

Research and Development in Educational Management: A Systematic Literature Review

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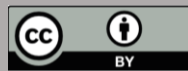
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ABSTRACT

Research and Development (R&D) in educational management aims to identify, develop, and test innovative methods or products that can enhance the quality of education. Through a systematic literature review, this study evaluates previous findings to provide in-depth insights into best practices in educational management. The purpose of this research is to identify and analyze R&D approaches in educational management through a systematic review. It seeks to evaluate the effectiveness of innovations in educational managerial practices and to offer evidence-based recommendations for the development of better educational policies and strategies. This study employs a systematic review method to examine relevant literature on Research and Development (R&D) in educational management. This approach aims to analyze findings from various previous studies, synthesize information, and identify patterns or trends in the application of R&D in the education sector. The results of this study show that R&D in educational management plays a significant role in improving the quality of education through innovation and system improvement. The main findings reveal that the R&D approach can strengthen educational policies and enhance teaching practices by utilizing valid data and evidence. In conclusion, Research and Development (R&D) in educational management is an effective approach to improving education quality through evidence-based innovation. This study emphasizes the importance of applying R&D to identify educational challenges and to develop more efficient and relevant solutions in the education sector.

INTRODUCTION

Educational management plays a crucial role in determining the quality and effectiveness of educational systems. As the field continues to evolve, there is a growing need for innovative approaches to improve educational practices in response to the rapid changes and challenges faced by the education sector. One such approach gaining increasing attention is the application of Research and Development (R&D) in educational management. R&D holds the potential to provide evidence-based solutions to a wide range of educational challenges, from policy formulation and curriculum development to teaching strategies and school management.

R&D in education is not just about developing new educational tools or products; it also focuses on creating more effective managerial strategies that support optimal teaching and learning. Rahman (Rahman, 2020) emphasizes that R&D helps improve educational management by generating insights and strategies based on rigorous research. These strategies can enhance

educational outcomes and the overall learning experience. According to Creswell (2014), R&D in educational management plays a key role in addressing the evolving demands of the education system, such as curriculum reforms, the integration of new technologies, and the growing demand for more inclusive and equitable education. Through research, educational stakeholders can identify problems, develop evidence-based solutions, and test policies and practices to determine their effectiveness.

Despite its potential, the implementation of R&D in educational management remains limited. Several barriers hinder its widespread adoption, such as resource constraints, resistance to change, and a lack of understanding about the value of research in educational management (Creswell, 2014). Many educational institutions have not fully embraced R&D, overlooking its potential to create more effective policies and practices. Fink (2013) argues that educational institutions must recognize R&D as a critical tool for designing innovative and effective management strategies.

Therefore, a systematic examination of how R&D can be integrated into educational management is needed. This research aims to explore the various approaches to applying R&D in educational management, focusing on their effectiveness in improving policies, managerial practices, and educational outcomes. Through a systematic literature review, the study will gather and analyze existing research on the application of R&D in educational management, with the goal of identifying trends, patterns, and gaps in the current literature.

Buntoro (2015) suggests that R&D in education leads to more adaptive, evidence-based policies. Daryanto (2018) highlights the role of R&D in fostering continuous innovation, while Rahardjo (2019) stresses the importance of comprehensive evaluations to ensure that R&D-driven policies lead to substantial improvements in educational quality. Suyanto (2005) supports the idea that R&D provides a foundation for creating more efficient educational policies, and Yusuf (2016) asserts that an evidence-based approach helps ensure the sustainability of educational development.

The study will use a systematic review approach to analyze past research on the application of R&D in educational management. This method was chosen for its ability to provide a comprehensive and objective overview of current trends and developments. The review will involve a thorough search of relevant literature, selecting studies based on criteria that ensure quality and relevance to educational management. The quality of the research will be assessed based on methodology, data reliability, and relevance to the educational context.

By synthesizing findings from various studies, this research will evaluate the successes and challenges of applying R&D in different educational settings. It will also examine policies and strategies that have proven effective in improving education quality, offering evidence-based recommendations for further development in educational management. The aim is to foster more efficient, adaptive, and sustainable policies that can improve education at all levels, from primary to higher education ((Barrett, 2007; Creswell, 2014; Petticrew & Roberts, 2006)).

