

## **The Effectiveness of Employee Training and Development: A Systematic Review from a Human Resource Management Perspective**

**Rena Ria Zalukhu<sup>1</sup>, Delipiter Lase<sup>1</sup>, Arisman Telaumbanua<sup>1</sup>**

<sup>1</sup>Universitas Nias, Indonesia

Corresponding author e-mail: [renazalk24@gmail.com](mailto:renazalk24@gmail.com)

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**Abstract:** This study systematically reviews recent literature (2020–2024) on the effectiveness of employee training and development programs from a human resource management (HRM) perspective. The main focus is to identify key approaches, models, and factors contributing to training success in modern organizational settings. Using a Systematic Literature Review (SLR) method based on the PRISMA guidelines, a total of 14 peer-reviewed journal articles were analyzed, obtained from Scopus, Web of Science, and Google Scholar through database search, inclusion/exclusion screening, and content coding. Findings highlight five major factors affecting training effectiveness: need-based training design, instructional and evaluation models, leadership and organizational culture, technology integration, and impact on employee performance and retention. Well-structured and contextual training significantly enhances organizational capability. This study provides valuable insights for HR managers, training designers, organizational leaders, and policymakers. It serves as a reference for developing adaptive, strategic, and sustainable training programs aligned with technological change. Emphasizing the integration of digital technology and leadership roles, this review contributes to advancing dynamic HRM strategies.

**Keywords:** Employee Training, Employee Development, Human Resource Development, Competency Development, Workforce Training

## **A. Introduction**

In the era of rapid technological disruption and increasing global competition, human resource management (HRM) faces growing challenges in strategically building a workforce that is adaptive, innovative, and highly competitive. Organizations can no longer rely solely on technical skills; instead, they must promote the development of critical thinking, collaboration, and responsiveness to environmental changes. In this context, employee training and development have become a key component of modern HRM strategies. Karman, (2020) asserts that investment in training aligned with organizational needs can sustainably strengthen competitiveness amidst complex market dynamics.

Digital transformation has also significantly reshaped the landscape of human resource development. The use of technology in training—such as Learning Management Systems (LMS) and e-learning platforms—enhances efficiency, accessibility, and informed decision-making. Kasbuntoro, (2022) emphasizes that the digitalization of HR functions supports organizational agility in responding to change, while (Pillai & Srivastava, 2022), through the concept of Smart HRM 4.0, argue that integrating technology with managerial practices enhances the organization's dynamic capabilities.

Various studies demonstrate that structured training not only improves individual skills but also positively impacts productivity, team effectiveness, and overall organizational performance (Katić et al., 2020; Ahmed et al., 2024). Effective training further contributes to self-efficacy, job satisfaction, and employee loyalty. Organizations that implement continuous training strategies tend to experience higher retention rates and cultivate a collaborative work culture (Hasyim & Bakri, 2023). Thus, training is not merely a tool for individual development, but a strategic foundation for building resilient and adaptive organizational culture.

Theoretical frameworks such as human capital theory reinforce the argument that investment in education and training directly contributes to increased productivity and profitability (Hasyim & Bakri, 2023). Therefore, training should be aligned with strategic organizational goals to deliver measurable performance outcomes. The ADDIE model (Analysis, Design, Development, Implementation, Evaluation) is a widely used systematic approach to designing training programs that meet organizational needs and allow for structured evaluation (Dayanti et al., 2023). Furthermore, the Kirkpatrick evaluation model, which encompasses four levels—reaction, learning, behavior, and results—serves as an essential reference in measuring training effectiveness comprehensively (Kirkpatrick & Kirkpatrick, 2016).

Despite the longstanding role of training and development in HRM strategies, its effectiveness varies across organizations. Some studies note that training programs not based on real needs often fail to effectively transfer knowledge into workplace practice (Omer, 2021). Additionally, challenges related to implementing technology-based training frequently arise, especially in organizations that lack adequate infrastructure or a culture of learning (Drydak, 2022; Tsvuura & Ngulube, 2020). Hence, it is crucial for organizations to adopt systematic, data-driven, and context-specific approaches tailored to both individual and organizational needs.

