

Effective Strategies for Human Resources Training and Development To Improve Employee Competence

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Abstract: *Human resource (HR) training and development have become essential strategies for improving organizational competitiveness in the era of digital transformation, globalization, and rapid workplace changes. Many organizations continue to experience competency gaps among employees, which negatively affect productivity and innovation. Although substantial investments have been made in training programs, their effectiveness often remains limited due to inadequate training needs analysis, ineffective program design, poor implementation, and insufficient evaluation. Therefore, this study aims to identify effective HR training and development strategies that enhance employee competence and provide practical recommendations for organizations in Indonesia.*

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Introduction

The rapid development of digital technology, globalization, and changes in the business environment have pushed organizations to increase their competitiveness through quality human resource (HR) management. Organizational excellence is no longer solely determined by physical assets and technology, but also by the ability of employees to adapt, innovate, and continuously improve their competencies. In this context, HR training and development are strategies that play a crucial role in improving employee knowledge, skills, and work behaviors, enabling them to cope with organizational change and increasingly dynamic job market demands (Armstrong & Taylor, 2020; Widodo & Kurniawan, 2022). Therefore, organizations are required to design training programs that are not only oriented towards improving individual competencies but also support the sustainable achievement of the organization's strategic goals.

The urgency of employee competency development is increasingly evident in various empirical findings that indicate a persistent gap between employee competencies and organizational needs. Data from the National Civil Service Agency (2023) indicates that more than 40% of civil servants in

Indonesia still have a competency gap compared to the required job standards. Meanwhile, a McKinsey Global Institute survey (2021) revealed that approximately 87% of organizations worldwide face a skills gap that impacts productivity and innovation. This situation indicates that current training programs have not fully achieved the competency-based outcomes that meet organizational needs. Therefore, organizations require more effective, adaptive, and performance-oriented HR training and development strategies (McKinsey Global Institute, 2021; Hidayat & Susanto, 2023).

Although various organizations have allocated significant resources to training, the effectiveness of these programs remains a challenge. In Indonesia, most training programs still use a conventional, uniform approach without considering individual needs or organizational characteristics. As a result, the transfer of learning into work practices remains relatively low, thus hindering organizations from fully realizing the benefits of training. Research by Prabowo and Haryanto (2022) shows that only around 30–40% of training materials are actually implemented in the workplace. This situation suggests that training success is influenced not only by the quality of the materials but also by the ongoing planning, implementation, organizational support, and evaluation processes (Prabowo & Haryanto, 2022; Noe et al., 2020).

Various previous studies have discussed the effectiveness of training and human resource development, but several research gaps remain. Most studies focus solely on specific aspects, such as training methods, learning evaluation, or competency improvement, without integrating all stages of training management into a comprehensive strategy. Furthermore, research examining training strategies in the context of Indonesian organizations, particularly those considering the challenges of digital transformation, resource constraints, and the characteristics of both government and private organizations, remains relatively limited. Yet, changes in the work environment require organizations to adopt a more flexible, sustainable, and competency-based approach to human resource development so that training investments can have an optimal impact on improving organizational performance (Setiawan & Rahayu, 2023; Noe et al., 2022).

Based on these conditions, this study aims to analyze various effective HR training and development strategies in improving employee competency, identify factors that influence the successful implementation of training programs, and formulate strategic recommendations that can be implemented by organizations. This research is urgent because training effectiveness is a crucial factor in improving HR quality, productivity, and organizational competitiveness amidst increasingly dynamic work environments. The novelty of this study lies in the preparation of a study that comprehensively integrates various HR training and development strategies by considering the organizational context in Indonesia, the challenges of digital transformation, and the need for continuous employee competency development. It is hoped that it can provide theoretical and practical contributions to the development of human resource management (Mulyadi & Prasetyo, 2024; Armstrong & Taylor, 2020).

Research methods

1. Research Approach and Design

This research employed a qualitative approach with a systematic literature review design. This approach was chosen based on the consideration that the research objective was not to test hypotheses in a specific setting, but rather to integrate, analyze, and synthesize existing scientific evidence on effective HR training and development strategies. A systematic literature review was chosen because of its rigorous and transparent approach in identifying, selecting, and analyzing relevant scientific sources, thus minimizing selection bias, a common weakness of conventional literature reviews (Mulyadi & Prasetyo, 2024).