This paper focuses on R&D in educational management, specifically in the context of Indonesia, where its application has been limited. While R&D has been widely applied in other sectors, its integration into educational management is still developing. The novelty of this research lies in its contribution to compiling and analyzing existing studies and evaluating the latest trends in R&D application in educational management.

This paper underscores the critical role of integrating research with educational management as a means to develop evidence-based policies and practices. Such an approach is grounded in the recognition that research and development (R&D) serve as key drivers of educational innovation and improvement. Previous studies have consistently highlighted the benefits of research-informed decision-making in education. For instance, Merriam (2009) emphasized that the application of R&D in educational contexts can significantly enhance student learning outcomes and institutional effectiveness. Similarly, Levin (2013) argued that connecting empirical research with policy formation ensures that reforms are contextually relevant and practically viable.

Despite these findings, a persistent gap remains in the actual implementation of evidence-based strategies within many educational systems, particularly at the managerial and policy-making levels. While the theoretical value of integrating research into educational practice is well-documented, less is known about the specific mechanisms and models that successfully translate research into action within diverse educational settings. Furthermore, there is a limited understanding of how educational managers can systematically apply research findings to address complex challenges such as resource allocation, teacher performance, and curriculum reform.

This study seeks to address these gaps by offering actionable insights for policymakers, educational managers, and practitioners. It aims to bridge the divide between research and practice, demonstrating how evidence-based strategies can be operationalized in real-world educational contexts. By doing so, the study contributes to the broader discourse on educational improvement and supports the development of more effective and context-sensitive management strategies..

An inclusive and adaptive R&D approach is also emphasized in this study. This approach takes into account local educational needs and challenges, offering solutions that are relevant to the current educational context. By adopting this approach, R&D can make a significant contribution to improving the quality of education through more structured, evidence-based strategies.

In conclusion, the application of R&D in educational management has the potential to enhance the quality and effectiveness of education systems. Through systematic research and evidence-based practices, R&D can support the development of innovative policies, strategies, and tools that address the evolving needs of the education sector. This research aims to provide a comprehensive understanding of how R&D can be applied to improve educational management and promote the development of sustainable, adaptive, and evidence-based educational policies.

METHODS

This study uses a systematic literature review method to analyze the application of Research and Development (R&D) in educational management. The systematic review method is an approach used to organize, evaluate, and synthesize findings from various relevant studies, with the goal of providing comprehensive and evidence-based insights (Fink, 2013). This systematic review is conducted to assess the extent to which R&D has been implemented in the

education context and how it can impact innovation in educational policy, teaching, and educational evaluation (Petticrew & Roberts, 2006).

The first step in this study is literature selection, which involves searching for relevant articles in academic databases such as Google Scholar, ERIC (Education Resources Information Center), JSTOR, and ScienceDirect. The selection criteria include articles published within a certain time frame, the relevance of the topic to R&D in education, and the quality of the research that can be trusted. This process ensures that only studies with academic and practical value are included in the review (Liberati *et al.*, 2009).

After selecting the relevant literature, the next stage is thematic analysis, where the researcher will identify patterns and themes emerging from the various existing studies. This process aims to understand the trends in the application of R&D in education and to compare the results obtained from the various studies conducted. This analysis helps to evaluate the effectiveness of R&D approaches in advancing educational policy and to identify gaps that need to be addressed (Thomas & Harden, 2008).

The evaluation of the methodologies used in the analyzed studies is also a focus of this research. The researcher will assess the strengths and weaknesses of each research approach used in R&D studies in education. This approach leads to an understanding of how R&D can be used to improve educational policies and practices, as well as to encourage innovation in the education system (Creswell, 2014).

Through this systematic review, the study aims to provide a deeper understanding of how R&D can be effectively applied in educational management. Thus, this research not only concludes the potential and challenges of R&D but also provides evidence-based recommendations that can be used to design better policies and practices in educational management in the future (Barrett, 2007).