Several studies have attempted to evaluate training effectiveness from multiple dimensions, including instructional design, evaluation models, leadership roles, and technology integration. However, these findings remain scattered across various contexts and have not been systematically compiled to provide a comprehensive understanding (Nurlina & Lestari, 2022). This highlights the need for a literature review that synthesizes recent empirical evidence on the key factors contributing to successful employee training and development programs (Rosani et al., 2023).

Although numerous studies have examined the effectiveness of employee training, there remains a gap in the literature concerning the systematic synthesis of recent empirical findings. Previous research tends to be fragmented, with most studies focusing on a single dimension, such as technology, instructional design, or leadership, without integrating these aspects into a broader human resource management (HRM) framework. Moreover, many earlier works have not adequately addressed recent developments related to digital transformation, increasingly dynamic organizational needs, and evolving work patterns. Therefore, this systematic literature review seeks to bridge this gap by providing a comprehensive thematic synthesis of empirical evidence published between 2020 and 2024.

Given this urgency, the present study aims to systematically review scholarly literature on the effectiveness of employee training and development from an HRM perspective, particularly focusing on publications from the past five years (2020–2024). This review seeks to identify effective approaches, models, and best practices that improve training outcomes and support the achievement of organizational goals. Accordingly, this article not only contributes to academic discourse in the field of HRM but also offers practical insights for organizations in designing contextual, measurable, and sustainable training programs.

## **B. Methods**

This study employs a Systematic Literature Review (SLR) approach to identify, evaluate, and synthesize relevant research findings on the effectiveness of employee training and development programs from a human resource management perspective. The SLR method was chosen because it enables researchers to draw evidence-based conclusions with a broad scope of literature, while minimizing subjective bias through systematic selection and analysis procedures. In its implementation, this study follows the Preferred

Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) as a reporting guideline.

### **Literature Search Strategy**

The literature was collected through searches in internationally recognized academic databases, including Scopus, Web of Science, and Google Scholar. These databases were selected to ensure comprehensive and relevant coverage of scholarly publications. The search utilized a combination of English keywords as follows: “training effectiveness” AND “human resource development” AND “employee performance.”

The search was focused on publications between 2020 and 2024, limited to peer-reviewed journal articles written in either English or Indonesian and available in full-text. The selection of the 2020–2024 timeframe was intended to ensure that the reviewed literature reflects the most recent developments in employee training practices, particularly in the context of digital transformation. This period is considered crucial, as organizations have been facing accelerated technological change and significant shifts in work patterns. Scopus and Web of Science were chosen as the primary databases due to their reputation for providing high-quality, peer-reviewed articles with broad global coverage. Google Scholar was used as a complementary source to capture studies that may not be indexed in the two primary databases, particularly contextual literature from Indonesia and the broader Asian region.

### **Inclusion and Exclusion Criteria**

To ensure the relevance of the literature analyzed in this systematic review, specific inclusion and exclusion criteria were applied. The inclusion criteria consisted of:

1. Articles published between 2020 and 2024;
2. Studies focusing on employee training and development;
3. Research examining training effectiveness from the human resource management (HRM) perspective;

4. Empirical studies or in-depth theoretical analyses available in full-text (PDF or HTML).

**The exclusion criteria included:**

1. Non-peer-reviewed publications such as opinions, editorials, or conference abstracts;
2. Studies not directly related to employee training (e.g., training for students, communities, or general public);
3. Articles focusing solely on the technological aspects of training without connecting them to the effectiveness of HR development.

**Literature Selection Procedure**

Article selection followed a systematic process guided by the PRISMA protocol. The first stage involved identifying potentially relevant articles from Scopus, Web of Science, and Google Scholar, which yielded 235 records. In the screening stage, titles and abstracts were reviewed, narrowing the list to 98 articles. This was followed by a full-text eligibility assessment, based on the predefined inclusion and exclusion criteria, which reduced the number to 34 articles. Finally, a synthesis phase was conducted to remove duplicates and irrelevant studies, resulting in 14 core articles for detailed thematic analysis. This process is illustrated in Table 1 below.

