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Evaluating the effectiveness of case-based learning in designing basic leadership training: a systematic literature review

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ABSTRACT

Technological advances and the increasing complexity of challenges in the world of work demand more effective and contextual leadership training designs. This study aims to explore the characteristics of the included study, the effectiveness of Case-Based Learning (CBL) in improving learning outcomes in basic leadership training, as well as the factors that affect the success of its implementation. Using the PRISMA approach, articles that met the inclusion criteria were systematically analyzed from the ScienceDirect database. The results showed that although many studies supported the effectiveness of CBL in improving training outcomes, there was a variation in findings that pointed to the need for further research to understand the contextual factors that influence its success. Evidence shows that CBL is effective in developing leadership skills, teamwork, and management abilities. However, elements such as organizational culture, participant characteristics, and implementation methods can affect the results achieved. Training design that includes simulation, feedback, collaboration, as well as gender inclusivity plays an important role in the successful implementation of CBL. This study emphasizes the need for more in-depth studies to identify specific variables that affect the effectiveness of CBL in basic leadership training. These findings provide valuable insights for future leadership training program designers and encourage further exploration of CBL success factors in various contexts.



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Introduction

In an era of rapid technological development and the increasingly complex dynamics of the world of work, the need for effective leadership training design is becoming increasingly important. Major changes, such as the adoption of artificial intelligence, automation, digitalization, and hybrid work models, are creating new challenges that require innovative leadership approaches. For example, leaders must now be able to manage remote teams. Research shows that effectiveness in managing remote teams depends not only on achieving work results but also on improving the well-being of team members and developing their skills (Triplett, 2022, 2023). In addition, leaders are required to ensure cybersecurity within the organization. This includes implementing strict security policies, training employees on cybersecurity best practices, and developing a security-focused organizational culture (Aksoy, 2024; Burrell et al., 2023). On the other hand, supporting innovation in a competitive work environment is also a priority. Research reveals that leaders who can

integrate technology with innovation strategies can create added value for organizations and increase competitiveness in the market (Zhang et al., 2023).

Leaders are also faced with ethical challenges in artificial intelligence-based decision-making. In this context, they need to develop a framework that considers the ethical and social dimensions, so that every decision is effective and responsible (Giordano et al., 2021). The complexity of these challenges reveals the weaknesses of traditional leadership training approaches, which are often less adaptive to the needs of the modern workforce. As a solution, the Case-Based Learning (CBL) approach emerged as a promising option. CBL offers authentic and contextually relevant learning through real-world case studies (Ertmer & Koehler, 2015; Tawfik & Kolodner, 2016). Although it is effective in formal education, such as in medicine, law, and business, the application of CBL in professional training, particularly leadership training, is still limited and not yet fully consistent (Kim et al., 2006; Luo et al., 2018).

CBL is a learning approach that allows participants to use real-life situations as a foundation for skill development, thus bridging the gap between theory and practice (Choi & Lee, 2009). In the context of leadership training, this gap arises because traditional methods often only teach theoretical concepts without providing an opportunity to apply them in real-life situations. CBL uniquely addresses this by creating realistic work situation simulations, where participants can practice managing contemporary leadership challenges. This process involves analyzing and discussing leadership cases designed to improve critical thinking, problem-solving, and contextual decision-making skills (Ertmer & Koehler, 2015; Williams, 2005). Furthermore, CBL can increase participants' enthusiasm and participation in learning (Thistlethwaite et al., 2013).

However, the current literature suggests significant gaps in research regarding applying CBL to basic leadership training, including a lack of exploration of the factors that influence its success. For example, previous studies have often only highlighted the success of CBL in formal education without elaborating on the weaknesses of this method, such as a lack of flexibility in professional training situations (Kim et al., 2006; Luo et al., 2018). Studies on leadership training also show that traditional programs often fail to improve leadership performance on a sustainable basis, so a new, more evidence-based approach is needed (Salas et al., 2012). Therefore, integrating the latest research is needed to identify best practices and provide evidence-based guidance in designing CBL-based leadership training.

One important step to fill this gap is to evaluate previous findings regarding the effectiveness of CBL in various areas of education. Previously, several studies have been conducted to look at the effectiveness of CBL in various areas of education such as medicine, business, and law. However, these studies only focus on formal education and have not thoroughly explored the potential of CBL in the context of basic leadership training. In addition to the above, there are still limitations in understanding the factors that affect the successful implementation of CBL in leadership training design. This progress is realized by integrating the latest research on CBL into specific basic leadership training designs. This SLR will provide a comprehensive overview of the opportunities, barriers, and best practices in implementing CBL to create an efficient basic leadership training design.