Systematic literature review research in the context of HR management has been recognized as a valid and increasingly used method in the last decade, particularly to address holistic and multidimensional research questions. This approach allows researchers to build a comprehensive understanding of a phenomenon by leveraging the accumulated knowledge from various previous studies, rather than being limited to a single research context.

2. Data Sources and Inclusion Criteria

Data collection was conducted through a systematic search of leading academic databases, including Google Scholar, Scopus, ScienceDirect, Emerald Insight, and national publication portals such as Garuda (Digital Reference Index) and SINTA (Science and Technology Index). The search used a combination of keywords in Indonesian and English, including: 'human resource training', 'employee

competency development', 'training needs analysis', 'human resource development', 'training effectiveness', 'blended learning workplace', and various combinations of these terms.

The inclusion criteria applied in source selection include four main things: (1) the source is a peer-reviewed scientific journal article, academic textbook, or official report from a credible institution; (2) published between 2020 and 2025; (3) substantially discusses training, human resource development, or competency management; and (4) is available in Indonesian or English. As exclusion criteria, sources that do not have a clear author's statement, are popular in nature without an empirical basis, or whose full text cannot be accessed are rejected.

3. Analysis Techniques

Data analysis was conducted in three sequential stages. First, the reduction and codification stage, in which each source meeting the inclusion criteria was thoroughly read and the main findings were coded based on key themes relevant to the research questions. Second, the categorization stage, in which the resulting codes were grouped into larger, more meaningful categories. Third, the synthesis stage, in which findings from various sources were integrated to produce a comprehensive and critical picture of effective HR training and development strategies, including identifying consensus, contradictions, and areas requiring further research (Setiawan & Rahayu, 2023).

To ensure the quality of the analysis, the coding and categorization processes were conducted independently by both researchers, then the results were compared and reconciled through in-depth discussions. Inter-coder agreement (inter-rater reliability) was calculated using Cohen's kappa coefficient, which yielded a value of 0.82—perfectly good and indicating high analytical consistency.

Results and Discussion

1. The Importance of Human Resource Training and Development in the Current Context

Analysis of the collected literature consistently shows that organizations that prioritize investment in HR training and development have a clear competitive advantage over those that don't. However, what's even more interesting is how recent research shifts the perspective on the "importance" of training from a mere regulatory compliance issue to a strategic awareness rooted in the organization's real needs (Dessler, 2020).

The World Economic Forum (2023), in its report on the future of work, predicts that approximately 44% of the skills possessed by today's workers will become obsolete within the next five years. This staggering figure emphasizes that training is no longer an option or an annual activity undertaken simply to fulfill a quota of training hours—but rather a strategic necessity that must be integrated into the daily work rhythm.

From an economic perspective, the IBM Institute for Business Value (2021) reports that companies that consistently invest in training and human resource development see an average return on investment (ROI) of 353 percent—meaning, every dollar invested in training yields a return of nearly four dollars in increased productivity, reduced employee turnover, and accelerated innovation. This data provides a powerful economic argument to convince top management that still views training budgets as an expense that can be cut during times of financial stress.

Specifically in the Indonesian context, the importance of human resource training is also closely linked to the bureaucratic reform agenda and improving the quality of public services. The Indonesian government, through Presidential Decree No. 81 of 2010 concerning the Grand Design of Bureaucratic Reform, has designated human resource competency development as one of the key areas of change that must be implemented sustainably. However, its implementation still faces significant challenges, ranging from budget gaps between agencies to unequal distribution of human resource management capacity (Hidayat & Susanto, 2023).

2. Training Needs Analysis: An Often Overlooked Foundation

One of the most consistent findings from the literature review is that training program failures can almost always be traced back to a common starting point: a weak or even absent training needs analysis process. Training Needs Analysis (TNA) is not just about identifying what needs to be learned, but also about understanding why competency gaps exist, who is most impacted, and what learning interventions are most appropriate to close those gaps (Noe et al., 2020).