**Table 1. Review Methodology**

<b>Step</b>	<b>Process</b>	<b>Details</b>
Identification	Article Search	Databases: Scopus, Web of Science, Google Scholar
Screening	Title & Abstract Review	Initial selection based on topic relevance
Eligibility	Full-Text Assessment	Focused on HR training articles (2020–2024)
Analysis	Article Review	Methods, key findings, and critical appraisal
Conclusion	Future Research Insights	Recommendations and directions for further studies

### **Data Analysis Technique**

The analysis employed a thematic synthesis approach. Each selected article was examined to identify its main focus and research findings, which were then grouped into recurring dominant themes. These themes include:

1. Need-based training design
2. Use of instructional and evaluation models
3. Role of leadership and organizational culture support
4. Integration of technology in training
5. Impact of training on employee performance and retention

The analysis was conducted inductively and comparatively, focusing on identifying patterns of consistency and variation across studies. This approach allowed for the construction of a comprehensive and synthetic understanding of training and development effectiveness from a human resource management (HRM) perspective.

## **C. Results and Discussion**

### **Results**

The systematic review of 14 selected scholarly articles yielded five interrelated key themes that explain the effectiveness of employee training and development programs from a human resource management (HRM) perspective, namely: (1) need-based training design, (2) use of instructional and evaluation models, (3) the role of leadership and organizational support, (4) integration of technology in training, and (5) the impact of training on employee performance and retention.

### **Need-Based Training Design**

The majority of studies emphasize that the effectiveness of training is highly determined by the alignment between training content and the actual needs of both the organization and individual employees. Training programs designed based on needs

assessments have been shown to significantly enhance participant motivation, knowledge transfer, and impact on work behavior (Ntow et al., 2024; Ahmed et al., 2024). Several studies also highlight the importance of involving key stakeholders—including line managers, employees, and training teams—in the planning process to ensure the relevance and direction of the training.

Additionally, adapting training to the local context and organizational culture plays a crucial role in increasing participant engagement and learning effectiveness. A study by (Hasyim & Bakri, 2023) found that generic training tends to be less effective than programs designed to be specific and contextualized.

### **Instructional and Training Evaluation Models**

Most of the reviewed articles employed the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) in designing training programs. This model is considered effective in guiding the training process systematically—from planning to evaluation—while ensuring alignment between training objectives and expected outcomes (Dayanti et al., 2023). On the other hand, training effectiveness is also frequently assessed using the Kirkpatrick Model, which includes four levels of evaluation: reaction, learning, behavioral change, and results.

However, several studies noted that many organizations tend to stop at Level 1 and 2 evaluations (reaction and learning), without thoroughly assessing behavioral changes and their impact on organizational outcomes (Kirkpatrick & Kirkpatrick, 2016; Omer, 2021). This highlights the need for organizations to strengthen their capacity in conducting comprehensive and data-driven training evaluations.

### **Role of Leadership and Organizational Support**

Several articles emphasize that transformational leadership and strong top management support play a crucial role in the success of

training programs. When leaders actively support the integration of training outcomes into daily work practices, the adoption rate and overall training effectiveness increase significantly (Hussien et al., 2021; Yu et al., 2022). Moreover, organizations with a strong learning culture tend to be more successful in absorbing and applying training outcomes compared to those lacking follow-up mechanisms or incentive systems.

These studies highlight that training is not solely the responsibility of the HR department, but a part of the organization's overall strategic agenda that requires cross-functional involvement.

### **Integration of Technology in Training**

Technological advancements—especially following the COVID-19 pandemic—have accelerated the adoption of digital platforms in training processes, including the use of Learning Management Systems (LMS), webinars, and app-based microlearning. These technologies enable training to be more flexible, adaptive, and measurable. Drydakis (2022) notes that LMS can significantly enhance training effectiveness when supported by adequate technological infrastructure and sufficient digital readiness among employees.

