



From Self-Efficacy Gains to Transfer Intention: Unpacking Learning and Perceived Usefulness in Military Leadership Training.

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From Self-Efficacy Gains to Transfer Intention: Unpacking Learning and Perceived Usefulness in Military Leadership Training.

Purpose: This study examined the effectiveness of a military leadership program. Additionally, it investigated the role of cognitive evaluations and affective reactions to training in promoting training transfer intention.

Design/methodology/approach: A pre–post design was adopted, involving a sample of Italian cadets participating in a high-fidelity leadership training program. Specifically, leadership self-efficacy was assessed through a self-report questionnaire at two time points (pre- and post-training). Post-training measures assessed perceived learning, perceived usefulness, satisfaction, and transfer intention. A serial mediation model was used to analyze the role of perceived learning, perceived usefulness, and satisfaction in the relationships between self-efficacy gains and training transfer intention.

Findings: The findings indicated a significant increase in leadership self-efficacy following the training. Furthermore, perceived learning and perceived usefulness serially mediated the relationship between self-efficacy gains and the training transfer intention.

Originality/value: This study contributes to the training literature in military organizations, suggesting that confidence in one’s leadership skills alone may be insufficient to foster transfer intention. In contrast, awareness of learning and operational utility also emerged as essential for training and transfer.

Keywords: training transfer; leadership development; self-efficacy; training design.

Introduction

Developing effective leaders is widely recognized as a strategic priority for organizational success because they play a central role in shaping decision-making processes and leveraging human capital as a strategic resource for competitive advantage (Day *et al.*, 2021). Moreover, leadership has been associated with greater adaptability, innovation, and constructive conflict management, thereby strengthening collective performance—particularly in entrepreneurial or rapidly changing environments (Benmira & Agboola, 2021; Yin *et al.*, 2020).

These benefits are especially salient in the military sector, which represents a prototypical high-reliability organization (HRO) due to its high-risk operations (Abbe, 2021). In such settings, personnel must manage complex tasks, make rapid decisions under extreme pressure, and coordinate effectively to sustain operational readiness and safety (Weick & Sutcliffe, 2015). More precisely, military leaders routinely confront operational challenges and consequential trade-offs (Wong *et al.*, 2003) that require balancing competing priorities in real time. Accordingly, leadership development must be strategically tailored to the specific operational context (Day *et al.*, 2014; Siew & Koh, 2023) to be useful in preventing errors, which, within these environments, can result in catastrophic outcomes (Gemmano *et al.*, 2024).

While leadership programs are widely deployed in HROs (Cantu *et al.*, 2020), including military ones (Kirchner & Akdere, 2017), it must be noted that gains in learning do not automatically transfer to the workplace, indicating that adoption on the job is a further step beyond learning itself (de Jong *et al.*, 2026; Grossman & Salas, 2011). More precisely, designing a leadership development program without a clearer understanding of the factors that may support the on-the-job adoption of learned skills can translate it into a theoretical exercise with limited impact on operational effectiveness. In this regard, despite the availability of general models of training transfer, relatively few empirical studies have examined how specific cognitive evaluations (e.g., perceived learning and utility) and affective reactions (e.g., course satisfaction) contribute to training transfer in military organizations (Dirani, 2017).

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To address this gap, the present study aimed to evaluate the effectiveness of a leadership training program delivered to military cadets and to examine the specific psychological mechanisms through which training designed to promote leadership self-efficacy can translate into intentions to apply acquired skills on the job. By clarifying the role of perceived usefulness of training and training satisfaction in forming transfer intention, this study may help military organizations design training interventions that lead to changes in military leaders' professional behaviors.

Theoretical background and state of research

Workplace training represents a multifaceted psychological and social experience shaped by individual and contextual dynamics (Holton III *et al.*, 2000). This interplay determines whether and to what degree acquired competencies are effectively adopted into the work context, a process commonly referred to as training transfer (Blume *et al.*, 2010). More specifically, Baldwin and Ford (1988), in their seminal work, categorize the determinants of transfer into three domains — training design, trainee characteristics, and the work environment — and posit that these inputs influence training outputs (e.g., learning), which, in turn, shape the maintenance of newly acquired skills over time. Within the leadership development domain, these dynamics are even more complex since leadership development is conceptualized as a lifelong, longitudinal process rather than a discrete instructional event (Day *et al.*, 2014). Additionally, within the specific constraints of military environments, the considerable temporal lag between the training event and operational deployment may frequently preclude immediate assessment of behavioral change (Fletcher & Chatelier, 2000). Consequently, transfer intention emerges as a robust proximal indicator, providing a critical early measure of the capacity of an intervention to catalyze future on-the-job application (Sahoo & Mishra, 2022; Schettino & Capone, 2025).

Training design features promoting the transfer process

Among the antecedents of training transfer, training design deserves particular attention because it represents the most readily actionable organizational lever (Seeg *et al.*, 2022). Additionally, as documented by Diamantidis and Chatzoglou (2014), training program design tends to exert a stronger effect on post-training job performance than other predictors, such as the work environment and individual characteristics. A notable illustration of the impact of training design on training transfer among military personnel is provided by the Vietnam War, when the U.S. Navy introduced a realistic air-combat engagement simulation (Sherwood, 2004). Conversely, the U.S. Air Force largely maintained a more conventional training approach. Navy pilots — despite flying the same aircraft as Air Force pilots — achieved air-combat performance approximately six times higher, as reflected in a markedly more favorable kill-to-loss ratio (Gorman, 1990).