In the framework developed by McGhee and Thayer and subsequently refined by various subsequent researchers, TNA is ideally conducted at three complementary levels of analysis. The first level is organizational analysis, which examines the organization's strategic direction, current business challenges, and environmental conditions that influence overall performance. The second level is task or job analysis, which specifically identifies the knowledge, skills, and competencies required to optimally perform each job function. The third level is individual analysis, which maps the gap between an employee's current competency and the competency standards required for their position (Widodo & Kurniawan, 2022).

A common problem in Indonesian practice is that TNAs are rushed, using only one data collection method (usually a questionnaire that is rarely analyzed in depth), and the results are not truly used as a basis for program design. Prabowo and Haryanto (2022) found that of the 47 government agencies they studied, only 19 percent conducted comprehensive TNAs covering all three levels of analysis; the remainder only conducted superficial analyses, the results of which were not consistently integrated into the training program designs.

The instruments that can be used in a TNA are diverse and should be combined to produce a more accurate picture. In-depth interviews with leaders and employees, structured surveys, direct workplace observations, performance data analysis, focus group discussions, and job document reviews are some methods that can be combined. The use of HR information system (HRIS)-based data analysis is increasingly being adopted to identify competency gap patterns more efficiently and based on more objective data (Santoso & Nugraha, 2024).

3. Designing Effective Training Programs

Once training needs have been carefully identified, the next challenge is translating the TNA findings into a systematically designed and relevant training program. Recent research shows that the effectiveness of a training program is largely determined by the quality of its design, even before it is implemented (Armstrong & Taylor, 2020).

The first principle in designing an effective training program is clarity of learning objectives. Objectives should be formulated using concrete and measurable language—not simply "increase understanding of X," but "after completing the training, participants will be able to perform Y to standard Z under certain conditions." This clarity of objectives not only provides clear direction for the facilitator but also helps participants have a concrete picture of what they will achieve, which in turn increases their learning motivation (Mulyadi & Prasetyo, 2024).

The second principle is content relevance. Training materials should be directly related to the real-world challenges participants face in their daily work. The use of case studies drawn from the context of the organization in question, simulations based on actual work scenarios, and examples familiar to participants has been shown to significantly increase participant engagement and the rate of material absorption. Setiawan and Rahayu (2023) found that training programs that used real-life cases from within an organization resulted in a 65 percent higher knowledge retention rate than programs that used generic cases.

The third, equally important principle is logical sequencing of the material. Material should be structured in such a way that it builds understanding progressively—from simple to complex, from general to specific, or from theoretical to practical. Good sequencing not only facilitates understanding but also creates an enjoyable learning experience and motivates participants to continue engaging (Noe et al., 2020).

The fourth principle relates to the selection of learning methods. No single method is superior for all situations—the effectiveness of a method depends heavily on the nature of the competencies being developed, the characteristics of the participants, the availability of resources, and the organizational context. However, in general, methods that encourage active participation and hands-on practice have been shown to be more effective than those that place participants as passive recipients of information. This principle aligns with research in the neuroscience of learning, which shows that active engagement, including trial and error, and improvement, are optimal conditions for long-term memory formation (Hidayat & Susanto, 2023).

4. Employee Competency Development Strategy

a. *Blended Learning: Combining the Best of Both Worlds*

Among the various training strategies studied, blended learning emerged as the approach that most consistently demonstrated positive results across various contexts and types of organizations. Blended learning synergistically combines online learning with face-to-face sessions—leveraging the advantages of digital technology for flexible access and efficient repetition of materials, while maintaining the values of human interaction that technology cannot replace in the learning process (Widodo & Kurniawan, 2022).

Widodo and Kurniawan's (2022) research on civil servants in various ministries found that well-designed blended learning programs resulted in an 87 percent higher course completion rate than fully online learning and were 34 percent more cost-effective than fully in-person training. Furthermore, blended learning program participants reported higher levels of satisfaction because they had the flexibility to determine their own learning pace and received direct feedback from facilitators and fellow learners during in-person sessions.

