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THE MEDIATING ROLE OF SELF-EFFICACY IN TRAINING TRANSFER: A SYSTEMATIC REVIEW

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Abstract:

The mediating role of self-efficacy in training transfer remains a critical yet underexplored area within training and development research. This systematic literature review (SLR) seeks to synthesise current evidence on how self-efficacy influences the application of newly acquired skills in diverse contexts. Addressing the gap in cohesive understanding, the review applied the PRISMA protocol to guide a systematic search across two databases, Scopus and Web of Science, resulting in the selection of 33 primary studies. The findings were categorised into three themes: (1) Self-Efficacy and Motivation Factors in Training Transfer, (2) Training Transfer in Educational and Academic Settings, and (3) Organisational, Leadership, and Workplace Factors in Training Transfer. Studies within the first theme emphasised the strong interplay between self-efficacy and motivation to transfer, directly impacting transfer success. The second theme revealed that self-efficacy enhances the transition of knowledge from training to practical application in academic and clinical training. Meanwhile, the third theme demonstrated how workplace support structures, leadership behaviours, and organisational climates foster self-efficacy, leading to improved transfer outcomes. The review underscores that fostering self-efficacy throughout various phases of the training journey can play a crucial role in enhancing the extent to which acquired skills and knowledge are effectively applied in the workplace. These findings offer valuable theoretical and practical implications for training designers, educators, and organisational leaders aiming to optimise learning transfer in various professional settings.

Keywords:

Training Transfer, Self-Efficacy, Mediating Role, Systematic Literature Review

Introduction

The transfer of training, referring to the extent to which employees are able to effectively apply the knowledge, skills, and attitudes acquired during training to their actual work settings, remains a persistent concern within the field of human resource development. Despite substantial investments in training programmes across the public and private sectors, organisations continue to grapple with the persistent gap between training and its application at work, a long-standing issue often referred to as the "transfer problem" (Baldwin & Ford, 1988; Saks & Burke, 2012). Ensuring that employees actually apply what they have learnt on the job continues to be a major challenge for organisations around the world (Massenberg et al., 2017). One reason for this gap lies in the complex set of factors that influence transfer, as articulated in Baldwin and Ford's (1988) foundational model, which underscores trainee characteristics, training design, and the work environment as key determinants. In recent years, attention has shifted toward psychological constructs that may help explain how and why transfer occurs. Among these, self-efficacy, which refers to how confident someone feels in their ability to carry out a particular task successfully (Bandura, 1997), has emerged as a particularly influential variable. Self-efficacy is linked to learning motivation and plays a critical role in determining whether individuals feel capable of applying their newly gained knowledge and skills in real-world use at work.

A growing number of empirical studies have investigated the mediating role of self-efficacy in training transfer, highlighting its potential as a critical psychological mechanism that links learning conditions to post-training behaviour. For example, Chiaburu and Marinova (2005) demonstrated that pre-training self-efficacy significantly influenced motivation to learn, which subsequently affected the degree of training transfer. Similarly, Na-Nan and Sanamthong (2020) discovered that self-efficacy indirectly influenced job performance through its effects on motivation to transfer and perceived organisational support. While these findings collectively affirm the relevance of self-efficacy as a mediator, the literature remains fragmented in several respects. First, theoretical models employed across studies vary considerably, often lacking integration or clear articulation of how self-efficacy mediates different antecedents of transfer. Second, there is inconsistency in the operationalisation and measurement of self-efficacy, limiting the comparability of results across contexts. Third, most studies have been conducted within the private sector or Western organisational settings, creating a geographical and sectoral bias in the evidence base. As a result, there is insufficient understanding of how self-efficacy functions as a mediating variable in public sector contexts or in developing countries, where structural, cultural, and institutional dynamics may shape training outcomes differently. This systematic literature review aims to synthesise existing research on the mediating role of self-efficacy in the transfer of training, identify prevailing patterns and theoretical gaps, and propose future directions to guide more contextually grounded and methodologically robust investigations.

Literature Review

Empirical Perspectives on the Mediating Role of Self-Efficacy

The role of self-efficacy as a mediating variable in the transfer of training has been widely examined in the literature, with numerous studies underscoring its pivotal influence in facilitating the application of learned skills or competencies at work. Morin and Latham (2000) demonstrated that mental practice combined with goal-setting could significantly enhance supervisors' self-efficacy, subsequently improving communication skills. Similarly, Chiaburu and Marinova (2005) discovered that when individuals believed in their ability to succeed in training and were focused on mastering new skills, they were more motivated even before the training began, ultimately making it more likely they would use those skills later on in their jobs. Na-Nan and Sanamthong (2020) expanded the discussion by illustrating how self-efficacy indirectly improved job performance through perceived workplace support, motivation to transfer, and the actual transfer of training. Collectively, these studies establish self-efficacy as a central psychological mechanism influencing transfer outcomes, yet variations in measurement and contextual factors suggest the need for further nuanced investigations.