In accordance with this reasoning, transfer-oriented designs should emphasize clear learning objectives, explicit links between course content and job tasks, and structured opportunities for practice, feedback, and reflection (Holton III *et al.*, 2000). These features help trainees to translate abstract concepts into concrete behavioral repertoires applicable in the workplace, thereby enhancing their perceptions of feasibility and job relevance (Pham, 2021). This aligns with the “train as you fight” principle, which holds that aligning training scenarios with operational realities is crucial for reducing the gap between classroom instruction and field application in military settings (Rietjens *et al.*, 2013).

In this respect, perceived content validity — namely, the extent to which trainees perceive training content as accurately reflecting job requirements (Pham, 2021) — has been associated with more positive trainee reactions, higher performance self-efficacy, and training transfer behavior (Awais Bhatti *et al.*, 2014; Kirwan & Birchall, 2006). This construct consists of a core level of evaluation for training courses (Kirkpatrick, 2015) closely related to perceived usefulness or operational utility, as when trainees view the material as relevant and aligned with the demands of their role, they are more likely to regard the course as useful (Salas & Cannon-Bowers, 2001; Tafvelin

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3 103 *et al.*, 2021), it is worth noting that this utility-oriented appraisal is not merely the global “positive
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5 104 reaction” to training or enjoyment or satisfaction with the training experience, rather it represents a
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8 105 distinct cognitive judgment (Park *et al.*, 2022). The literature distinguishes utility from affective
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10 106 reactions, demonstrating that utility reactions better predict distal outcomes such as transfer and
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12 107 performance, whereas affective reactions show weaker, inconsistent associations (Ruona *et al.*, 2002;
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15 108 Kirkpatrick, 2015).

16
17 109 Perceived utility drives transfer through dual psychological pathways. First, it acts as a
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19 110 motivational reinforcement by aligning operational reality and, in turn, enhancing self-efficacy and
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22 111 performance expectancies (Awais Bhatti *et al.*, 2014; Vroom *et al.*, 2015). Second, it affects attitude
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24 112 formation, as instrumental value triggers positive cognitive evaluations (Davis *et al.*, 1989).
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26 113 Consequently, greater utility may lead trainees not only to feel capable of transferring these skills but
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29 114 also to develop a specific desire to do so, as they appraise the implementation of these skills as a
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31 115 career-enhancing strategy (Hamzah *et al.*, 2025; Schettino *et al.*, 2024).

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33 116 Perceived utility has emerged as a key determinant of training transfer among military
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35 117 personnel. As theorized by McCraine (2006), this appraisal enhances the “survival value” of a training
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38 118 program, thereby increasing trainee motivation to retain and apply acquired competencies. In support
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40 119 of such a thesis, Crow (2007) identified operational utility as a significant predictor of transfer within
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42 120 combat skills programs. Furthermore, the instructional format appears to influence this perception,
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45 121 with face-to-face military training yielding higher perceived content validity and utility than blended
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47 122 learning formats (Giovengo, 2014). Similarly, Tompkins (2025) highlighted through a qualitative
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49 123 approach that for military learners (specifically coast guard officers), the operational utility of training
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52 124 was the linchpin connecting classroom theory to operational duties, showing that transfer was
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54 125 maximized when instructional methods explicitly demonstrate the practical applicability of skills to
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56 126 the learner’s specific career path, thereby bridging the gap between abstract concepts and daily tasks.

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60 128 *Enhancing leadership skills through training*

Literature on leadership development conceptualizes it as a dynamic, complex process of identity construction and social capital accumulation (Lord & Hall, 2005). Specifically, a critical distinction has emerged between leader development and leadership development. The former involves enhancing individual human capital by developing intrapersonal competencies—such as self-awareness, self-regulation, and self-efficacy—whereas the latter focuses on building social capital through the relational processes required for collective adaptation and mission success (Day *et al.*, 2014, 2021; Steiro & Torgersen, 2020). This perspective is particularly salient within the military context, where becoming a leader requires a qualitative transformation of professional identity, involving the internalization of the leader role and the empowerment of subordinates (DeRue & Ashford, 2010; Siew & Koh, 2023). Such an approach reflects the shift from the traditional “command and control” model toward the concept of “mission command” (Dempsey, 2012), which replaces centralized directives with the commander’s commitment to granting subordinates the autonomy and discretion required to act effectively (Godinez & Leslie, 2015). The consequent leaders’ behaviors enhance operational performance and, in a sort of chain reaction, mission success and personnel survival (Casey, 2016).

Within the context of leader development, self-efficacy serves as a primary intrapersonal resource that encourages the transition from “knowing” to “doing” (Day, 2000). It is defined as “beliefs in one’s perceived capabilities to organize the positive psychological capabilities, motivation, means, collective resources, and courses of action required to attain effective, sustainable performance across leadership roles, demands, and contexts” (Hannah *et al.*, 2008, p. 2). In line with Bandura’s (2000) and evidence from high-demanding jobs (Trocino *et al.*, 2025), the literature on armed forces settings has identified leadership self-efficacy as a key factor shaping how officers interpret challenges, regulate emotions, mobilize effort, and persist in the face of operational adversity (Bergman *et al.*, 2019; Navickienė & Vasiliauskas, 2024; Samuels *et al.*, 2010). This construct appears particularly salient for cadets, who are at a critical developmental stage in which professional identity, confidence, and leadership style are still being formed (Siew & Koh, 2023). Notably,

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3 155 Chemers *et al.* (2000) found that leadership self-efficacy predicted both objective and subjective
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5 156 leadership performance.