RESULT AND DISCUSSION

Research and Development in Educational Management

Research and Development (R&D) is an approach used to develop new products or processes through scientific research and experiments conducted systematically. In the context of educational management, R&D has enormous potential to change the way education is managed and practiced, particularly in policy development, teaching methods, and educational evaluation. This approach aims to improve the quality of education by utilizing research findings to create innovations that can enhance the effectiveness and efficiency of the education sector. According to Bowen (2009), R&D in education not only focuses on improving the quality of teaching but also on developing educational policies that are more responsive to societal needs and technological advancements. This study aims to conduct a systematic review of the existing literature on the application of R&D in educational management by reviewing how innovations in policy and teaching practices can have a positive impact on overall educational management. R&D plays a crucial role in creating evidence-based solutions that can improve the quality of education holistically, including resource management, learning methods, and policies for evaluating educational outcomes that are more measurable and adaptive to changing times.

The Importance of R&D in Educational Management

R&D in educational management aims to identify and develop practices, policies, and technologies that can improve the quality of education. According to O'Neill and McMahon (2016), R&D allows education to evolve dynamically by integrating new technologies, teaching methodologies, and data-driven assessments. R&D in education not only leads to the development of new products but also improves existing processes to create systems that are more responsive to learning needs and the challenges faced by educational stakeholders. In this context, R&D is used to evaluate existing educational policies and identify evidence-based solutions that can improve the performance of educational institutions. R&D can help design more effective learning strategies, both at the policy and operational levels (Bryk dkk., 2015). This is essential because the educational world is constantly changing and requires adaptation to rapid social, technological, and economic changes.

Methods and Approaches of R&D in Educational Management

R&D research in educational management often uses evidence-based approaches focused on data analysis and experimentation to test specific hypotheses about educational management. This approach involves the use of both quantitative and qualitative methods to collect relevant and in-depth data. According to Creswell (2014), mixed methods are one of the strategies often used in R&D to provide a more holistic view of the challenges and opportunities in education. Surveys, interviews, and observations are common data collection techniques used in R&D research to obtain comprehensive insights from various stakeholders, such as teachers, school principals, and education managers.

One of the main strengths of R&D in educational management is its ability to translate research findings into applicable policies or practices. Bowen (2009) emphasizes the importance of document analysis and historical data in R&D to explore patterns in previous educational policies, as well as to analyze the long-term impacts of policy changes.

Challenges in Implementing R&D in Educational Management

Although R&D has great potential in improving the quality of education, its implementation is often hindered by several challenges. One of these is the limitation of available resources, including funding, time, and the skills of the human resources involved in the R&D process (Merriam, 2009). R&D research requires significant investments in time and expertise to conduct experiments and evaluations accurately, which may not be available in many educational institutions, especially in developing countries.

Additionally, resistance to change is a major challenge faced in implementing R&D in many educational institutions. Many educational stakeholders, such as teachers and school administrators, may be reluctant to adopt innovations or new methods due to concerns about failure or lack of understanding of the benefits. Therefore, it is essential to build greater awareness and understanding of the benefits of R&D and how it can enhance educational practices (Fink, 2013).

Gaps in R&D Research in Educational Management

Although many studies have been conducted on R&D in educational management, there are some gaps that need to be addressed. Many studies have not sufficiently explored how R&D can be applied in broader contexts, such as the management of educational policies at the national or regional level. Moreover, the existing findings often focus on specific sectors within education, such as educational technology, without considering broader managerial or administrative aspects.

Further studies are needed to explore in more depth how R&D can influence educational policies and the overall managerial system. According to Bryk et al. (2015), it is important to conduct further research that integrates various disciplines, including education theory, psychology, and management, to build a stronger theoretical foundation for R&D-based educational management.