Research has also concentrated on the dynamic interactions between training interventions, practice structures, and self-efficacy development. Holladay and Quiñones (2003) emphasised that practice variability enhanced self-efficacy generality, which mediated the relationship between training conditions and far transfer performance. Miirio et al. (2024) further highlighted that performance self-efficacy influenced training design and motivation to transfer among farmer trainees, ultimately affecting transfer outcomes. Chiaburu and Lindsay (2008) differentiated the roles of self-efficacy and instrumentality, concluding that while self-efficacy primarily predicted motivation to learn, training instrumentality emerged as the dominant predictor for motivation to transfer. These findings reveal critical distinctions in how self-efficacy interacts with other motivational constructs, yet more exploration is warranted to determine the consistency of these patterns across diverse populations.

The training environment and social factors have also been identified as crucial moderators of the self-efficacy–transfer relationship. Sookhai and Budworth (2010) demonstrated that transfer climate mediated the link between self-efficacy and transfer success, with supervisor support playing an influential role. Similarly, Arasanmi and Ojo (2019) explored how supervisor support influenced Enterprise Resource Planning (ERP) training transfer through the sequential mediation of computer self-efficacy and transfer motivation. Brown and Morrissey (2004) offered complementary findings by showing that verbal self-guidance techniques enhanced presentation self-efficacy, which correlated positively with improved performance and reduced anxiety. These studies underscore that self-efficacy cannot be fully understood in isolation from the training environment, indicating a substantial research gap in integrating contextual moderators systematically.

Expanding the mediating pathways, several studies have incorporated multiple intervening variables alongside self-efficacy. Iqbal and Dastgeer (2017) identified motivation to transfer as a mediator between self-efficacy, training retention, and transfer of training, reinforcing the complex interplay between cognitive and motivational factors. Trang (2024) reported that self-efficacy fully mediated the relationship between continuous improvement training and actual improvement behaviours, moderated by the transfer climate. Gegenfurtner et al. (2013) provided longitudinal evidence that performance self-efficacy and transfer positively evolved over time, especially in computer-supported environments. These findings collectively point

towards the necessity of adopting longitudinal and multivariate approaches when studying the role of self-efficacy in training transfer.

Organisational culture and leadership styles have also surfaced as essential elements influencing the self-efficacy–transfer link. Simosi (2012) found that employees who believed strongly in their abilities were more likely to apply what they learnt in workplaces that valued achievement and people-focused values, suggesting that self-efficacy amplified the positive influence of a supportive organisational culture. Vignoli et al. (2018) revealed that transformational leadership combined with high trainee self-efficacy enhanced intentions to transfer safety training. Islam and Ahmed (2018) discussed that perceived organisational support influenced transfer indirectly through the mediating roles of self-efficacy and job satisfaction. These studies suggest that leadership and culture-related variables are instrumental in either amplifying or constraining self-efficacy's influence, though inconsistencies in findings across sectors and countries indicate the need for broader cross-cultural validations.

Efforts to develop specific interventions to foster self-efficacy and thereby enhance training transfer have yielded promising but mixed results. Shantz and Latham (2012) employed written self-guidance to enhance interviewing self-efficacy among job seekers, resulting in higher performance ratings. Bergeron et al. (2017) observed that training on sexual abuse prevention effectively boosted knowledge, attitudes, and self-efficacy, with noticeable transfer to professional practice. Dierdorff et al. (2010) proposed that frame-of-reference training outcomes were moderated by learning self-efficacy, especially among participants with avoidant performance goal orientations. Despite these encouraging results, differences in intervention design, timing, and population characteristics highlight methodological limitations that call for more rigorous, standardised evaluation approaches.

Finally, recent investigations have expanded the application of self-efficacy in specialised contexts. Tzaifilkou et al. (2021) showed that ICT-related self-efficacy played a crucial role in trainers' intention to transfer technology skills, with gender and ICT expertise as moderating factors. The findings of Morin and Latham (2000) and Chiaburu and Marinova (2005) continue to echo through recent studies, emphasising that while self-efficacy consistently emerges as a critical variable, its operationalisation varies considerably. These differences point to persistent gaps in standardising self-efficacy constructs and measures, which limit meta-analytic generalisations and theory refinement. Therefore, future research should prioritise longitudinal, cross-contextual studies with consistent measures to better understand the mechanisms by which self-efficacy mediates the training transfer process.

Research Questions

Crafting clear and focused research questions is a crucial part of preparing a systematic literature review, as these questions lay the groundwork for the entire process, shaping how the review is carried out and steering the study in the right direction from the very start (Kitchenham, 2007). Given that this SLR aims to identify and analyse the current state of research in the field, the PICO framework was adopted to assist in developing research questions. PICO is a simple yet effective way to organise research questions in qualitative studies. It was introduced by Lockwood and colleagues (2015) to help researchers focus their questions more clearly and meaningfully. The PICO framework offers a practical way to shape research questions by clearly organising the main elements of the study: Population, Interest,

and Context. This method keeps the research focused and helps ensure that the questions are clear and purposeful, which is especially useful when gathering relevant literature or developing a questionnaire. Guided by this framework, the study addressed the following three research questions:

1. How do self-efficacy and motivation factors influence the transfer of training to the workplace among employees undergoing professional training programmes?
2. How does self-efficacy mediate the transfer of learning from educational and academic training settings to practical and professional environments among students in higher education?
3. How do organisational support, leadership styles, and workplace environments impact the success of training transfer among employees and leaders involved in workplace training?