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8 157 The training literature has documented that leadership self-efficacy is more likely to be
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10 158 developed when instructional designs allow trainees to engage in the “claiming and granting” of
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12 159 leadership roles within simulated operational environments (DeRue & Ashford, 2010; Torrico *et al.*,
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14 160 2025). Specifically, by exposing trainees to realistic, high-fidelity scenarios that simulate operational
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17 161 demands, they can provide trainees with mastery experiences (Maenhout *et al.*, 2021; Salas *et al.*,
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19 162 2003). In particular, Samuels *et al.* (2010) examined leadership self-efficacy development among
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22 163 individuals completing a parachute free-fall course and documented increases in leader self-control
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24 164 efficacy (i.e., the capacity to maintain cognitive and emotional control) and leader self-assertiveness
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26 165 efficacy (i.e., the ability to make rapid and technically sound decisions in leadership situations).
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29 166 Similarly, Bergman *et al.* (2019) showed that static-line parachute training—an inherently threatening
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31 167 activity requiring active mastery—significantly enhanced leader self-efficacy. As conceptualized in
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33 168 recent integrative reviews (Day *et al.*, 2014; Kirchner & Akdere, 2017), it can be stated that mastery
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35 169 experiences act as a catalyst for the developmental journey, enabling junior leaders to refine their
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38 170 psychological capital and identity in preparation for the complex demands of unit leadership.

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40 171 Furthermore, as Straus *et al.* (2018) suggest, immersive, high-fidelity training scenarios can
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42 172 enhance leader self-efficacy and adaptive knowledge, particularly when programs emphasize the
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45 173 perceived relevance of the course to military work. More precisely, the Authors found that such a
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47 174 perception was an antecedent of training transfer intention, supporting the notion that perceived
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49 175 usefulness serves as a critical cognitive mechanism through which self-efficacy translates into a
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53 54 177 55 56 178 **The current study**

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58 179 Based on prior research demonstrating that leadership training can enhance leadership
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180 self-efficacy through mastery-oriented, realistic, and cognitively demanding learning experiences

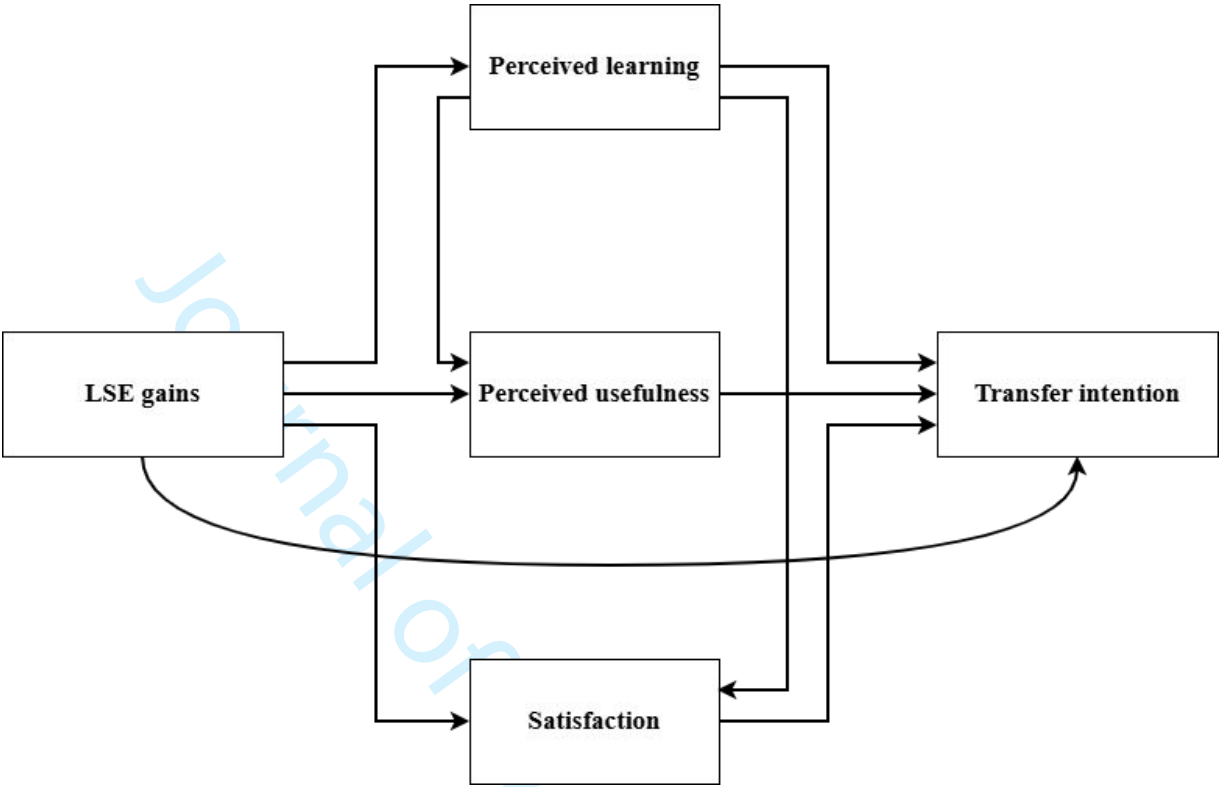
(e.g., Bergman *et al.*, 2019), and on evidence that trainees' reactions are essential drivers for transfer-related intentions (e.g., Straus *et al.*, 2018), the present study aimed to further clarify how these psychological processes unfold within a military training context. Specifically, although increases in leadership self-efficacy are widely assumed to promote the application of learned competencies, empirical findings suggest that self-efficacy alone may not be sufficient to translate learning outcomes into behavioral intentions, particularly when trainees' evaluative reactions are not taken into account. Therefore, the present study examined whether perceived usefulness and satisfaction can explain the relationships between leadership self-efficacy and transfer intention in the context of high-fidelity leadership self-efficacy training targeting cadets. Consequently, based on the theoretical framework and the specific operational context of a military leadership course, the following hypotheses were proposed:

H1: A significant increase in leadership self-efficacy will be reported upon completion of the training compared to baseline levels.

H2: Gains in leadership self-efficacy will be positively associated with the intention to transfer training to the operational environment.

H3: The relationship between gains in leadership self-efficacy and transfer intention will be serially mediated by (H3a) perceived learning and perceived usefulness as well as by (H3b) perceived learning and satisfaction.

Figure 1. Hypothesized model



Note. LSE gains = the difference between post-training and pre-training scores.

Training course

The present study examined the “FILMC” (Integrated Training in Leadership, Management, and Aerospace Competencies) program, a mandatory third-year course established during the 2013–2014 academic biennium (Tatarelli, 2017). This training module is specifically designed to simulate the planning and execution of an air campaign within a complex international crisis scenario (Accademia Aeronautica, 2026). To address logistical constraints associated with using real aircraft while preserving high operational fidelity, the training used sailboats as functional proxies for aeronautical assets. This pedagogical choice allowed cadets to experience the operational, logistical, and strategic dynamics typical of “Out of Area Operations” within an HRO context.

Structured into two phases to scaffold learning and leadership self-efficacy, the intervention began with the one-week pre-livex phase (35 hours), focusing on leadership theory, safety, and technical navigation. Specifically, fifth-year senior cadets (“direx”) served as mentors and behavioral

models; this peer-assisted framework fostered group cohesion and vicarious learning, priming self-efficacy before practical application.

Subsequently, the cadets transitioned to the livex phase. Within the specific context of the FILMC project, the primary strength of this live exercise methodology lies in its high ecological validity: by immersing trainees in highly realistic, unpredictable scenarios, it enables them to apply theoretical knowledge and develop concrete decision-making skills under severe stress. However, the institutional literature highlights specific structural needs associated with this simulation: it is highly resource-intensive, requiring massive participation from various operational wings, and strictly necessitates the presence of expert external evaluators—including behavioral analysts and psychologists—to ensure objective assessment and guide the crucial debriefing processes (Tatarelli, 2017). Aligning with these principles, the livex phase engaged cadets in a two-week immersive simulation (57 hours per week) at the Sea Survival and Training Center, which served as a forward operating base (Aeronautica Militare, 2021). A defining feature of this phase was that cadets were required to manage their own deployment autonomously, organizing logistical materials and structuring themselves into an operational unit. This phase followed a daily cycle of briefing (strategic planning), execution (operational action), and debriefing (reflective analysis). The simulation required cadets to manage complex, high-pressure scenarios—ranging from cyberattacks and IED threats to the recovery of downed pilots—and included a Medevac simulation involving HH-139 helicopters (Aeronautica Militare, 2021). Soft-air replicas were used to enhance the realism of force-protection activities and, in turn, promoting mastery experience.

Furthermore, to strengthen perceived usefulness and role relevance, the training design aligned simulation tasks with cadets' future professional roles. Whether acting as pilots, logistics officers, or air defense controllers within the simulation, participants were required to apply specific technical and soft skills (e.g., resource management, rapid decision-making under stress) to achieve mission objectives. The structured debriefing sessions conducted at the end of each mission served as a key mechanism for transforming experiential activity into explicit learning, enabling trainees to

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3 242 reflect on performance gaps and to consolidate the perceived utility of the competencies acquired for
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5 243 their future military careers.

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12 246 The data collection process consisted of two distinct time points. The initial sample at Time 1
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15 247 (T1) consisted of 84 participants, while 83 participants completed the survey at Time 2 (T2). The
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17 248 final sample retained for analysis included 70 participants. Participants' ages ranged from 21 to 26
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19 249 years ($M = 22.41$; $SD = 1.22$). Regarding gender distribution, the majority of the sample was male
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22 250 (71.4%). Regarding academic affiliation, the sample was predominantly composed of students from
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24 251 the Faculty of Engineering (84.3%), followed by Law (14.3%) and Medicine (1.4%). In terms of
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29 253 university degree. Regarding the delivery mode of previously attended courses, most participants
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31 254 reported that courses were conducted in person (64.3%), followed by hybrid formats (34.3%), with a
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33 255 small minority delivered entirely online (1.4%). Finally, regarding training content, 72.9% of the
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35 256 courses focused on soft skills, while 21.4% targeted hard skills.