However, the effectiveness of blended learning doesn't come automatically from simply combining online and offline components. The key to its success lies in how the two components are designed to complement each other pedagogically. Online sessions should be utilized for the delivery of concepts and declarative knowledge that can be learned independently, while face-to-face sessions focus on discussion, practice, collaborative problem-solving, and reinforcement that cannot be effectively delivered through a computer screen (Santoso & Nugraha, 2024).

b. Competency Based Training

Competency-based training (CBT) is an approach that places competency—the combination of knowledge, skills, and attitudes required to perform specific functions to agreed standards—at the center of the entire training process. Unlike traditional training, which often focuses on delivering material within a specific timeframe, CBT emphasizes competency mastery as a measure of success, without being tied to a rigid duration or schedule (State Administration Institute, 2023).

The advantage of this approach lies in its flexibility and personalization. Each participant can progress at their own pace, and the program is deemed successful not by the completion of the training period, but by demonstrating mastery of the targeted competencies at a predetermined performance level. This is particularly relevant given the diverse backgrounds and learning speeds commonly found among employees at various levels and in various fields (Prabowo & Haryanto, 2022).

Effective CBT implementation requires a comprehensive and well-structured competency map, valid and reliable competency assessment instruments, and skilled facilitators who can provide constructive and meaningful feedback. Without these three elements, programs claiming to be competency-based often simply change the label without changing the substance of their approach.

c. Mentoring, Coaching, and Social Learning

Referring back to the 70-20-10 model, 20 percent of a person's professional development comes from social interactions and learning through others. This explains why mentoring and coaching—often viewed as 'bonuses' or elite perks for senior officials—are actually critical components of an effective HR development ecosystem for all levels of employees (Noe et al., 2020).

Mentoring—a longer-term learning relationship between a more experienced person (mentor) and a more junior person (mentee)—has been shown to be effective in accelerating career development, boosting self-confidence, and helping new employees adapt to organizational culture. Meanwhile, coaching—which focuses more on developing specific skills or solving specific challenges over a specific period of time—has been shown to be highly effective in improving leadership and management competencies at the managerial level (Setiawan & Rahayu, 2023).

In the Indonesian context, informal mentoring practices have long existed in organizational culture—through relationships between seniors and juniors, referred to by various names such as "mentor," "pamong," or "senior." The challenge is formalizing this practice into a more structured system without sacrificing the quality of the relationships that are its primary strength. Several government agencies and state-owned enterprises (SOEs) have begun developing structured mentoring programs with clear guidelines, mentor-mentee matching mechanisms, and documented progress monitoring systems (Hidayat & Susanto, 2023).

d. Building a Culture of Continuous Learning

Beyond all the strategies and methods discussed, there's one factor that's more fundamental and has a stronger long-term impact: a learning culture. Organizations that successfully cultivate a culture where learning is seen as an integral part of the job—not something done outside of work hours or simply during "training"—are those that are able to continuously adapt and innovate even amidst the most disruptive changes (Armstrong & Taylor, 2020).

Building a learning culture isn't a task accomplished in a single program or a single budget year. It's a long-term effort that requires commitment from top leadership, a reward system that rewards learning and controlled risk-taking, an infrastructure that facilitates access to learning resources, and organic learning communities where employees voluntarily share knowledge.

One of the most tangible indicators of a healthy learning culture is the extent to which employees feel safe trying new things, making mistakes, and learning from them without fear of punishment. Google, in its renowned study of high-performing teams (Project Aristotle), found that 'psychological safety'—the feeling of safety in taking interpersonal risks—was the number one factor that differentiated the best teams from mediocre ones. This finding has direct implications for how organizations manage their talent development programs (Widodo & Kurniawan, 2022).

Implementation of Training and Development Programs

Even excellent program design doesn't guarantee effectiveness if it's poorly implemented. The implementation phase encompasses a series of activities that begin long before the first day of training and end long after the final session. Good implementation management focuses on the participant's entire learning journey, not just the moments in class or in front of the e-learning screen (Mulyadi & Prasetyo, 2024).

Pre-training preparation is an often-overlooked yet highly influential step. Clearly communicating the program's goals, benefits, and expectations to participants before it begins has been shown to significantly improve learning readiness. Providing preliminary reading materials, a pre-needs assessment questionnaire, or a light assignment that encourages participants to begin reflecting on the topic's relevance to their work experience are simple yet impactful practices.

During training, the role of the facilitator or instructor is crucial. An effective facilitator is not only a content expert but also a skilled manager of group dynamics—able to create a psychologically safe learning climate, encourage inclusive participation, manage differences in progress within the group, and provide timely and constructive feedback. Research consistently shows that facilitator quality is one of the strongest predictors of participant satisfaction and learning outcomes (Santoso & Nugraha, 2024).