Materials and Methods

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, introduced by Page et al. (2021), serves as a trusted guideline to help researchers conduct systematic reviews in a way that is clear, thorough, and consistent, making the entire review process more transparent and reliable. It outlines a clear process for finding, reviewing, and choosing studies, while also emphasising how using randomised studies can help reduce bias and improve the reliability of the evidence gathered. This review relied on Scopus and Web of Science (WoS) as the main sources for finding relevant studies, as both are well-known for their wide range of academic content and trusted reputation.

PRISMA organises the review process into four key phases: identification, screening, eligibility, and data extraction. The identification phase entails a structured search to locate relevant literature, which is then followed by a screening process to filter out studies that do not meet the predetermined quality or relevance criteria. During the eligibility phase, the final selection of studies is confirmed based on their alignment with the inclusion criteria, while the data abstraction stage involves systematically extracting and synthesising essential information from each study. This organised approach enhances the rigour and reliability of the review, providing a solid foundation for drawing meaningful conclusions that can inform both future research and practical application.

Identification

The identification stage is a fundamental step in the SLR process. In this study, an extensive search was conducted across two major databases, Scopus and Web of Science, using the keywords "*transfer of training*" and "*self-efficacy*". The search process yielded 204 records from Scopus and 310 records from WoS. Drawing from multiple well-established databases ensured comprehensive coverage of the relevant literature and enhanced the likelihood of capturing critical studies on the research focus. This rigorous identification process laid a strong foundation for the subsequent phases of screening, eligibility assessment, and data extraction.

Table 1: The Search String**Scopus**

TITLE-ABS-KEY (("self-efficacy" OR "self-confidence" OR "self-belief" OR "self-assurance" OR "self-competence" OR "perceived competence") AND ("training transfer" OR "transfer of training" OR "learning transfer" OR "application of learning" OR "skill utilization" OR "knowledge implementation" OR "performance application" OR "practice implementation")) AND (LIMIT-TO (SUBJAREA , "SOC") OR LIMIT-TO (SUBJAREA , "BUS") OR LIMIT-TO (SUBJAREA , "ARTS")) AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2022) OR LIMIT-TO (PUBYEAR , 2023) OR LIMIT-TO (PUBYEAR , 2024) OR LIMIT-TO (PUBYEAR , 2025)) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (SRCTYPE , "j")) AND (LIMIT-TO (LANGUAGE , "English"))

Date of Access: 26 May 2025**WoS**

"self-efficacy" OR "self-confidence" OR "self-belief" OR "self-assurance" OR "self-competence" OR "perceived competence") AND ("training transfer" OR "transfer of training" OR "learning transfer" OR "application of learning" OR "skill utilization" OR "knowledge implementation" OR "performance application" OR "practice implementation") (Topic) and 2025 or 2024 or 2023 or 2022 or 2021 (Publication Years) and Article (Document Types) and Management or Education Educational Research or Business or Health Care Sciences Services or Linguistics or Public Administration or Social Sciences Interdisciplinary or Business Finance or Language Linguistics (Web of Science Categories)

Date of Access: 26 May 2025**Screening**

The screening stage serves as a critical checkpoint in the systematic review process, where each identified study is meticulously evaluated to determine its relevance and alignment with the predefined research questions, ensuring only the most pertinent literature is considered for further analysis. During this phase, studies focusing on the topic of transfer of training were selected for further consideration. After the initial screening, a total of 409 publications were set aside after screening, leaving 105 papers that fit the set criteria and were suitable for further analysis (refer to Table 2). The primary selection criterion was the relevance of the literature, prioritising sources that provided significant insights, such as book series, book reviews, meta-syntheses, meta-analyses, conference proceedings, and chapters not covered in the most recent studies. Only English-language publications from 2021 to 2025 were included in the review period. Additionally, nineteen records were eliminated due to duplication during this process.

Table 2: The Selection Criterion in Searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
Timeline	2021 – 2025	< 2021
Literature type	Journal (Article)	Conference, Book, Review
Publication Stage	Final	In Press

Eligibility

In the third step, the eligibility stage, 86 articles were reviewed against predefined criteria to assess their alignment with the current research objectives. Studies that fell outside the research field, had titles or abstracts not clearly related to the research objectives, or lacked full-text access were excluded. After applying these criteria, 53 articles were excluded, significantly refining the dataset to focus only on the most relevant contributions.

Following this assessment, 33 studies were retained for inclusion in the qualitative analysis. These articles met all inclusion standards and were deemed to offer substantial insights into the themes of transfer of training and self-efficacy. The eligibility process ensured that only studies of sufficient relevance and accessibility informed the final synthesis, strengthening the validity of the review findings.

Data Abstraction and Analysis

A comprehensive analytical approach was employed in this study to examine and merge findings derived from various quantitative and qualitative research designs. The primary objective of this analysis was to identify and classify the core themes and related sub-themes relevant to the research focus. The initial phase involved gathering and organising data from selected sources. A total of 33 publications were carefully reviewed to extract statements or content that aligned with the aims of the review. Each selected study was examined in terms of its methodology and reported findings, particularly concerning the concept of training transfer. The process of theme development was conducted in collaboration with the co-authors, who worked together to ensure that emerging patterns were logically grounded in the collected evidence. During the data analysis process, notes were maintained to document reflections, analytical decisions, and unresolved points. At the final stage, the findings were revisited and compared to ensure consistency and clarity in theme formulation. Any differences in interpretation were resolved through discussion among the authors to reach a mutual understanding.

