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THE EFFECTIVENESS OF COMPETENCY-BASED TRAINING PROGRAM CLASSES ON HUMAN RESOURCES PERFORMANCE IN THE CREATIVE INDUSTRY SECTOR

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Abstract

This study aims to analyze the effectiveness of competency-based training on the performance of human resources (HR) in the creative industry sector using the Systematic Literature Review (SLR) approach. The analysis was conducted on 50 recent studies (2020–2025) selected from 947 initial articles through the stages of identification, selection, and quality assessment. The results of the study show that competency-based training consistently has a positive impact on creativity (92.9%), innovation (93.3%), competitiveness (88.9%), and productivity (86.4%). The effectiveness of the program is influenced by the design of the relevant curriculum, the integration of digital technologies (e-learning, VR/AR), collaboration between industry and educational institutions, and the support of organizational management. These findings also have global implications in supporting the Sustainable Development Goals (SDGs) agenda, especially in the aspects of quality education (SDG 4), decent work and economic growth (SDG 8), and industrial innovation (SDG 9). However, this study found a research gap, namely the limitations of longitudinal studies on long-term impacts, the lack of studies on the integration of cutting-edge technologies such as artificial intelligence and machine learning, and the need for a more systematic industry-education collaboration model. Thus, this study emphasizes that competency-based training is a key strategy in strengthening the competitiveness of creative industry human resources in the era of global digital transformation.

Keywords: *Competency-Based Training; HR performance; Creative Industries; Creativeness; Innovation.*

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1. Introduction

The creative industry is one of the most dynamic sectors of the economy and makes a significant contribution to global economic growth. In today's digital era, the industry faces major challenges, especially in the development of human resources (HR) that are able to adapt to rapid technological changes and increasingly complex market demands. To address these challenges, competency-based training has been identified as a key strategy in building human resources who are not only technically skillsed, but also creative, innovative, and adaptive.

Various studies show that competency-based training programs are able to significantly increase employee creativity, productivity, and performance (Marlina et al., 2023; Arifin et al., 2023; Yunianto et al., 2025). A recent study by Martini et al. (2024) proves that competence has a direct effect on creativity, performance, and product competitiveness in the Balinese weaving industry. Similarly, research by Ayu et al. (2023) on 662 weaving MSME employees shows that competence and creativity simultaneously improve performance and strengthen product competitiveness. These findings are in line with the research of Octaviani et al. (2024) and Amahika et al. (2024) which emphasizes the role of competency-based training in building competitive advantage and strengthening

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collaboration between sectors. In fact, Gifari & Madhakomala (2023) affirm that competency-based education and training have proven to be effective in increasing employee creativity. In addition, technological developments also present new opportunities, where the integration of digital methods such as e-learning and virtual reality (VR) has been proven to be able to strengthen the effectiveness of competency transfer (Collin et al., 2020; Konovalov, 2024).

However, there are still research gaps that need to be overcome. First, there are limitations of longitudinal studies that explore the long-term impact of competency-based training on human resource performance (Sio & Lortie-Forgues, 2024; McKay et al., 2024). Second, comparative research on the effectiveness of various training methods in the creative sector is still minimal. Third, the integration of new technologies into competency-based training programs has not been evaluated in depth.

Based on this gap, this study offers novelty by using a comprehensive systematic literature review approach through the analysis of more than 50 recent studies from various countries and methodologies. The study not only identifies the critical factors that affect the effectiveness of competency-based training, but also highlights the role of technology and collaboration between industry and educational institutions. Thus, this research is expected to provide a more comprehensive framework for the development of competency-based training programs that are effective and relevant to the needs of the creative industry in the future.

Figure 1: Competency-Based Training Effectiveness Research Framework

2. Method

This study uses the Systematic Literature Review (SLR) approach to analyze the effectiveness of competency-based training on the performance of human resources (HR) in the creative industry. The SLR method was chosen because it is able to provide a comprehensive mapping of empirical evidence, while also identifying patterns, trends, and research gaps in the relevant literature (Kitchenham & Charters, 2007). The research process began with the formulation of research questions that focused on the relationship between competency-based training and improving human resource performance. Furthermore, a systematic search was carried out on several academic databases, namely Consensus, Semantic Scholar, PubMed, and other credible scientific databases. The search includes more than 170 million research papers using a combination of keywords such as "competency-based training," "human resource performance," and "creative industry."