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40 258 **Measures**

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42 259 In the first section of the questionnaire, participants provided their informed consent.
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45 260 Subsequently, they were asked to report their sociodemographic information, specifically age,
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47 261 gender, and academic background (i.e., faculty and highest level of education attained). Additionally,
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49 262 information regarding the characteristics of the training course was collected, including the delivery
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52 263 mode (e.g., in-person, hybrid, or online) and the training content (i.e., soft skills vs. hard skills).

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54 264 Finally, to evaluate the hypothesized relationships among psychological variables, the
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56 265 following measures were administered to all participants in the same order:

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58 266 *Leadership self-efficacy* was measured using the *Leadership Self-efficacy Scale* by Murphy
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60 267 (1992). The scale consists of 8 items rated on a 5-point Likert scale, ranging from 1 = “strongly

disagree” to 5 = “strongly agree”. A representative item from the scale is: “I feel that I know a lot more than most leaders about what it takes to be a good leader”. Higher scores indicate a greater self-perception of effectiveness as a leader. Cronbach’s α T1 = .82; T2 = .79.

Perceived learning was measured using the Knowledge subscale of the Questionnaire for Professional Training Evaluation (Q4TE; Grohmann & Kauffeld, 2013). The scale evaluates the perceived learning of training, using an 11-point Likert scale ranging from 0 = “completely disagree” to 10 = “completely agree”. The items of the scale are: “After the training, I know substantially more about the training contents than before” and “I learned a lot of new things in the training”. Cronbach’s α = .92.

Perceived usefulness was measured using the Utility subscale of the Questionnaire for Professional Training Evaluation (Q4TE; Grohmann & Kauffeld, 2013). The scale evaluates the perceived usefulness of training for learners’ work, using an 11-point Likert scale ranging from 0 = “completely disagree” to 10 = “completely agree”. The items of the scale are: “The training is very beneficial to my work” and “Participation in this kind of training is very useful for my job”. Cronbach’s α = .96.

Perceived satisfaction with the training course was measured using the Satisfaction subscale of the Questionnaire for Professional Training Evaluation (Q4TE; Grohmann & Kauffeld, 2013). The scale evaluates trainees’ satisfaction with a training course using an 11-point Likert scale ranging from 0 = “completely disagree” to 10 = “completely agree”. The items of the scale are: “I enjoyed the training very much” and “I will keep the training in good memory”. Cronbach’s α = 0.96.

Training transfer intention was measured using three items from Cheng *et al.* (2015). The items were evaluated using a 5-point Likert scale, from 1 = “completely disagree” to 5 = “completely agree”. A representative item is: “I intend to apply what I have learned from training on the job”. Cronbach’s α = .95.

Statistical analyses

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3 294 Statistical analyses were conducted using IBM SPSS version 30. First, descriptive statistics
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5 295 were computed for all study variables. Subsequently, bivariate correlations were examined to assess
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8 296 associations between these variables. Moreover, a paired-samples *t*-test was conducted to evaluate
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10 297 the effectiveness of the training course by comparing participants' leadership self-efficacy scores
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12 298 obtained at time 1 (T1; pre-test) with those at time 2 (T2; post-test). To better understand the
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15 299 mechanism by which enhanced leadership self-efficacy could affect the training transfer process, a
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17 300 serial multiple mediation model was conducted using the PROCESS macro (Model 6). In this model,
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19 301 the variable leadership self-efficacy gains was used as the predictor and was operationalized as the
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22 302 difference between T2 and T1 scores. Specifically, we ran 10,000 repetitions to get a 95% confidence
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24 303 interval, and indirect effects were considered statistically significant if the confidence intervals (CIs)
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27 304 did not include zero. The paths evaluated were controlled for the potential confounding effects of
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29 305 participants' age, gender, and training mode in prior courses attended.
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33 307 **Results**

35 308 *Descriptive analyses*

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38 309 Descriptive analyses and Pearson's correlations among variables are shown in Table 1.
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40 310 Specifically, participants reported above-average levels of training transfer intention ($M = 3.94$; SD
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42 311 $= 1.08$). Participants also evaluated the training positively, reporting high scores for perceived
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45 312 learning ($M = 7.44$; $SD = 2.47$), perceived usefulness ($M = 6.71$; $SD = 2.86$), and satisfaction ($M =$
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47 313 7.35 ; $SD = 2.36$). Concerning leadership self-efficacy, the mean score at T2 ($M = 4.07$; $SD = 0.49$)
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49 314 was higher than the baseline score at T1 ($M = 3.95$; $SD = 0.55$).
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52 315 Regarding correlations among the variables, training transfer intention showed positive,
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54 316 statistically significant correlations with perceived learning ($r = .75$; $p < .01$), perceived usefulness (r
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56 317 $= .84$; $p < .01$), and satisfaction ($r = .77$; $p < .01$), suggesting that positive training evaluations are
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59 318 closely linked to the intention to transfer learning. Furthermore, strong positive correlations were
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319 observed among the training evaluation measures: perceived learning was significantly associated

with both perceived usefulness ($r = .83; p < .01$) and satisfaction ($r = .78; p < .01$), and perceived usefulness was strongly correlated with satisfaction ($r = .82; p < .01$).