Quality of Appraisal

Following the methodological guidance outlined by Kitchenham (2007), a structured quality assessment was carried out after the selection of primary studies to evaluate the methodological soundness of each work and to facilitate consistent comparison across studies. This review adopted the quality evaluation framework developed by Abouzahra et al. (2020), which comprises six specific criteria tailored for systematic literature reviews. Each criterion was rated using a three-level scale to ensure a balanced and rigorous assessment process: "Yes" (Y) assigned a score of 1 when the criterion was fully satisfied, "Partly" (P) assigned a score of 0.5 when only partially addressed with some limitations, and "No" (N) assigned a score of 0 when the criterion was not met.

- QA1. Is the purpose of the study clearly stated?
- QA2. Is the interest and the usefulness of the work clearly presented?
- QA3. Is the study methodology clearly established?
- QA4. Are the concepts of the approach clearly defined?
- QA5. Is the work compared and measured with other similar work?
- QA6. Are the limitations of the work clearly mentioned?

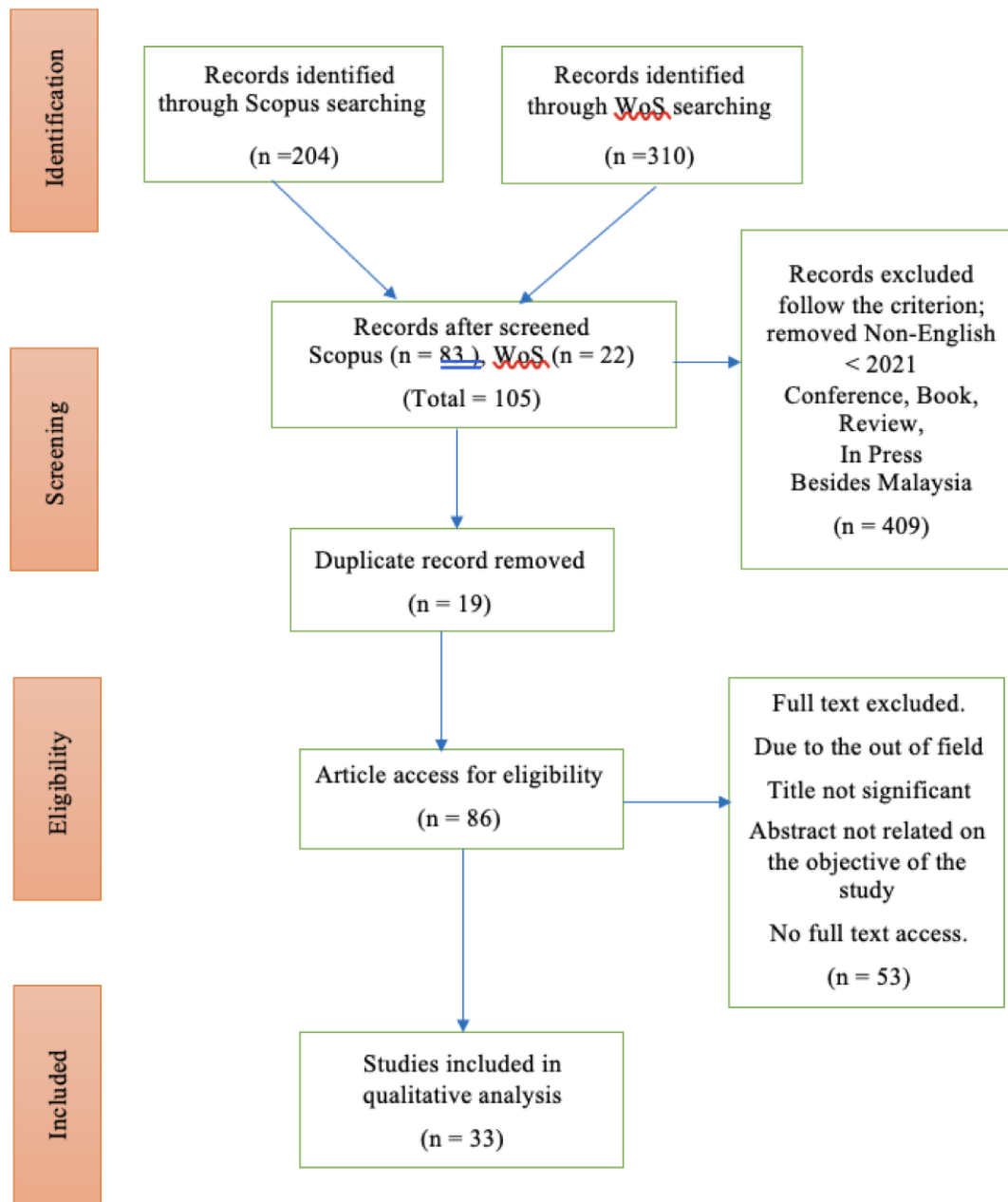


FIGURE 1: Flow diagram of the proposed searching study (Moher et al., 2009)

Result and Finding

Most selected papers exhibit a relatively high standard based on the quality assessment results for PS1 to PS33. Studies such as PS1, PS3, PS5, PS13, PS17, PS22, PS25, PS27, PS28, PS31, and PS33 scored above 75%, with a few even achieving perfect scores (PS27 and PS33 at 100%). These high-scoring studies clearly articulated their purpose, demonstrated the relevance and usefulness of their work, employed a well-established methodology, defined the concepts clearly, compared their work to similar studies, and mentioned limitations. Conversely, papers like PS14, PS18, PS19, PS20, PS24, and PS30 scored at or below 50%, often due to vague methodologies, lack of comparative analysis, and failure to state study

limitations. More than half of the studies surpassed the 70% quality mark, suggesting that the dataset contains predominantly strong and reliable research contributions.