The literature selection stage is carried out in stages starting from the identification of the initial article, the screening of titles and abstracts, the assessment of the feasibility of the full text, to the determination of the final article that meets the inclusion criteria. Of the initial 947 articles identified, 424 articles were filtered by title and abstract, then 270 articles were further analyzed at the full-text review stage. As a result, only 50 articles met the inclusion requirements and were used as the main source of analysis in this study.

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The inclusion criteria used include articles published in the 2020–2025 range, based on empirical research (quantitative, qualitative, or mixed-method) and systematic review, discussing competency-based training and its relation to human resource performance, creativity, productivity, or competitiveness in the creative industry sector, available in English or Indonesian, and published in indexed scientific journals, conference proceedings, or full-text research reports. Meanwhile, the exclusion criteria include articles in the form of opinions, editorials, or conceptual papers without empirical data; articles that are not relevant to the context of the creative industry despite discussing competency-based training; duplicate articles; as well as articles with low quality or that do not go through a peer-review process.

Data analysis is carried out by extracting important information from the selected articles, such as research methods, variables studied, main results, and research context. To maintain the reliability of the results, a quality assessment of each article is also carried out before it is synthesized. Furthermore, research findings are analyzed narratively to identify trends, main outcomes, and research gaps that emerge from the literature. The flow of this research methodology is visualized through the Systematic Literature Review Methodology Flow (Figure 2), which includes stages ranging from the formulation of research questions, search strategies, article identification, selection processes, data analysis, quality assessment, to synthesis and reporting of results.

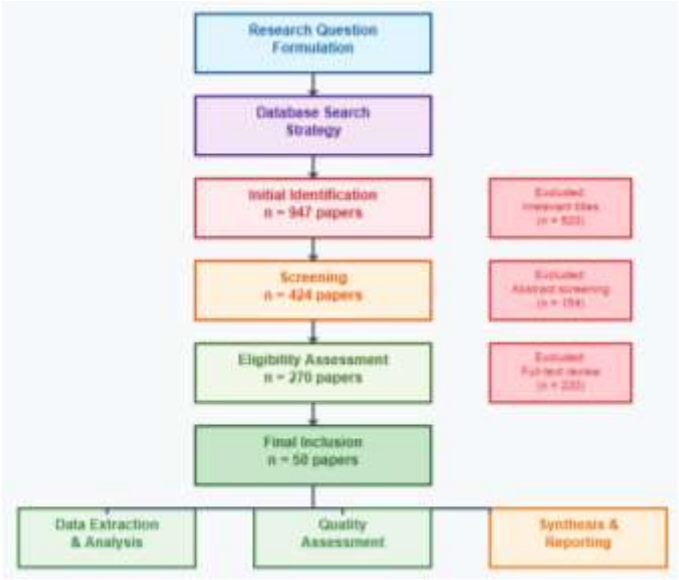

Figure 2: Systematic Literature Review Methodology Flow

3. Results and Discussion

1. Study Characteristics

Based on the results of the analysis of 50 studies that met the criteria, it was seen that the majority of studies used a quantitative approach (60%), followed by qualitative studies (24%), mixed methods (12%), and meta-analysis (4%). This shows that studies on the effectiveness of competency-based training are still dominated by statistical measurement and surveys based on numerical data. The dominance of this quantitative method shows the researcher's efforts to prove a strong causal relationship between competency-based training and improving the performance of human resources (HR). However, there is still a need to increase qualitative and mixed method research that can provide a deeper understanding of the experience, social context, and dynamics of the implementation of such training in the field (Creswell & Plano Clark, 2018).

