (Hernandez et al., 2020).

The main objective of a meta-analysis literature review is to identify patterns and trends in the results of multiple studies and draw more general conclusions than those based on a single study. By synthesising the findings of multiple studies, meta-analysis can reveal inconsistencies, discrepancies, or gaps in the existing research and identify factors that may influence the outcomes of the Meta-analysis. This statistical technique combines and compares results from various studies on a particular topic. Its main objective is identifying patterns, discrepancies, or relationships that emerge when multiple studies are examined together (Haidich et al., 2021; Macaskill et al., 2023).

Moreover, meta-analysis can also help to estimate the size and direction of the effects of the variables studied in the included studies. This can provide a more accurate and precise estimate of the effect size than any individual study can offer. Additionally, meta-analysis can identify sources of bias or heterogeneity in the included studies and explore the potential impact of these factors on the overall results. (Moher et al., 2009)

Overall, a meta-analysis literature review is a powerful tool for researchers to integrate and synthesise the existing knowledge on a particular topic, draw more robust and generalised conclusions, and identify areas for future research (Borenstein et al., 2021).

Meta-synthesis

A meta-analysis literature review is a research study that involves collecting, analysing, and integrating data from multiple studies or research articles to answer a particular research question or investigate a specific topic. Unlike a traditional literature review, which focuses on summarising and synthesising information from individual studies, meta-analysis uses statistical methods to combine the results of multiple studies, providing a more comprehensive and thorough analysis of the research question (Moher et al., 2009).

The meta-synthesis literature review involves a comprehensive and systematic process of synthesising the findings of multiple qualitative studies. It is a research methodology that aims to develop a new and deeper understanding of the research topic by identifying, assessing, and synthesising the findings of multiple studies. Meta-synthesis involves rigorous data extraction, analysis, and synthesis to identify common themes, patterns, and concepts across the studies. This process helps to generate new insights and

Article DOI: https://doi.org/10.37284/eajes.7.2.1909

knowledge that are impossible to achieve through a single study alone (Lachal et al., 2017).

A meta-synthesis literature review is a powerful tool for summarising and interpreting qualitative research findings. Its purpose is to provide a comprehensive and integrated understanding of a research topic by synthesising the results of multiple studies. This methodology can be used to develop new theories, frameworks, and models that can help to advance the field (Toye et al., 2014).

The meta-synthesis literature review is a robust research methodology that allows researchers to understand a research topic deeply. It is a systematic and rigorous process combining multiple studies to identify common themes, patterns, and concepts. This approach is beneficial for qualitative research, as it can help to develop new knowledge and theories in a specific field. Overall, the meta-synthesis approach is a valuable tool for researchers looking to conduct comprehensive research (Thorne., 2022).

Factors to Consider Before Conducting a Literature Review

When conducting a literature review, selecting a specific topic and developing a research question to guide the review is essential. Remember that the literature review is not merely a collection of unrelated studies but a synthesis of relevant background and research developments related to the research question. The research question should not be too broad or too narrow to ensure it is manageable. It is also essential to consider the number of studies to examine, the degree of comprehensiveness, and the time frame to be covered. Equally important is choosing the appropriate databases for effective searches. Check the field to identify discipline-specific databases and keep track of the searches (Paré & Kitsiou, 2017).

Process of Collecting Literature

The process of collecting literature for the literature review involves several steps.

Identify Databases

The first step is identifying relevant databases and search engines. Some commonly used scientific research databases contain peer-reviewed articles, conference proceedings, dissertations, and other scholarly materials (Gusenbauer& Haddaway, 2020). Some search engines are shown in *Table 1*.

Choosing Keywords

In academic literature, a "keyword" refers to a specific term or phrase that concisely and accurately summarises the subject matter or a particular aspect presented in a given document. Keywords are important words or concepts representing a study's main ideas and theories. They help readers quickly understand what an academic article is about and assist researchers in finding related articles (Corrin et al., 2022).

Manual analysis has become impractical as the volume of text documents online and in digital libraries has significantly increased. Efficient methods for extracting keywords to identify the essential elements of these documents are now essential. Keyword extraction has been a prominent area of research for years (Firoozeh et al., 2020)

Keywords are crucial in identifying relevant literature, making information retrieval more effective, and supporting the organisation and categorisation of research articles. Key terms can be single words or phrases used in academic writing. Using keywords can simplify processing large amounts of textual data, aiding in organisation and retrieval based on content. Keywords are commonly used in academic articles and textbooks to represent the central theme and can also be used for text clustering (Siddiqi & Sharan, 2015).