However, major challenges remain, particularly regarding organizational culture and digital literacy. Several organizations still face difficulties in fully transitioning from conventional to digital training systems (Tsvuura & Ngulube, 2020). Therefore, the adoption of training technology must be accompanied by change management strategies and initial training for end-users.

### **Impact of Training on Performance and Retention**

Nearly all of the analyzed articles conclude that well-designed training programs have a positive impact on enhancing self-efficacy, work productivity, job satisfaction, and employee loyalty (Katić et al., 2020; Ahmed et al., 2024). In the long term, training

also contributes to strengthening team collaboration, fostering an innovative work culture, and reducing turnover rates.

The effectiveness of training in improving organizational performance is also reflected in enhanced financial indicators and operational efficiency, as demonstrated by (Hasyim & Bakri, 2023). Thus, human resource training and development should be regarded as a strategic investment that benefits not only individual employees but also contributes to the resilience and competitiveness of the organization. The detailed summary of the 14 analyzed articles is presented in Table 2.

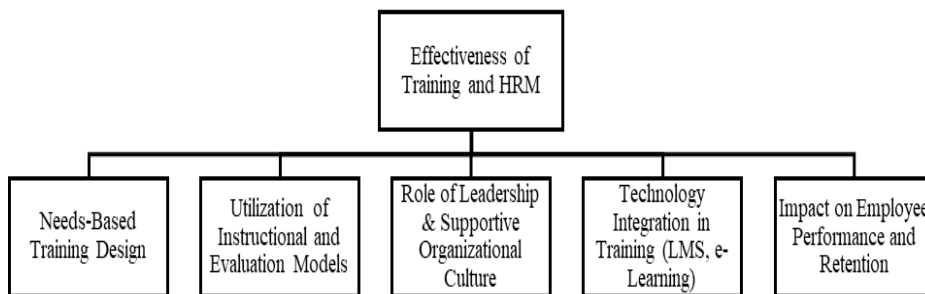
**Table 2. Synthesis of Selected Studies on Training and Development Effectiveness**

<b>No.</b>	<b>Authors (Year)</b>	<b>Research Objective</b>	<b>Method</b>	<b>Key Findings</b>
1	Ahmed et al. (2024)	Analyze the effect of training on employee retention	Quantitative survey	Need-based training improves self-efficacy and job retention
2	Katić et al. (2020)	Measure the impact of training on team productivity	Longitudinal quantitative	Significant increase in team productivity and efficiency
3	Hasyim & Bakri (2023)	Examine the link between training investment and organizational performance	Qualitative study	Training as a strategic investment boosts profitability
4	Dayanti et al. (2023)	Evaluate ADDIE model implementation	Descriptive study	ADDIE ensures training efficiency and goal alignment
5	Drydakīs (2022)	Assess the role of LMS in learning transformation	Literature review	LMS enhances learning flexibility and time efficiency

<b>No.</b>	<b>Authors (Year)</b>	<b>Research Objective</b>	<b>Method</b>	<b>Key Findings</b>
6	Tsvuura & Ngulube (2020)	Analyze organizational readiness for digital training	Exploratory study	Digital literacy and work culture affect LMS success
7	Ntow et al. (2024)	Measure impact of need-based training	Field survey	80% of respondents reported performance improvement after training
8	Yu et al. (2022)	Examine leadership's role in training outcomes	Mixed-method	Transformational leadership strengthens training adoption
9	Tu et al. (2021)	Adapt training to social trends	Case study	ADDIE is suitable for responding to social dynamics
10	Hussien et al. (2021)	Impact of training on organizational culture	Field study	Training reinforces a resilient organizational culture
11	Omer (2021)	Examine failure in training evaluation stages	Qualitative study	Weak evaluations stem from training misaligned with real needs
12	Karman (2020)	Training as a source of competitive advantage	Review	Adaptive training strengthens organizational resilience
13	Kasbuntoro (2022)	Impact of digitalization in HR practices	Empirical study	Technology accelerates engagement and decision-making

No.	Authors (Year)	Research Objective	Method	Key Findings
14	Pillai & Srivastava (2022)	Smart HRM 4.0 in training practices	Qualitative study	HR 4.0 requires dynamic capabilities in training

Table 2 presents a summary of the 14 articles analyzed in this study. The findings highlight various training approaches, research methods, and their impacts on both organizations and individuals in the context of human resource development. The thematic structure derived from the synthesis is shown in Figure 1.