The analysis also reveals some patterns: while most studies are strong in stating their purpose (QA1) and usefulness (QA2), there are consistent weaknesses in QA5 (comparison with similar work) and QA6 (discussion of limitations). Many papers only partially addressed these two aspects or overlooked them altogether, which slightly reduces their comprehensiveness and critical evaluation depth. Future research should emphasise benchmarking findings against existing work and acknowledge study limitations to enhance transparency and rigour. Nevertheless, the overall quality of the selected papers is commendable and provides a solid foundation for further systematic analysis and synthesis. The results indicate that the current literature on training transfer and related constructs is maturing, with increasing attention to methodological soundness and conceptual clarity.

The quality assessment table of the selected studies is shown below:

Table 3: Quality Assessment Table for PS1-PS33

Primary Study	QA1	QA2	QA3	QA4	QA5	QA6	Total Mark	Percentage (%)
PS1	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	P (0.5)	5	83.33%
PS2	Y (1)	Y (1)	Y (1)	P (0.5)	P (0.5)	N (0)	4	66.7%
PS3	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	P (0.5)	5	83.3%
PS4	Y (1)	Y (1)	Y (1)	P (0.5)	N (0)	N (0)	3.5	58.3%
PS5	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	P (0.5)	5	83.3%
PS6	Y (1)	Y (1)	P (0.5)	P (0.5)	P (0.5)	P (0.5)	4	66.7%
PS7	Y (1)	Y (1)	Y (1)	Y (1)	N (0)	P (0.5)	4.5	75%
PS8	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	N (0)	4.5	75%
PS9	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	N (0)	4.5	75%
PS10	Y (1)	Y (1)	P (0.5)	P (0.5)	P (0.5)	N (0)	3.5	58.3%
PS11	Y (1)	Y (1)	Y (1)	P (0.5)	P (0.5)	N (0)	4	66.7%
PS12	Y (1)	Y (1)	P (0.5)	P (0.5)	P (0.5)	N (0)	3.5	58.3%
PS13	Y (1)	Y (1)	Y (1)	Y (1)	Y (1)	N (0)	5	83.3%
PS14	Y (1)	Y (1)	P (0.5)	P (0.5)	N (0)	N (0)	3	50%
PS15	Y (1)	Y (1)	P (0.5)	P (0.5)	P (0.5)	N (0)	3.5	58.3%
PS16	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	N (0)	4.5	75%
PS17	Y (1)	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	5.5	91.7%
PS18	Y (1)	Y (1)	P (0.5)	P (0.5)	N (0)	N (0)	3	50%
PS19	Y (1)	Y (1)	P (0.5)	P (0.5)	N (0)	N (0)	3	50%
PS20	Y (1)	Y (1)	P (0.5)	P (0.5)	N (0)	N (0)	3	50%
PS21	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	N (0)	4.5	75%
PS22	Y (1)	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	5.5	91.7%
PS23	Y (1)	Y (1)	P (0.5)	P (0.5)	P (0.5)	N (0)	3.5	58.3%
PS24	Y (1)	Y (1)	P (0.5)	P (0.5)	N (0)	N (0)	3	50%
PS25	Y (1)	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	5.5	91.7%
PS26	Y (1)	Y (1)	P (0.5)	P (0.5)	P (0.5)	P (0.5)	4	66.7%
PS27	Y (1)	Y (1)	Y (1)	Y (1)	Y (1)	Y (1)	6	100%

PS28	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	P (0.5)	5	83.3%
PS29	Y (1)	Y (1)	P (0.5)	P (0.5)	P (0.5)	N (0)	3.5	58.3%
PS30	Y (1)	Y (1)	P (0.5)	P (0.5)	N (0)	N (0)	3	50%
PS31	Y (1)	Y (1)	Y (1)	Y (1)	Y (1)	P (0.5)	5.5	91.7%
PS32	Y (1)	Y (1)	Y (1)	P (0.5)	P (0.5)	P (0.5)	4.5	75%
PS33	Y (1)	Y (1)	Y (1)	Y (1)	Y (1)	Y (1)	6	100%

Notes

- Y (1): Yes, fully meets the criterion.
- P (0.5): Partly meets the criterion.
- N (0): Does not meet the criterion.