Regarding self-efficacy measures, leadership self-efficacy at T1 showed non-significant correlations with training transfer intention ($r = .07; p > .05$) and with the training evaluation measures (perceived learning: $r = -.03, p > .05$; perceived usefulness: $r = -.07, p > .05$; satisfaction: $r = -.01, p > .05$). Conversely, leadership self-efficacy at T2 was positively and significantly correlated with training transfer intention ($r = .47; p < .01$), perceived learning ($r = .40; p < .01$), perceived usefulness ($r = .36; p < .01$), and satisfaction ($r = .44; p < .01$). Finally, a significant positive correlation was found between T1 and T2 leadership self-efficacy scores ($r = .55; p < .01$).

Table 1. Descriptive statistics and Pearson's correlations among variables.

	<i>M (SD)</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
1. Training transfer intention	3.94 (1.08)	-					
2. Perceived learning	7.44 (2.47)	.75**	-				
3. Perceived usefulness	6.71 (2.86)	.84**	.83**	-			
4. Satisfaction	7.35 (2.36)	.77**	.78**	.82**	-		
5. LSE T1	3.95 (0.55)	.07	-.03	-.07	-.01	-	
6. LSE T2	4.07 (0.49)	.47**	.40**	.36**	.44**	.55**	-
7. LSE gains	0.13 (0.50)	.38**	.43**	.44**	.45**	-.56**	.38**

Note. LSE gains = the difference between post-training and pre-training scores; M = mean; SD = standard deviation. ** $p < .01$.

Effectiveness of training in improving leadership self-efficacy

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3 337 The paired-samples *t* test showed a statistically significant improvement in participants'
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6 338 leadership self-efficacy following the course, supporting H1. Specifically, leadership self-efficacy
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8 339 increased from T1 to T2 revealing a mean increase from $M_{T1} = 3.95$ ($SD = 0.55$) to $M_{T2} = 4.07$ ($SD =$
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11 340 0.49). The difference between the two measurement times was statistically significant, $t(69) = 2.11$,
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13 341 $p = .039$. The effect size, based on Cohen's *d*, was .25. Consequently, the findings supported the
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15 342 effectiveness of the training in promoting a significant, albeit small, increase in participants'
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17 343 leadership self-efficacy.

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22 345 *Mediation analyses*

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24 346 The analyses indicated that none of the control variables (i.e., age, gender, and training mode)
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27 347 emerged as statistically significant predictors of either the mediators or the outcome variable in the
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29 348 estimated model. The total and direct effects of training on transfer intention are presented in Table
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31 349 2. The total effect was statistically significant, whereas the direct effect was not (H2), suggesting full
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34 350 mediation through the proposed psychological mechanisms.

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36 351 Further examination of the specific indirect pathways (Table 2) revealed that the three simple
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38 352 indirect effects — through perceived learning, perceived usefulness, or satisfaction—were not
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41 353 statistically significant. In contrast, the serial indirect effect through perceived learning and perceived
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43 354 usefulness (H3a) was statistically significant, as the bootstrap confidence interval did not include
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45 355 zero. The serial pathway through perceived learning and satisfaction (H3b) did not show a significant
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47 356 indirect effect. This pattern supports the hypothesis that gains in leadership self-efficacy do not
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50 357 directly translate into transfer intention but rather operate through a serial mediation. The model
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52 358 accounted for 23.21% of the variance in perceived learning, 70% in perceived usefulness, 63.64% in
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54 359 satisfaction, and 73.76% in transfer intention.

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57 360
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59 361 **Table 2.** Mediation analyses

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Path	Unstandardized effects	SE	95% CI
<i>Total effect</i>			
Training → Transfer intention	.84	.25	[.35, 1.33]
<i>Direct effect</i>			
Training → Transfer intention	.17	.17	[-.32, .34]
<i>Indirect effects</i>			
Training → Learning → Intention	.07	.17	[-.22, .46]
Training → Usefulness → Intention	.14	.09	[-.02, .33]
Training → Satisfaction → Intention	.08	.06	[-.01, .22]
Training → Learning → Usefulness → Intention	.41	.17	[.10, .74]
Training → Learning → Satisfaction → Intention	.17	.12	[-.02, .47]

Note: bootstrap confidence intervals based on 10,000 bootstrap samples.

Discussion

Although leadership is a core skill in the military sector, little is known about the psychological mechanisms through which leadership training translates into intentions to apply learned competencies on the job (de Jong *et al.*, 2026; Dirani, 2017). Therefore, the present study aimed to examine the effectiveness of a high-fidelity leadership training course delivered to military cadets and to investigate the psychological processes underlying the relationship between leadership self-efficacy gains and training transfer intention.