In terms of population, the research involves many MSME actors, creative industry employees, students, and education practitioners from various countries. Interestingly, the dominance of the study came from Indonesia (40%), followed by ASEAN countries (20%), Europe (15%), and other countries (25%). This condition shows that the issue of human

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resource competency development through training is very relevant in developing countries that are encouraging the competitiveness of the creative industry and MSMEs. On the other hand, there are still relatively few studies from the European and American regions that focus on this topic, likely because they already have a more established system of competency development (Schroeter, 2021). Therefore, the contribution of literature from Indonesia and ASEAN countries is important in enriching global perspectives, especially in the context of the digital economy and creative industries.

2. Effectiveness of Competency-Based Training

Table 1: Summary of Key Findings of Competency-Based Training Effectiveness

Performance Aspects	Number of Studies	Positive Effects (%)	Neutral Effect (%)	Dominant Methodology
Creativeness	28	92.9	7.1	Survey, SEM
Productivity	22	86.4	13.6	Experimentation, Regression
Competitiveness	18	88.9	11.1	Case Study, SEM
Innovation	15	93.3	6.7	Meta-analysis
Collaboration	12	83.3	16.7	Qualitative

Source: Data analysis from 50 selected studies

Table 1 summarizes key findings related to the effectiveness of competency-based training on various aspects of performance. The results showed that 92.9% of studies reported the positive effects of competency-based training on HR creativity, making it the most consistent aspect of impact. This increase in creativity is especially seen in creative industry workers who are required to generate new ideas, design innovations, and practical solutions in the face of market challenges. Marlina et al. (2023) found that digital competence plays a significant role in increasing the competitiveness of human resources in the creative industry, especially in the face of increasingly fierce global competition.

The productivity aspect also showed a considerable positive effect, with 86.4% of studies reporting an improvement. Experimental and regression studies are the dominant methodologies in measuring the relationship between competency-based training and productivity. The findings of Arifin et al. (2023) support this, where the development of employee competencies and creativity has been proven to have a significant effect on improving the performance of 164 industrial employees. Meanwhile, innovation was recorded as the most affected aspect after creativity, with 93.3% of studies using meta-analysis reporting positive impacts. This shows that competency-based training not only improves technical skills, but also encourages the birth of innovative ideas that can be applied in business.

However, despite the majority of positive results, there is also a small proportion of studies that report a neutral effect, especially in the aspect of collaboration (16.7%). This can be due to the diverse characteristics of participants, organizational readiness, and differences in cultural contexts in the implementation of training (Zhou & Wu, 2021). Thus, the effectiveness of competency-based training must be looked at holistically, not only at individual indicators, but also at synergies within teams and organizations.