To initiate the search process, one must select the appropriate search terms and databases. This includes inputting relevant keywords and search terms into the search engine to obtain relevant literature. The subsequent step is to choose suitable keywords and search terms relevant to the research topic, which can aid in retrieving

Article DOI: https://doi.org/10.37284/eajes.7.2.1909

pertinent literature. Synonyms and related terms can also be utilised to expand the search.

Scrutinise the Search Results

In order to streamline research, it is essential to eliminate any duplicate records once relevant results have been collected. This can be done using reference management software with deduplication features or by manually sorting references alphabetically to weed out any duplicates. Once done, evaluating the relevance of the remaining results is crucial. The title and abstract of each record should be carefully examined, and any that do not align with the research question should be discarded. Additionally, the source of the research should be considered. If it is known that the research was published in a predatory journal, it is best to avoid including it in the review, as its validity may be in question due to a lack of proper peer review (IFIS, 2023).

Table 1: Databases

Type of Databases	Description
PubMed	A search engine that primarily accesses the MEDLINE database of biomedical references and abstracts.
Web of Science	This citation database covers a wide range of high-impact journals across multiple fields. It is a multidisciplinary database that allows access to thousands of journals.
Scopus	An abstract and citation database that covers a wide range of disciplines, including science, technology, medicine, social sciences, arts, and humanities
IEEE Xplore	A digital library that provides access to IEEE journals, transactions, letters, magazines, conference proceedings, and standards
JSTOR	A digital library that offers access to academic material, including journals, books, and primary sources across various disciplines.
arXiv	A collection of electronic preprints (e-prints) of scientific papers in Mathematics, Physics, Astronomy, Computer Science, Quantitative Biology, Statistics, and Quantitative Finance.
Google Scholar	A web search engine indexes scholarly literature in various formats and disciplines.
ScienceDirect	A scientific database featuring articles and chapters from Elsevier's publications.
SpringerLink	A platform that provides access to millions of scientific documents published by Springer, including journals, books, protocols, reference works, and proceedings.
Nature Research Journals	A set of influential scientific journals that cover a wide range of natural science disciplines, including biology, chemistry, physics, and medicine
Nature Research Journals	A set of influential scientific journals that cover a wide range of natural science disciplines, including biology, chemistry, physics, and medicine
Wiley Online Library	A multidisciplinary online resource collection covers life, health, physical sciences, social science, and humanities.
PLOS (Public Library of Science)	A non-profit organisation publishes open-access scientific journals in biology, medicine, genetics, and related fields.

(Paré & Kitsiou, 2017)

No single database comprehensively covers all medical literature, necessitating a search across multiple databases (Torraco, 2005)

It is vital for the researcher to carefully scrutinise the search results and select only those articles that are relevant to their research topic. Once selected, these articles should be critically evaluated for their quality and relevance. The search result can be accomplished using a checklist that evaluates each article's research design, methodology, sample size, data analysis, and conclusions (Paré & Kitsiou 2017).

Article DOI: https://doi.org/10.37284/eajes.7.2.1909

When evaluating the quality of the literature review, it is important to consider the articles' publication dates. While it is essential to include both recent and older literature to gain a comprehensive understanding of the research topic, more weight should be given to recent literature since it reflects the current state of knowledge in the field.

Organise the Literature

When conducting a literature review, assembling the necessary sources can be challenging, time-consuming, and requires perseverance. Reference management software can simplify the process by assisting with storage, organisation, citation, and sharing of references. With software options like EndNote, Zotero, Mendeley, and BibTeX, one can choose a program that suits their operating system, citation style, word processor, budget, and collaboration needs. By automating the creation and formatting of citations and bibliography, reference management software can save time and minimise frustration. It is vital to keep track of the search process and document sources for future reference (Pohlen, 2021).

CONCLUSION

Gathering literature for the literature review is crucial in scientific research. This entails identifying pertinent databases, choosing suitable keywords and search terms, retrieving applicable literature, critically assessing the literature, and considering the publication date and other literature sources. The calibre of the literature review is contingent upon the quality of the chosen articles, and researchers should exercise prudence when utilising grey literature.

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