In this context, facing the increasingly complex demands of the world of work requires an innovative approach to designing leadership training. Research (Noe et al., 2014) supports the recognition of the potential of CBL in improving leadership transfer. Nevertheless, the gap between theory and practice is still a major obstacle that must be overcome to ensure that CBL can be effectively integrated into the design of existing basic leadership training. To address these gaps, systematic literature reviews (SLR) are needed to incorporate the latest findings, identify best practices, and provide evidence-based guidance. The purpose of this study is to evaluate the feasibility of applying Case-Based Learning in the development of basic leadership training programs. The research questions formulated by the author include.

Method

This study uses the Systematic Literature Review (SLR) method to collect and analyze various studies related to the application of Case-Based Learning (CBL) in training design over the last five years (2020–2024). In the implementation of this SLR, the author refers to the guidelines set by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher et al., 2009). The process of filtering and distributing data can be seen in Figure 1. PRISMA Case-Based Learning Flow Diagram.

In the initial identification stage, a total of 48,502 recordings were identified from Science Direct and other databases. After removing duplicate records (0) and records marked as unfeasible by automation tools (31,370), as well as non-research and non-educational articles (11,537), 1,045 records were filtered for the next

stage. Article selection is carried out in two stages: first, using a discrimination method to assess the title and abstract of the article to determine its conformity with inclusion and exclusion criteria. A total of 968 recordings were excluded, and 77 recordings were requested to be retrieved. No recordings failed to be taken. The records that were later assessed as feasible reached 77, and 68 records were excluded because they did not discuss Case-Based Learning in the design of basic leadership training. As a result, 9 studies were included in this review, all of which were reports relevant to the research topic.

The inclusion criteria used in this SLR include articles published in scientific journals, with a primary focus on research that applies Competency-Based Learning (CBL) in the context of training design in the field of education and management, especially those published in Science Direct. Exclusion criteria include articles with: (1) Incomplete structures, such as those containing only abstracts; (2) Review or conceptual articles that do not present empirical research results; and (3) Research that is not fully accessible.

The search strategy was carried out by accessing the Science Direct electronic database, using relevant keywords such as "case-based learning", "leadership training design", "professional development", and "learning in the workplace". The article selection process is carried out in two stages: first, using a discrimination method to assess the title and abstract of the article to match the inclusion and exclusion criteria. Articles that pass the first stage are then assessed more in-depth to determine their suitability. The selection of articles was carried out by two independent researchers, with discussions to reach a consensus regarding differences of opinion.

The data extracted from each article included: the author's name, the year of publication, the purpose of the research, the method used, the characteristics of the sample, as well as the type of CBL applied in the training context. Once the data is extracted, the information is arranged narratively to answer the research question. Each article is then grouped based on similarity in theme and analyzed descriptively according to a predetermined research question.

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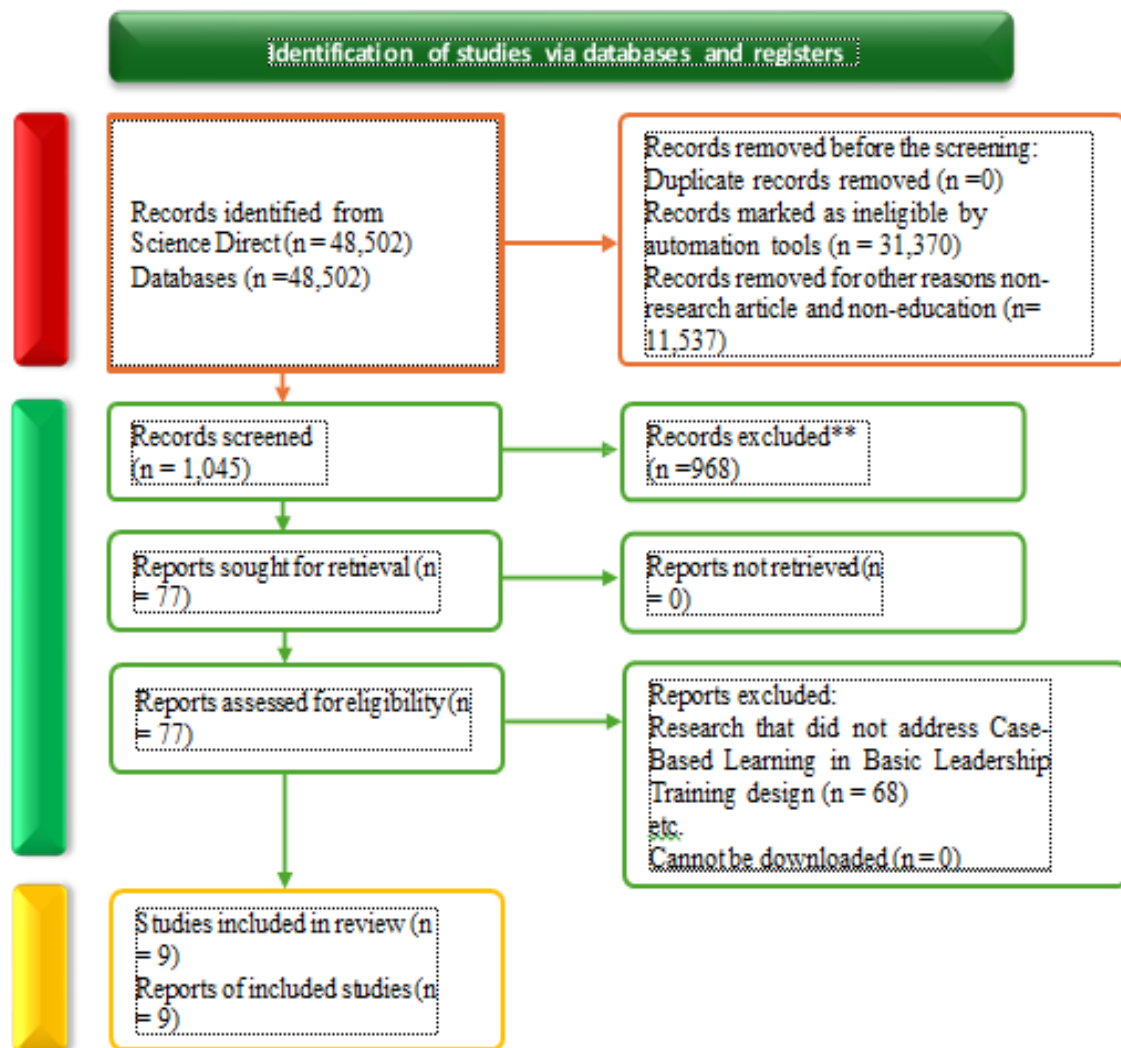