**Figure 1. Thematic Structure of Training and Development Effectiveness in Human Resource Management**

This diagram illustrates five key themes that contribute to the effectiveness of training and human resource development programs, namely: need-based training design, the use of instructional and evaluation models, the role of leadership and organizational culture support, the integration of technology in training, and the impact of training on employee performance and retention.

### **Discussion**

Based on the synthesis of 14 selected articles, it is evident that the effectiveness of employee training and development is not

determined by a single factor, but rather by the interaction of several key dimensions.

First, need-based training design serves as a crucial foundation. Training programs that are not aligned with the actual needs of the organization or individual tend to fail in transferring learning effectively, as noted by (Ntow et al., 2024; Ahmed et al., 2024).

Second, the application of instructional models such as ADDIE has been shown to provide a clear structure and direction in training development (Dayanti et al., 2023; Tu et al., 2021). However, true effectiveness can only be confirmed when training is followed by comprehensive evaluation. The Kirkpatrick model, which measures up to the organizational results level, is often recommended (Kirkpatrick & Kirkpatrick, 2016). Unfortunately, many organizations stop at the initial levels of evaluation—reaction and learning—and do not systematically assess behavior change or financial impact.

Third, the success of training programs is strongly influenced by leadership and organizational support. Studies by (Yu et al., 2022) and (Hussien et al., 2021) reveal that leaders who actively encourage the implementation of training outcomes significantly contribute to program effectiveness. A learning-oriented organizational culture also enhances the acceptance of training and fosters a more adaptive and innovative work environment.

Fourth, technology integration acts as a catalyst in expanding the reach, efficiency, and flexibility of training. Platforms such as Learning Management Systems (LMS) are especially beneficial in global or post-pandemic organizational contexts (Drydakis, 2022). However, studies like (Tsvuura & Ngulube, 2020) emphasize that the success of digital training initiatives is highly dependent on organizational readiness and employees' digital literacy.

Finally, nearly all the reviewed studies conclude that well-designed training contributes positively to self-efficacy, work productivity, employee retention, and even overall organizational efficiency (Hasyim & Bakri, 2023; Katić et al., 2020). Training is no longer seen as a cost burden, but rather as a strategic long-term investment that fosters competitive advantage.

#### **D. Conclusions**

This systematic literature review concludes that the effectiveness of employee training and development programs is determined by five key elements: (1) need-based training design, (2) instructional and evaluation models, (3) leadership and organizational culture, (4) technology integration in training, and (5) the impact on employee performance and retention. The synthesis of 14 selected articles demonstrates that training programs designed in a structured manner, grounded in needs analysis, and integrated with organizational strategy not only enhance technical and non-technical skills but also strengthen competitiveness and organizational resilience.

Furthermore, this study underscores the critical role of leadership in ensuring that training outcomes are effectively implemented in daily work practices, as well as the importance of an organizational culture that fosters continuous learning. The adoption of modern training technologies has been shown to expand access, increase flexibility, and accelerate knowledge transfer, although its success remains contingent upon organizational readiness and employees' digital literacy.

In sum, employee training and development should not be regarded as a mere administrative activity but as a strategic investment with long-term implications for productivity, retention, and organizational competitiveness. This review provides an academic contribution by presenting up-to-date empirical evidence while

also offering practical insights for HR managers, training designers, and policymakers in developing training programs that are contextualized, adaptive, and sustainable.

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