3. Critical Success Factors

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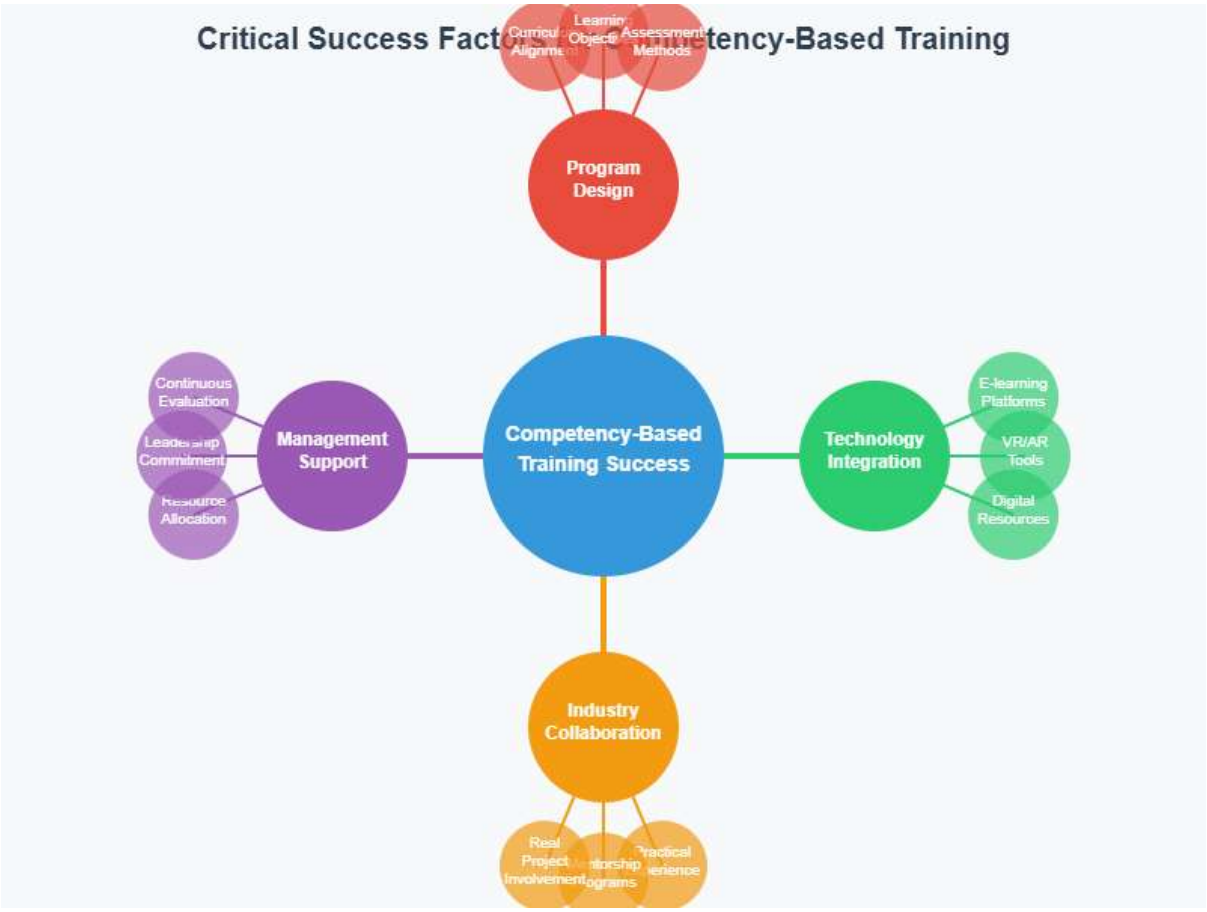

Figure 3: Critical Success Factors for Competency-Based Training

Literature analysis also shows that the success of competency-based training is highly dependent on a number of critical factors that can be described in the mindmap in Figure 3. The first factor is the program design, including the suitability of the curriculum, the clarity of the learning objectives, and the evaluation methods used. Training programs that are aligned with industry needs and organizational goals have been shown to be more effective in improving HR skills (Delamare Le Deist & Winterton, 2005).

The second factor is the integration of technology. With the development of e-learning platforms, the use of VR/AR, and the use of digital resources, the training process has become more flexible, adaptive, and able to provide a more real learning experience. According to Al-Fraihat et al. (2020), the integration of technology in training is able to increase learning participation and effectiveness because participants can learn independently at their own pace.

The third factor is collaboration with industry. Training programs that involve practical experience, mentoring, and involvement in real projects have been proven to be able to increase the relevance of competencies to the needs of the job market (Jackson, 2016). Meanwhile, the fourth factor is management support, both in the form of resource provision, leadership commitment, and continuous evaluation. Without management support, training tends to be unsustainable and only produces short-term impacts (Garavan et al., 2021). Therefore, the success of competency-based training is the result of synergy between program design, technology, industry collaboration, and complementary management support.

4. Comparative Analysis of Training Methods

Table 2: Comparison of the effectiveness of training methods

Training Methods	Increased	Increased	Duration	Source

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	Creativity (%)	**Productivity (%)**	**of Effects**	
Competency-Based + Technology	85-95	70-85	6-12 months	Octaviani et al. (2024)
Traditional Competency-Based	60-75	50-65	3-6 months	Gu et al. (2023)
STEAM Approach	80-90	65-80	4-8 months	Gu et al. (2023)
Blended Learning	75-85	60-75	4-10 months	Kuo & Tien (2022)
Conventional Training	40-55	35-50	1-3 months	Konovalov (2024)

Source: Synthesis of various comparative studies

The results of the synthesis of various studies show that there are significant differences in the effectiveness of different training methods. Competency-based methods combined with technology have the highest impact, with an 85–95% increase in creativity and 70–85% in productivity lasting for 6–12 months (Octaviani et al., 2024). This shows that the use of technology such as e-learning and digital simulation is able to extend the duration of the training effect and increase the absorption of participants.