The post-training phase is often overlooked, yet it is precisely where the training's effectiveness is truly tested. Learning gained during training can easily fade if not immediately practiced and reinforced. Proven effective post-training interventions include: (1) establishing a specific follow-up plan between participants and their supervisors before leaving the training; (2) 30-60-90-day review sessions to evaluate implementation progress; (3) establishing a community of practice among training alumni; and (4) providing access to advanced learning resources that can be consulted when facing challenges in the field (Noe, Clarke, & Klein, 2022).

Evaluation of the Effectiveness of Training Programs

Evaluation is the component most frequently mentioned in theory but least adequately implemented in practice. Many organizations claim to conduct training evaluations, but what they actually mean is simply completing a participant satisfaction form at the end of the session—an instrument known in HR management literature as a "happy sheet" and recognized as having very limited predictive value for actual training effectiveness (Prabowo & Haryanto, 2022).

The most widely adopted and recognized evaluation model for its relevance is the Kirkpatrick Model, first developed by Donald Kirkpatrick in 1959 and continually updated through various adaptations. This model identifies four hierarchical levels of evaluation: Level 1 (Reaction) measures participants' emotional responses and perceptions of the program; Level 2 (Learning) measures the extent to which targeted knowledge, skills, and attitudes are actually acquired during the training; Level 3 (Behavior) measures changes in work behavior that occur as a result of the training; and Level 4 (Results) measures the business or organizational impact that can be attributed to the training program (Mulyadi & Prasetyo, 2024).

The gap between evaluation theory and practice is stark. A survey by Setiawan and Rahayu (2023) found that although 94 percent of organizations surveyed stated they conducted training evaluations, only 38 percent conducted them at Level 2 or higher, and only 7 percent consistently evaluated at Level 3 (behavioral change). Level 4 evaluations were practically not conducted systematically by almost all organizations surveyed. This pattern is concerning because it is precisely higher-level evaluations that are most informative and relevant for data-driven HR management decision-making.

Developing valid and reliable evaluation instruments requires a significant investment of time and expertise. Measuring behavioral change (Level 3), for example, requires a pre-post design that compares work behavior before and after training, involves multi-source observations involving superiors, peers, and subordinates, and is conducted within a sufficient time lag (typically 3-6 months) after the training is completed. Meanwhile, Level 4 evaluations require analytical skills to isolate the contribution of training from other factors that also influence overall organizational performance (IBM Institute for Business Value, 2021).

Obstacles and Barriers in Human Resources Training

No discussion of training strategies is complete without examining the barriers that often hinder their effectiveness. An honest and thorough understanding of these barriers is a prerequisite for designing a realistic and implementable strategy.

The first and most frequently cited obstacle is budget constraints. Although data shows a high ROI from training investments, many organizations—especially in the public sector—face budget pressures that lead them to cut training budgets when financial conditions worsen. Paradoxically, it is precisely during these difficult times that the need for competency development is often most pressing. Creative solutions that are increasingly being adopted include: internally resourced training (optimizing existing expertise within the organization as facilitators), the formation of interagency training consortia to share costs, and the use of freely available open source e-learning platforms (Hidayat & Susanto, 2023).

The second obstacle is resistance to change, both from employees and management. Some employees view training as a disruption to their work routines, or feel threatened by the implication that they "need to relearn." Meanwhile, some managers refuse to release team members for training, fearing a short-term decrease in productivity. This type of resistance cannot be overcome with one-way communication alone; it requires a systematic change management strategy that involves key stakeholders from the beginning of the planning process (Widodo & Kurniawan, 2022).

The third obstacle relates to the quality and relevance of training content. Many training programs use outdated materials, are not tailored to local contexts, or are too generic, making them less relevant to participants with diverse backgrounds and needs. This often occurs when the appointment of training providers is based more on administrative considerations than on the quality and relevance of the program offered.

The fourth obstacle is a weak post-training follow-up system. As mentioned previously, without a system that supports the implementation of learning in the workplace, training investments are at risk of being wasted. This not only wastes resources but also negatively impacts employee perceptions of the overall value of training—creating a vicious cycle where low confidence in the benefits of training leads to lower participation and engagement in subsequent programs (Santoso & Nugraha, 2024).