Self-Efficacy and Motivation Factors in Training Transfer

Several studies have emphasised the vital role of self-efficacy in enhancing training transfer outcomes. Arciniega et al. (2021) confirmed that a self-efficacy-oriented training intervention significantly improved sales performance at individual and unit levels, highlighting a multi-level impact of self-efficacy on organisational outcomes. Similarly, Miirio et al. (2024) found that motivation to transfer and training design partially mediated the relationship between performance self-efficacy and training transfer among agricultural trainees, stressing the importance of pre-training strategies to enhance outcomes. Arasanmi and Ojo (2023) also supported this notion, revealing that mastery goal orientation, computer self-efficacy, and transfer motivation explained a significant portion of ERP training transfer, confirming self-efficacy as a critical antecedent. These findings collectively emphasise that strengthening self-efficacy before and during training interventions is crucial to effective learning transfer.

The relationship between intrinsic motivators, work environment, and transfer has been explored in various contexts. Lathabhavan and H. L (2024) demonstrated that self-efficacy and motivation to transfer were significantly linked to the transfer of skills, with work conditions such as autonomy mediating this relationship. Similar patterns emerged in the study by Lowell and Yang (2023), where authentic online mentoring environments enhanced novice online instructors' self-efficacy and transfer skills. Meanwhile, Trang (2024) found that self-efficacy fully mediated the relationship between training and continuous improvement, while a positive training transfer climate further moderated it. Together, these studies highlight that fostering positive internal motivators and an enabling environment significantly improves training transfer, particularly when self-efficacy is deliberately targeted and strengthened.

The impact of contextual factors such as remote work and crises on self-efficacy and training transfer has been further examined. Lathabhavan and Griffiths (2024) revealed that during the COVID-19 pandemic, technology use, managerial, and peer support positively influenced self-efficacy, thereby enhancing training transfer and work engagement while reducing technostress. Similarly, Junça Silva and Pinto (2024) concluded that in extreme environments like the pandemic, self-efficacy, adaptability, and peer support significantly predicted both knowledge transfer and post-training performance. Kuo and Tien (2024) contributed to this area by introducing regret as a moderator, where reflecting on behaviour positively strengthened the motivation to transfer, especially when self-efficacy levels were low. These findings collectively suggest that under challenging contexts, reinforcing self-efficacy through

support mechanisms and emotional regulation strategies becomes even more critical to facilitating effective transfer.

Self-efficacy's mediating role in broader organisational outcomes has also been demonstrated in different domains. Quratulain et al. (2021) highlighted that self-efficacy and instrumentality beliefs strongly predicted training implementation behaviours, particularly when supported by a flexible organisational climate. Phuong and Quynh (2022) also confirmed that self-efficacy partially mediated the relationship between training perception and work engagement, providing empirical evidence from Central Europe. Lowell and Tagare (2023) further demonstrated that authentic learning experiences in virtual reality, though not significantly impacting immediate transfer confidence, prompted metacognitive reflection that enhanced self-efficacy in the long term. Collectively, these studies underline that fostering self-efficacy enhances direct transfer and promotes broader organisational engagement and performance outcomes.

Emerging technologies and innovative interventions have shown promise in improving learners' self-efficacy and transfer capabilities. Kittredge et al. (2025) demonstrated that generative AI-based language learning significantly enhanced learners' self-efficacy for speaking and grammar usage, leading to greater confidence in real-life communication. Meanwhile, Güntner et al. (2025) illustrated that a goal-oriented leadership app designed to encourage microlearning and self-regulation significantly strengthened leaders' self-efficacy and training transfer outcomes. These studies suggest that when learning environments incorporate technology-enabled, authentic, and self-regulated approaches, they can substantially bolster self-efficacy, resulting in improved training transfer and long-term competency development.

Training Transfer in Educational and Academic Settings

The effectiveness of training transfer within educational environments has been influenced by numerous personal, psychological, and contextual factors. Bauer et al. (2023) demonstrated that general mental ability, conscientiousness, and openness/intellect exhibited complex relations with training performance and transfer in culinary education, highlighting the psychological attributes required for effective skill acquisition. Similarly, Fauth and González-Martínez (2022) confirmed that self-efficacy and motivation to innovate were crucial predictors for learning transfer among teachers undergoing ICT training, underlining the role of prior experience and critical reflection. Ha and Vanaphuti (2022) further reinforced that psychological states, particularly self-efficacy, significantly influenced English language training transfer in hospital settings, surpassing the impact of extrinsic factors such as trainer effectiveness. These findings collectively emphasise the central role of intrinsic characteristics like self-efficacy and motivation in enhancing training outcomes within educational contexts.

Research focusing on the clinical and healthcare education sector equally underscores the significance of supportive environments and individual motivation. Chen et al. (2021) found that although a web-based interactive situational teaching method improved ethical reasoning skills among nursing students, clinical performance largely depended on the level of instructor support during internships, impacting self-efficacy more than curriculum design. Gegenfurtner and Testers (2022) employed the theory of planned behaviour and confirmed that transfer attitudes and self-efficacy strongly predicted transfer intentions and actual training transfer

among non-traditional students, demonstrating that behavioural and control beliefs were crucial while normative beliefs were less influential. Meanwhile, Bo et al. (2022) examined English for Academic Purposes (EAP) programmes and discovered that learning transfer and the enhancement of self-efficacy were among the core outcomes perceived by multilingual domestic students, contributing to the formulation of a new framework for EAP course design. Collectively, these studies underline the importance of tailored support structures and the psychological readiness of learners in achieving successful learning transfer.