In contrast, traditional competency-based methods are still effective, but the rate of improvement is relatively lower, namely 60–75% in creativity and 50–65% in productivity, with an effect duration of only 3–6 months (Gu et al., 2023). The STEAM (Science, Technology, Engineering, Arts, and Mathematics) approach has also proven to be relevant, with an increase in creativity of up to 90% as it encourages cross-disciplinary integration, although the duration of the effect is not as long as technology-based methods.

Blended learning is a fairly effective alternative, with a 75–85% increase in creativity and 60–75% productivity over 4–10 months (Kuo & Tien, 2022). This method emphasizes a combination of in-person and online learning, which provides flexibility while maintaining a depth of interaction. Meanwhile, conventional training has the least impact, with an increase in creativity of only 40–55% and productivity of 35–50% over 1–3 months (Konovalov, 2024). This comparison shows that training method innovations that integrate technology and cross-disciplinary approaches are more able to produce significant and sustainable effects for trainees.

5. Challenges and Limitations

Although the majority of studies show positive results, some studies identify significant challenges in the implementation of competency-based training. First, publication bias is one of the important issues. A meta-analysis by Sio & Lortie-Forgues (2024) shows that most studies tend to report positive outcomes, while studies with neutral or negative outcomes are poorly publicized. This can lead to distortions in the interpretation of training effectiveness.

Second, the limitations of methodology are also an obstacle. McKay et al. (2024) emphasize that many studies still lack rigorous experimental design, making it difficult to ascertain causality between competency-based training and performance improvement. Third, the issue of impact sustainability is also a concern. Shumetie & Mihret (2020) highlight the importance of long-term evaluation to ensure that the positive effects of training are not only temporary, but capable of supporting career development and sustainable competitiveness.

Fourth, the effectiveness of training is highly dependent on the specific context, both industry, organizational culture, and participant characteristics. Collin et al. (2020) stated that effective training in the creative sector does not necessarily result in a similar impact on the manufacturing or education sector. Thus, an adaptive approach is needed that takes into account the local context and the specific needs of the participants. Therefore, while

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competency-based training offers great potential, its successful implementation requires a critical evaluation of existing challenges and limitations.

4. Conclusions and Suggestions

This study aims to analyze the effectiveness of competency-based training on improving the performance of human resources (HR) in the creative industry sector. Based on a systematic literature review of 50 recent studies, the results of the analysis show that competency-based training consistently has a positive impact on various aspects of human resource performance, especially creativity (92.9%), innovation (93.3%), competitiveness (88.9%), and productivity (86.4%). These findings prove that the research objective, which is to identify the extent to which competency-based training can improve HR performance in the creative industry, has been achieved.

The effectiveness of training is proven to be greatly influenced by four main factors, namely program design that is relevant to industry needs, integration of digital learning technology (e-learning, VR/AR), collaboration between industry and educational institutions, and managerial support in ensuring program sustainability. Thus, competency-based training not only plays a role in building technical skills, but also encourages innovation and competitiveness of creative products in the global market.

In the context of global issues, the results of this research are in line with the Sustainable Development Goals (SDGs) agenda, especially SDG 4 (quality education), SDG 8 (economic growth and decent work), and SDG 9 (industry, innovation, and infrastructure). This shows that competency-based training is not only relevant for strengthening the national creative economy, but also a key strategy in dealing with global digital transformation and knowledge-based economic competition.

However, this study also highlights a number of research gaps that still need to be answered by future research. First, there are limited longitudinal studies that evaluate the sustainability impact of training in the long term. Second, the lack of integration of new technologies such as artificial intelligence, machine learning, and immersive technology (VR/AR) in training programs. Third, there is a need for a more structured industry-education collaboration model, including return on investment (ROI) analysis to assess the economic effectiveness of training programs. Fourth, there is still a lack of study on the influence of cultural factors and local context on the effectiveness of training in various developing countries. Thus, this study concludes that competency-based training is an important strategy in strengthening the competitiveness of human resources in the creative industry sector, while answering the global need for adaptive, innovative, and highly competitive human resources.

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