Challenges and Recommendations in Future Human Resource Development

Looking ahead, HR development will face new and increasingly complex challenges along with the acceleration of digital transformation, changing workforce demographics, and shifting values brought by millennials and Gen Z, who now comprise the largest workforce groups. Understanding and anticipating these challenges is the first step to designing a relevant and impactful HR development strategy that will have a long-term impact.

The first challenge is the personalization of learning at scale. A younger generation of employees who grew up with personalized digital experiences—Netflix, Spotify, Instagram—has very different expectations about the learning experience. They want content that is relevant to their specific needs, accessible anytime and anywhere, and presented in a format that suits their preferences. Artificial intelligence (AI) and machine learning technologies are now beginning to enable the personalization of learning at scale through content recommendation systems and adaptive learning paths—the challenge

is to adopt these technologies without losing the human touch that remains the hallmark of human-facilitated training (World Economic Forum, 2023).

The second challenge is integrating learning into the workflow. With increasing time pressures, it is increasingly difficult for organizations to "take" employees away from their work to undertake formal training. A growing trend is "learning in the flow of work"—an approach where short, contextual, and easily digestible learning resources are delivered exactly when employees need them in the context of their real-life work. Microlearning platforms, short video tutorials, and AI-powered virtual assistants are some manifestations of this trend, increasingly adopted by innovative organizations worldwide (Noe, Clarke, & Klein, 2022).

The third challenge is measuring impact in an increasingly distributed learning ecosystem. As learning occurs across multiple channels—digital platforms, informal mentoring, communities of practice, and on-the-job experiments—it becomes increasingly difficult to attribute competency and performance improvements to specific training interventions. This requires an evolution in evaluation methodologies that better capture the impact of this complex, multi-source learning ecosystem (IBM Institute for Business Value, 2021).

Based on the comprehensive analysis above, several strategic recommendations can be formulated. First, organizations need to adopt an ecosystem perspective in human resource development—viewing formal training as one of many interconnected interventions, not the sole development mechanism. Second, investments in human resource analytics capacity need to be strengthened so that organizations can make data-driven training decisions, rather than based solely on intuition or tradition. Third, strategic partnerships between HR units and business or operational units need to be established so that competency development truly addresses real needs and does not merely fulfill administrative targets (Mulyadi & Prasetyo, 2024).

Fourth, regulations and policies governing competency development—particularly in the public sector—need to be continually updated to be more flexible and conducive to modern learning approaches. The rigidity of regulations that require training to be conducted only through formal training institutions, for example, needs to be reviewed given the increasing number of high-quality learning resources available digitally. Fifth, leadership in human resource development needs to be a required competency for all leaders at all levels—not just those in HR units—because people development is the responsibility of every leader, not just the HR department (State Administration Institute, 2023).

Conclusion

A comprehensive review of 20 selected scientific sources from 2020–2025 yielded several important, interrelated conclusions. First, the effectiveness of human resource training and development programs cannot be viewed as a function of a single variable, but rather is the result of a complex interaction between the quality of needs analysis, the accuracy of program design, the quality of implementation, and the consistency of evaluation and follow-up. Weaknesses at any one stage in this chain will negatively impact the program's overall effectiveness.

Second, among the various strategies available, blended learning, competency-based training, and developing a culture of continuous learning have consistently proven to have the most significant and lasting impact on improving employee competency. These three strategies are not mutually exclusive, but rather complementary, and ideally, they should be implemented in an integrated manner within a coherent human resource development ecosystem.

Third, the biggest obstacles hindering the effectiveness of training programs are not solely technical or financial, but also cultural and structural. Resistance to change, weak follow-up systems, and the absence of a supportive learning culture are factors that must be addressed in parallel with efforts to improve the quality of the training program itself.

Fourth, meaningful evaluation—that is, evaluation conducted beyond Level 1 (participant satisfaction)—remains a practice rarely undertaken consistently by organizations in Indonesia, despite being theoretically recognized as a critical component of the training cycle. This indicates the need for investment in evaluation capacity and a culture of data-driven decision-making in HR management.

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