Supporting H1, participants reported a significant increase in leadership self-efficacy from pre-to post-training, suggesting that the course may have strengthened their confidence in their leadership capabilities. This result is consistent with the conceptualization of self-efficacy (Bandura, 2000) as an experience-based belief that develops primarily through engagement with challenging tasks or mastery experiences. Accordingly, this increase can plausibly be attributed to key features of

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3 377 the instructional design, which exposed cadets to realistic and cognitively demanding operational
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5 378 scenarios. As noted by Salas *et al.* (2003), the degree to which a learning environment reflects the
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7 379 psychological and cognitive demands of the operational context represents a **crucial** determinant of
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10 380 skill acquisition. Additionally, **the result is in line with** prior research indicating that experience-
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12 381 centered environments are particularly effective in fostering leadership self-efficacy (Maenhout *et*
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14 382 *al.*, 2021; Torrico *et al.*, 2025) because they promote active decision-making and behavioral
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17 383 engagement rather than passive learning (Straus *et al.*, 2018; Wong *et al.*, 2003).

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19 384 **Contrary to H2, the analyses revealed no** significant direct association between **leadership**
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21 385 **self-efficacy gains** and transfer intention. **Therefore,** improvements **of** an essential professional soft
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23 386 skill (i.e., leadership) appear to represent a necessary but not sufficient condition for the formation of
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26 387 transfer intention. **This result could be interpreted as indicating that learned competencies do not**
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28 388 **necessarily ensure their implementation on the job** (de Jong *et al.*, 2026; Grossman & Salas, 2011),
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30 389 underscoring the importance of examining the mechanisms linking self-efficacy to transfer-related
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33 390 outcomes. **Moreover,** since transfer intention reflects not only perceived capability, but also a
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35 391 commitment to enact learned competencies in future work (Holton III *et al.*, 2000), **it can be supposed**
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37 392 **that perceive** oneself as more capable following training does not automatically translate into an
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40 393 intention to apply leadership behaviors (Chiaburu & Lindsay, 2008), particularly when such
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42 394 application **requires** additional effort, responsibility, and potential interpersonal or performance-
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44 395 related risks, as is often the case in military contexts. In other words, while gains in LSE may have
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47 396 increased trainees' perceived capacity to lead, forming an intention to act requires an additional level
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49 397 of cognitive elaboration through which individuals clarify what has been learned and assess whether
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51 398 these competencies can or should be implemented in their professional role. This interpretation aligns
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53 399 with the broader transfer literature, which conceptualizes intention as a proximal motivational
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56 400 outcome emerging only after trainees cognitively integrate educational experiences with role
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58 401 demands and performance expectations (Sahoo & Mishra, 2022). In this vein, the absence of a
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60 402 significant direct effect is theoretically coherent with the assumption that transfer is not a reflex of

improved learning, but rather a complex motivational process (E. W. L. Cheng & Hampson, 2008). Within this process, leadership self-efficacy appears to function not as a direct driver of transfer intention but as a more distal psychological resource whose influence depends on how trainees subsequently evaluate their training experience.

Consistent with this standpoint, the analyses revealed a significant indirect relationship between training and transfer intention, **partially confirming H3**. Notably, the findings highlighted a serial mediation involving **gains in self-efficacy following training**, enhanced perceptions of having acquired **them**, judgments **about them**, and the subsequent intention to transfer them (**H3a**). In contrast, the path involving satisfaction with the course was not statistically significant (**H3b**). Hence, perceived learning appears to play a primary gatekeeping role in this process; recognizing concrete learning gains provides the cognitive basis for trainees to evaluate the relevance and applicability of newly acquired competencies. Consequently, **it can be supposed that** trainees are unlikely to judge a program as useful unless they first become aware that learning has occurred. Additionally, such a perception emerged associated with the usefulness of evaluation and, in a sort of chain reaction, with training intention. This result can be better understood through Kirkpatrick's (2015) evaluation framework, which distinguishes between different types of training reactions and posits that cognitive reactions are more strongly related to transfer-related outcomes than affective responses. More specifically, while satisfaction primarily reflects affective enjoyment, perceived usefulness reflects whether trainees believe that applying what they have learned is worthwhile for their professional role (**Ruona et al., 2002**). Consequently, in line with a cognitive valuation described by expectancy-based motivational principles (Vroom et al., 2015) and empirical evidence (Hamzah et al., 2025), it can be stated that trainees will be more willing to apply learned competencies if they believe that such behavior could lead to valued outcomes. In this sense, perceived usefulness or operational utility reflects not only anticipated performance benefits but also the desirability of expectations regarding the consequences of engaging in transfer-related behavior (Seeg et al., 2022). Following this reasoning, perceived usefulness may be interpreted as an indicator of the extent to which training—

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3 429 and especially training transfer — is valued within the organizational context (Schettino *et al.*, 2024).
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5 430 Therefore, when trainees perceive that their organization supports, fosters, and rewards the
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8 431 application of newly acquired competencies, training is more likely to be judged as valuable and
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10 432 worth applying (Marsick & Volpe, 1999; Marsick & Watkins, 2003). Such a dynamic is particularly
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12 433 salient in military settings, given the strong role of institutional norms, values, hierarchy, and
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14 434 professional identity (Redmond *et al.*, 2015). This environment makes organizational expectations
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17 435 and the reinforcement mechanisms structured and visible (Heward *et al.*, 2024), potentially
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19 436 strengthening the motivational link between perceived usefulness and transfer intention.

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22 437 Overall, these findings suggest that, for military personnel, transfer intention is most likely to
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24 438 form when trainees clearly recognize that meaningful learning has occurred and perceive that
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26 439 applying newly acquired leadership competencies is both aligned with the demands of their
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28 440 professional role and with the inherent expectations of the organizational environment.