The Role of R&D in Educational Management

Research and Development (R&D) in educational management is a crucial approach for improving the quality of education through innovation and policy improvement. By relying on evidence-based approaches and in-depth data analysis, R&D provides significant insights into designing more effective and efficient educational policies. R&D enables the identification of areas needing improvement and innovation, creating data-driven solutions that can enhance educational outcomes (Anderson, 2015). Through a systematic research process, R&D becomes an effective tool for improving educational quality. However, the implementation of R&D in educational management faces various challenges, such as resource limitations and resistance to change that can arise both at the institutional and individual levels (Barrett, 2007). Therefore, to achieve the full potential of R&D in education, it is essential to address these challenges and improve the understanding of how to apply R&D effectively. This study highlights the importance of systematic review in applying R&D in educational management and the need for further development to address gaps in the existing literature on this topic (Petticrew & Roberts, 2006).

The Application of Research and Development (R&D) in Educational Management: A Systematic Literature Review

This study aims to analyze the application of Research and Development (R&D) in educational management through a systematic literature review, focusing on innovation, education policy, and the development of more effective and efficient educational practices. Based on the literature analysis conducted, various findings on the application of R&D in educational management were revealed, including the challenges faced in its implementation. This study reveals that R&D plays an important role in improving the quality of education through innovations in teaching methods, curriculum development, and the updating of education policies that are more responsive to the needs of students and the development of the times (Barrett, 2007). Although R&D offers great potential in creating evidence-based solutions to various educational problems, its implementation is often hindered by challenges such as

resource limitations, resistance to change, and a lack of understanding about the importance of research in education policy (Petticrew & Roberts, 2006). This study shows that the successful implementation of R&D in educational management requires better integration between research outcomes and evidence-based education policies, as well as enhancing the capacity of educational institutions to conduct research continuously and effectively (Creswell, 2014). Therefore, the application of R&D in education needs to be supported by policies that encourage the allocation of sufficient resources, training for education managers, and the creation of an environment that supports innovation and research-based change.

The Role of Research and Development in the Development of Education Policies and Practices

The results of this systematic review indicate that Research and Development (R&D) plays a significant role in the development of education policies and practices. Several studies analyzed revealed that R&D can drive innovation in educational curricula, teaching methods, and the evaluation of educational outcomes (Barrett, 2007). For example, a study by Anderson (2015) showed that evidence-based R&D can produce policies that are more adaptive to societal needs and the development of educational technology. Anderson emphasized that through evidence-based approaches, R&D can create policies that are responsive to dynamic changes in the field of education. Additionally, a study by Thomas & Harden (2008) suggested that R&D also provides opportunities to design more efficient education models that better meet the learning needs of students at various educational levels. According to Thomas & Harden, R&D enables the creation of more measurable and relevant solutions to the challenges faced by education systems in various countries. This research emphasizes that to achieve the maximum benefits of R&D, it is important to integrate research findings into broader and more sustainable education policies that contribute to the overall improvement of educational quality.

The Role of Research and Development in Creating a Dynamic Education Environment

Furthermore, this study also reveals that Research and Development (R&D) contributes to creating a more dynamic and responsive education environment. Through data-driven and systematic experimental approaches, R&D can identify weaknesses in existing education systems and provide evidence-based solutions to address them (Fink, 2013). This approach allows for in-depth problem identification and provides appropriate recommendations for improving education quality. For example, several studies show that R&D can improve educational resource management, enhance teaching quality, and strengthen educational outcome evaluations. Petticrew and Roberts (2006) emphasized that the implementation of R&D in educational management can increase the efficiency of resource management and improve the quality of the learning process through more effective, data-driven evaluations. Therefore, R&D is not only a tool for developing new policies but also serves as a crucial mechanism in strengthening the overall education system, making it more adaptive to development and the needs of the times.

Challenges in Implementing R&D in Educational Management

Although Research and Development (R&D) offers great potential for improving educational management, its implementation still faces significant challenges. One of the main challenges is the limitation of resources, both financial and human. Several studies analyzed show that many educational institutions, particularly in developing countries, face difficulties in allocating sufficient budgets for R&D activities. This is often due to budget priorities being focused more on other operational needs, such as facility maintenance and educator salaries, which results in minimal support for research and development (Creswell, 2014). Furthermore, the lack of trained human resources in research also poses a significant barrier to the implementation of R&D in educational management. The shortage of competent experts in educational research causes data collection and analysis processes to be slower and less effective. Therefore, to maximize the potential of R&D in improving educational management, it is important to address these constraints by increasing resource allocation and providing professional training in research.