Figure 1 <PRISMA Case-based Learning Flow Diagram>

Results and Discussions

Characteristics of Inclusive Studies

Based on the articles that have been screened, the findings regarding the characteristics of the selected articles show diversity in the methodology and research context regarding leadership and development. Of the nine articles analyzed, the research approaches used varied widely: qualitative studies dominated (44.4%), followed by mixed methods (33.3%), as well as some studies with quantitative or quasi-experimental approaches (22.2%). This suggests that although various methodologies are used, most of the research is focused on a qualitative approach with some using phenomenology and case studies.

For example Lambrev, (2024) conducted qualitative research on teacher leadership during the pandemic in Bulgaria, while Jensen & Ottesen, (2022) used case studies to analyze teaching practices in higher education in Norway and California. Ghamrawi et al., (2024) Take a phenomenological approach in examining the impact of destructive leadership in college, looking at it through a faculty perspective. Some other studies use a mixed or quasi-experimental approach, such as Brewer & Devnew, (2022) which reviews authentic leadership development programs with combined methods, and Wong & Ng, (2020) who assessed leadership training in Taiwanese hospitals with a longitudinal quasi-experimental design. The study also revealed that contextual factors, such as education level and sector, influenced the design and findings of the study.

Most of the studies analyzed focused on higher education, as conducted by Egitim, (2024); Ghamrawi et al., (2024); and Jensen & Ottesen, (2022), which examines the context of leadership in higher education. However, there is also research involving other sectors, such as elementary schools raised by Lambrev, (2024) and hospitals that are the object of research by several researchers. The variation in sample size was also

evident, from case studies involving fewer participants such as those conducted by Lavoie-Tremblay et al., to longitudinal studies with larger numbers of participants, such as those conducted by OwenOwen et al., (2020), which illustrates the differences in methodology and complexity of research in various settings. This variation suggests that while the context and sample size may vary, the primary focus remains on understanding and developing leadership in a variety of settings.

The Effectiveness of Case-Based Learning (CBL) in Improving Learning Outcomes in the Context of Basic Leadership Training

The findings of the reviewed article show that CBL has significant effectiveness in improving the outcomes of basic leadership training. Some studies, such as those conducted by (Corriveau, 2020), found that CBL significantly improved training outcomes. The same thing was also found by Jensen & Ottesen, (2022), which reported an improvement in student learning outcomes in leadership training through the CBL approach. They noted that these results are important for the evaluation and design of programs in higher education. Ghamrawi et al., (2024) confirmed that CBL improves leadership training outcomes for students, and shows that CBL not only improves leadership skills, but also teamwork and management abilities.