A closer examination of relational and experiential factors revealed additional nuances in the transfer process. Hu et al. (2021) investigated teacher-student dynamics and identified that learning motivation, self-efficacy, and learning transfer served both mediating and moderating roles in enhancing self-regulated learning, thus establishing the necessity of intrinsic motivational climates fostered by perceived pedagogical innovation. Roig-Ester et al. (2024) identified previous work experience as a crucial element influencing the successful transfer of university-acquired knowledge among new nursing professionals, showing that those with higher academic preparation and self-competence achieved better transfer outcomes. Testers et al. (2024) confirmed through a longitudinal study that performance self-efficacy significantly predicted both the pre-training intention to transfer and post-training transfer behaviour among adult learners of information literacy competencies, affirming the role of self-efficacy over time in diverse academic and work contexts. These studies consistently point to the interplay between prior experience, relational dynamics, and motivational factors in training transfer.

Technological integration and pedagogical design have also demonstrated substantial effects on self-efficacy and transfer. Buttussi and Chittaro (2024) explored non-immersive virtual reality environments and found that embedding test questions within educational mobile VR applications did not disrupt learner engagement but rather increased presence, self-efficacy, and learning transfer among participants, especially when active performance was combined. Similarly, Tzafilkou et al. (2023) illustrated that in ICT training for teachers, perceived usefulness and satisfaction significantly influenced self-efficacy, which subsequently enhanced motivation to learn and transfer knowledge to practice. These studies suggest that well-designed technological interventions, when aligned with learner needs and motivations, can effectively bolster self-efficacy and facilitate skill transfer in educational settings.

Organisational, Leadership, and Workplace Factors in Training Transfer

Organisational factors play a decisive role in the success of training transfer, particularly in leadership development and workforce enhancement. Tafvelin et al. (2021) emphasised that leaders' perceptions of training utility and their learning experiences significantly impacted the transfer of leadership skills, linking it to transformational leadership behaviours and collective self-efficacy among subordinates. This finding aligned with Lee and Kim (2024), who discovered that the service quality of collaborative learning programmes enhanced learning transfer and self-efficacy among high-tech engineers, ultimately contributing to innovative work behaviour within organisations. Similarly, Yamani (2024) highlighted the critical need for strong interpersonal communication and digital skills among independent direct distributors in Morocco, emphasising that successful brand message transfer depended largely on personal motivation and self-efficacy levels. Together, these studies underline that organisational efforts must integrate participant-centred learning designs and cultivate environments that encourage self-belief for optimal training transfer.

The significance of organisational support structures and environmental conditions in promoting training transfer has been extensively discussed. Yaghi and Bates (2023) validated the Learning Transfer System Inventory in an Arabic higher education context and found that factors such as supervisor support, motivation to transfer, peer support, readiness to transfer, and self-efficacy were vital to leadership training outcomes. Supporting this, Suhaimy et al. (2023) identified that in apprenticeship programmes, trainee characteristics like cognitive ability, self-efficacy, and motivation, along with well-structured training programmes and supportive work environments, led to successful training transfer. Kim and Lee (2023) further reinforced that in public sector training, self-efficacy and individual motivation were necessary preconditions for promoting expertise sharing, indicating that HRD programmes must account for personal variations to ensure knowledge dissemination within organisations. These findings collectively highlight that training environments must be strategically crafted to align with individual motivations and support systems to facilitate the effective application of learned skills.

The role of psychological and behavioural mechanisms in enhancing training transfer also received considerable attention. Nielsen et al. (2023) identified that the transfer of non-technical safety skills, such as communication and decision-making among construction workers, was strongly influenced by safety self-efficacy, both immediately and in the longer term. This finding aligns with Sahoo and Mishra (2022), who demonstrated that in the Indian power sector, organisational support in the form of supervisory encouragement, peer assistance, and opportunities to apply training positively influenced motivation to transfer soft skills, with self-efficacy and the desire to learn acting as mediators. Furthermore, Kim and Lee (2023) emphasised that public sector HRD programmes must recognise psychological states like self-efficacy to boost transfer motivation and practical application of training content. Together, these insights demonstrate that beyond structural enablers, the psychological empowerment of employees plays a pivotal role in sustaining training transfer outcomes in diverse organisational settings.

Discussion

This systematic literature review examined 33 studies to explore how self-efficacy mediates training transfer, leading to the identification of three overarching themes: Self-Efficacy and Motivation Factors in Training Transfer, Training Transfer in Educational and Academic Settings, and Organisational, Leadership, and Workplace Factors in Training Transfer. Across the studies, a consistent pattern emerged, emphasising that self-efficacy is not merely a secondary influence but a central mechanism driving training transfer outcomes. Studies such as those by Arciniega et al. (2021) and Miirio et al. (2024) highlighted the pivotal role of self-efficacy in enhancing motivation to transfer, while organisational factors such as supervisor support and collaborative learning environments, as shown in the findings of Yaghi and Bates (2023) and Lee and Kim (2024), reinforced its development. Furthermore, educational settings revealed that learners' psychological readiness, including their self-efficacy levels, substantially influenced the practical application of skills, as noted by Chen et al. (2021) and Gegenfurtner and Testers (2022). The triangulation of these findings indicates that interventions targeting self-efficacy at various stages: pre-training, during training, and post-training, can significantly optimise the effectiveness of training initiatives across sectors.