Resistance to Change in Implementing R&D in Educational Management

Another challenge faced in the application of Research and Development (R&D) in educational management is resistance to change from various stakeholders in education, including school administrators, teachers, and governments. Most parties involved in educational management tend to maintain the existing system and are reluctant to embrace new approaches offered by R&D research findings. This is mainly due to a sense of comfort with proven methods and fear of the uncertainty that comes with change. Research by Barrett (2007) shows that many stakeholders prefer to stick with long-established traditions rather than explore new approaches that could improve the effectiveness of education. Therefore, more intensive efforts are needed to increase understanding and involvement of all stakeholders in the R&D process to make its implementation more effective. Ongoing socialization about the benefits of R&D, as well as adequate training for educators and education managers, can be key to overcoming this resistance and ensuring successful implementation.

Gaps in the Application of R&D in Education Policy

Moreover, there are significant gaps in the application of Research and Development (R&D) in the education context that need to be addressed. Several studies analyzed show that there is still a lack of research directly linking R&D with evidence-based education policies. Although many studies point to innovations in educational practices, the findings have not been fully utilized to formulate more effective, data-driven education policies. According to Petticrew and Roberts (2006), this occurs due to the lack of effort to integrate R&D findings into a policy framework that can be widely applied and adopted across various education levels. Therefore, it is essential to develop more in-depth studies on the relationship between R&D findings and education policy. Further research is needed to identify more systematic approaches for integrating R&D outcomes into education policies, which will ultimately improve the overall

quality of education. This will allow for policies that are more responsive to the educational needs at various levels and contexts.

Conclusion and Implications of R&D Application in Educational Management

Overall, this research demonstrates that Research and Development (R&D) plays a crucial role in improving educational management, particularly in terms of policy innovation, teaching method improvements, and evidence-based education evaluation. The implementation of R&D can have a significant impact on creating education policies that are more responsive to the times and more relevant to the needs of students and society (Anderson, 2015). However, the application of R&D in education also faces a number of challenges, such as resource limitations, both in financial aspects and in terms of expertise, resistance to change from various stakeholders, and gaps in integrating research findings with broader and more applicable education policies (Barrett, 2007). Therefore, to achieve the optimal benefits of R&D, policies are needed to support the allocation of sufficient resources for research activities, as well as efforts to raise awareness and understanding among stakeholders about the importance of research in educational management (Petticrew & Roberts, 2006). These efforts will ensure that R&D outcomes can be more effectively applied to education policies and practices that will improve the overall quality of education.

CONCLUSION

This paper emphasizes the vital role of Research and Development (R&D) in educational management, particularly in improving policies, teaching practices, and evidence-based educational evaluations. Through a systematic and data-driven approach, R&D has the potential to provide in-depth insights into the strengths and weaknesses of the existing educational system and to formulate more effective solutions to the challenges faced by educational institutions.

However, this literature review also reveals that the utilization of R&D in educational management still faces several obstacles, including limited resources, resistance from various stakeholders, and the gap between research findings and policies that can be broadly implemented. These conditions indicate that, although R&D holds great potential, its application is not yet fully optimized in the context of educational decision-making and policy formulation.

Therefore, in order to improve educational management and promote the development of sustainable, adaptive, and evidence-based educational policies, an integrated strategy is required, which includes:

1. Increased resource allocation for R&D activities in the education sector;
2. Capacity building and research literacy development for policymakers and educational managers;
3. Establishment of integrative mechanisms that connect research findings with policy-making processes in education.

Furthermore, future research is needed to identify effective and replicable models for implementing R&D in various local contexts. In doing so, R&D will not merely serve as a

theoretical academic endeavor but will become a concrete foundation in designing a more responsive, innovative, and quality-oriented education system.

Through this approach, it is expected that the future of educational management in Indonesia can become more dynamic, transformative, and capable of addressing global challenges in a sustainable manner through evidence-based policy development.

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