Research by Lambrev, (2024) suggests that the effectiveness of Case-Based Learning (CBL) in the context of basic leadership training cannot be proven, which provides an idea that although many other studies support the effectiveness of CBL in such contexts, varied results remain. Some studies, such as those conducted by Corriveau, (2020), dan Jensen & Ottesen, (2022) affirm that CBL can improve leadership skills in a significant way. However, the findings from Lambrev, (2024) describe that the expected results are not always achieved, which indicates the existence of certain factors in a context that is not yet fully understood. Therefore, this difference in results indicates that further research is needed to investigate specific contexts such as organizational culture, participant characteristics, and CBL implementation methods that can influence the success of leadership training through CBL. This points to the need for a deeper exploration of how these variables can interact to influence the effectiveness of CBL in basic leadership training.

Factors Influencing the Successful Implementation of CBL in Training Design

An analysis of the factors influencing the successful implementation of CBL in basic leadership training design shows the existence of various important elements. Simulations, action games, and interactive seminars were identified as key factors supporting experiential learning (Brewer & Devnew, 2022; Corriveau, 2020). In addition, reflection and feedback are also important components that support the success of CBL (Corriveau, 2020). Brewer & Devnew, (2022) highlight the importance of psychological safety in building self-awareness and leadership competence.

Several other studies, such as those conducted by Ghamrawi et al., (2024) and Lambrev, (2024) identify the importance of collaboration and relationships between participants. In addition, cultural aspects and student contexts, especially in terms of digital competence, also affect the effectiveness of CBL in leadership training design. Owen Owen et al., (2020) also noted that mentorship and storytelling can play a big role in the successful implementation of CBL, while Egitim (2024) emphasized the importance of gender inclusivity in training design to increase awareness about gender equality in leadership.

The findings from the selected articles show that there is consistency in several factors that affect the successful implementation of CBL, such as pedagogical approaches, collaboration, and gender inclusivity. However, it is important to conduct a more in-depth synthesis by comparing studies that support the effectiveness of CBL with those that do not, as well as explore the factors that cause the differences in the findings. The process of data coding and systematic theme development will help provide a clearer structure and enrich the thematic analysis, which is currently still limited to more discrete descriptive presentations. These findings provide useful insights for designing more effective leadership training programs in the future.

Discussion

The purpose of this study is to assess whether Case-Based Learning can be applied in the development of basic leadership training programs or not. The results of the identification show several things, including the diversity of methodologies that provide a varied understanding of the effectiveness of leadership training using CBL, according to the recommendations of (Yadav et al., 2010). However, it should be noted that the dominance of qualitative research may carry the risk of limited generalization of findings, as asserted by (Creswell, J. W., & Poth, C. N., 2016) Maintaining a balance between deep immersion and the ability to expand on CBL research on leadership training is a challenge. The majority of studies support the effectiveness of CBL in improving learning outcomes, which is consistent with the findings (Thistlethwaite et al., 2013) about the benefits of CBL in professional education. However, there was one study that did not address the effectiveness of CBL and showed that there may be variations in its effectiveness depending on the context.

This reinforces the importance of careful design as emphasized by (Herreid, 2011). This makes people wonder about how we can optimize CBL for different leadership training contexts.

The identification of the various factors influencing the successful implementation of CBL shows a holistic approach and is in line with transformative learning theory (Mezirow, 1997). However, consistent implementation of CBL can be difficult due to the complexity of these factors, as Jonassen and (Jonassen & Hernandez-Serrano, 2002). To develop an effective CBL program, it is important to maintain a balance between the depth of approach and ease of implementation.

The importance of a tailored approach to CBL implementation is emphasized by contextual and cultural aspects, along with the support of situational learning theories (Lavery & Dahill-Brown, 2024). The discovery of how CBL plays a role in developing a gender-inclusive leadership perspective adds an important dimension, in line with research (Ely et al., 2011) about the relationship between leadership and diversity. However, it is also difficult to design a case that can effectively involve various aspects of diversity and inclusion in the context of leadership. Future research is recommended to conduct longitudinal studies aimed at evaluating the long-term impact of CBL on leadership development in a variety of cultural and organizational contexts. This is important considering the contextual factors that have been expected that the researchers take into account the integration of various factors such as psychological safety, reflection, and inclusivity in their implications.

Conclusion

This study shows that although various studies support the effectiveness of Case-Based Learning (CBL) in improving basic leadership training outcomes, there are differences in results that require further research to understand the contextual factors that influence CBL success. Findings from various articles show that CBL is effective in developing leadership, teamwork, and management skills, but factors such as organizational culture, participant characteristics, and CBL implementation methods can affect the results achieved. In addition, the training design, which includes elements such as simulation, feedback, collaboration, as well as gender inclusivity, plays a key role in the successful implementation of CBL. Therefore, more in-depth research is needed to identify specific variables that can interact with CBL effectiveness in the context of basic leadership training. This research provides useful insights for future leadership training program designers and encourages further exploration of the factors that influence the success of CBL in various settings.

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