The selection of the three themes was grounded in the distinct but interconnected contexts through which self-efficacy influences training transfer. The first theme, Self-Efficacy and Motivation Factors, was chosen based on strong empirical evidence that intrinsic factors such as self-belief and motivation are precursors to successful transfer (Arasanmi & Ojo, 2023; Lowell & Yang, 2023; Trang, 2024). Studies consistently showed that participants with higher self-efficacy are more resilient, adaptable, and willing to apply learned skills, particularly when motivational strategies accompany training. The second theme, Training Transfer in Educational and Academic Settings, reflected the growing attention to how learners transition from theoretical knowledge to practical application, where variables like supportive mentorship and reflective learning environments amplify self-efficacy and thus foster transfer (Bauer et al., 2023; Bo et al., 2022; Roig-Ester et al., 2024). The third theme, Organisational, Leadership, and Workplace Factors, emerged from studies that emphasised the external supports, such as leadership behaviours, workplace culture, and peer dynamics, that shape and sustain trainees' self-efficacy over time (Nielsen et al., 2023; Sahoo and Mishra, 2022; Tafvelin et al., 2021). These thematic categorisations collectively capture individual and environmental dimensions, comprehensively interpreting how training transfer mechanisms operate in real-world contexts.

The practical implications of these findings are substantial for training designers, educators, and organisational leaders. Organisations aiming to maximise training outcomes must intentionally incorporate strategies that build and reinforce self-efficacy throughout the training process. Practical interventions could include embedding goal-setting exercises, encouraging mastery experiences, providing constructive feedback, and facilitating early skill application opportunities. Leadership development programmes must focus on content delivery and nurture transformational leadership behaviours that inspire self-belief among teams (Lee & Kim, 2024; Tafvelin et al., 2021). In educational settings, instructors should integrate reflective activities, mentorship models, and technology-enhanced learning environments to elevate students' self-efficacy, thus promoting sustainable transfer of academic knowledge into professional practice (Buttussi & Chittaro, 2024; Chen et al., 2021). Future research should prioritise examining the long-term sustainability of self-efficacy-driven interventions and investigate how emerging technologies such as virtual reality and AI-driven learning environments impact self-efficacy development and transfer outcomes (Kittredge et al., 2025; Lowell & Tagare, 2023). Despite the breadth of current research, notable limitations include the predominance of cross-sectional designs and context-specific findings that may limit generalisability across industries and cultural settings. Consequently, longitudinal studies across diverse environments are necessary to unpack the dynamic evolution of self-efficacy and its mediating role over time. Moreover, standardising the operational definitions and measurement tools for self-efficacy would enhance the comparability and meta-analytic synthesis of findings. Overall, this SLR contributes to the broader understanding that cultivating self-efficacy is not an ancillary aspect of training transfer but a strategic priority that warrants deliberate attention in both academic and professional development efforts.

Conclusion

The present study set out to systematically examine the mediating role of self-efficacy in training transfer by synthesising findings from 33 primary studies identified through a rigorous search strategy in Scopus and Web of Science. Guided by the PRISMA protocol, the review aimed to explore how self-efficacy influences the successful application of learned skills across

professional, educational, and organisational contexts. Three major themes were developed from the synthesis: Self-Efficacy and Motivation Factors in Training Transfer, Training Transfer in Educational and Academic Settings, and Organisational, Leadership, and Workplace Factors in Training Transfer. Across these themes, a consistent pattern emerged: self-efficacy serves not only as a psychological catalyst but also as a bridge linking motivation, learning environments, leadership behaviours, and organisational climate to training outcomes. The analysis revealed that higher levels of self-efficacy consistently enhanced motivation to apply skills, improved resilience in facing challenges, and facilitated better integration of learned competencies into practical environments. Moreover, findings highlighted that interventions targeting self-efficacy development before, during, and after training are more likely to achieve sustainable transfer outcomes. These results contribute significantly to the growing body of knowledge by offering an integrated understanding of self-efficacy's mediating mechanisms and providing actionable insights for training designers, educators, and organisational leaders seeking to optimise learning transfer.

Beyond summarising key findings, this study offers several implications for both practice and future research. First, the results underscore the need for training programmes to incorporate deliberate self-efficacy enhancement strategies, such as mastery experiences, goal setting, positive feedback, and support structures within the workplace and learning institutions. Organisations and educational providers are encouraged to foster cultures that support individual confidence, autonomy, and application of new skills. Second, the review identified gaps in longitudinal studies and variations in measuring self-efficacy across contexts, suggesting that future research should standardise instruments and extend investigation periods to capture the dynamic evolution of self-efficacy over time. There is also a call for more cross-cultural validations to ensure that findings are generalisable across diverse settings. Although the current review systematically covered high-quality studies, limitations remain, particularly in relation to potential publication bias and the exclusion of non-English literature. Nonetheless, the synthesis provides a solid foundation for advancing theoretical models of training transfer and for informing the design of more effective, evidence-based interventions in professional and academic training environments. The significance of strengthening self-efficacy as a mediating force in training transfer cannot be overstated, positioning it as a critical priority for future research and practical applications aimed at maximising the return on training investments.

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