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33 442 **Limitations and suggestions for future research**

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35 443 This study has several limitations that should be considered when interpreting the findings.
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37 444 First, as the study employed a specific sample of military cadets participating in a unique high-fidelity
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40 445 simulation, the results may not be generalizable to other military branches, differing ranks, or civilian
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42 446 leadership contexts. Furthermore, the absence of a control group—limited by the mandatory nature
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44 447 of the institutional training curriculum—precludes a comparison with further instructional methods
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47 448 or a no-treatment condition. Additionally, this study did not account for specific control variables that
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49 449 may have occurred between the two time points and may have influenced the participants' perceived
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51 450 efficacy independently of the intervention. This limits the ability to infer strict cause-and-effect
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54 451 relationships among the cognitive mediators. Moreover, the exclusive reliance on self-report
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56 452 measures may have not fully excluded the effects of social desirability—a factor often heightened in
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58 453 hierarchical military environments—and could introduce common method variance. In addition,
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60 454 despite the well-established positive relationship between the intention to transfer and actual behavior

(e.g., Blume *et al.*, 2010; Grossman & Salas, 2011), this study did not examine this link during the subsequent operational phase. Consequently, future research should employ longitudinal and multi-source designs, including objective performance metrics and peer or supervisor evaluations, to track the actual transfer of leadership behavior over time. Additionally, subsequent studies should explore how additional psychological and contextual factors—such as unit climate, supervisory support, and operational stressors—may enable or constrain the application of leadership skills in military and other HROs.

Conclusions

This study contributes to the literature on professional development within military contexts by providing empirical evidence for the effectiveness of a high-fidelity training program for officer cadets.

Specifically, in line with previous research, our data support the thesis that leadership self-efficacy can be fostered through high-fidelity training by allowing cadets to successfully navigate complex, ecologically valid scenarios that closely mirror the cognitive and behavioral demands of their future roles. However, this study suggests that, in military contexts, leadership self-efficacy alone may not be sufficient to achieve a primary goal of organizational training: training transfer. More precisely, this research identified a specific mechanism that appears to be essential for translating leadership self-efficacy into a willingness to action. The relationship between leadership self-efficacy gains and transfer intention was affected by perceived learning and utility reactions, whereas affective reactions did not play a significant role. Hence, in contrast to the assumption that “happy trainees” are necessarily “transferring trainees” (Alliger & Janak, 1989), this study suggests that for military personnel, the intention to transfer tends to be driven less by the enjoyment of the educational experience and more by a cognitive assessment of its operational relevance and value for professional survival and effectiveness.

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3 480 Given these considerations, it can be assumed that beyond merely developing self-efficacy
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5 481 through high-fidelity simulations, training programs should strengthen trainees’ awareness of what
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7 482 they have learned and its direct relevance to operational demands. This goal requires a thorough
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10 483 analysis of the specific tasks, contextual constraints, and decision-making challenges that characterize
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12 484 the cadets’ future roles, ensuring that instructional content reflects real-world responsibilities.
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15 485 Furthermore, to further increase the perceived operational utility of the training and promote
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17 486 subsequent transfer, military organizations should integrate leadership skills into formal performance
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19 487 appraisals, conduct post-training behavioral assessments, and provide trainees with immediate
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22 488 opportunities to exercise and implement these competencies in their daily job tasks.
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26 490 **Declarations**

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28 491 **Data availability statement**

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31 492 The data that support the findings of this study are available from the corresponding author, GS, upon
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33 493 reasonable request.
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37 495 **Disclosure statement**

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40 496 No relevant financial or non-financial competing interests to report.
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45 498 **References**

46
47 499 Abbe, A. (2021). Evaluating military cross-cultural training programs. *Expeditions with MCUP*,
48
49 500 2021(1), 1–59.
50
51 501 Accademia Aeronautica. (2026). *Corso di sopravvivenza in mare e montagna*. Accademia
52
53 502 Aeronautica. <https://www.accademiaaeronautica.it/addestramento-a-terra-schema/>
54
55
56 503 Aeronautica Militare. (2021). *Operazione Rogue One: Gli aspiranti del corso zodiaco v si addestrano*
57
58 504 *a nisida*. Aeronautica Militare. [https://www.aeronautica.difesa.it/news/operazione-rogue-](https://www.aeronautica.difesa.it/news/operazione-rogue-one-gli-aspiranti-del-corso-zodiaco-v-si-addestrano-a-nisida/)
59
60 505 *one-gli-aspiranti-del-corso-zodiaco-v-si-addestrano-a-nisida/*

- Alliger, G. M., & Janak, E. A. (1989). Kirkpatrick's levels of training criteria: Thirty years later. *Personnel Psychology*, 42(2), 331–342. <https://doi.org/10.1111/j.1744-6570.1989.tb00661.x>
- Awais Bhatti, M., Ali, S., Mohd Isa, M. F., & Mohamed Battour, M. (2014). Training transfer and transfer motivation: The influence of individual, environmental, situational, training design, and affective reaction factors. *Performance Improvement Quarterly*, 27(1), 51–82. <https://doi.org/10.1002/piq.21165>
- Baldwin, T. T., & Ford, J. K. (1988). Transfer Of Training: A Review And Directions For Future Research. *Personnel Psychology*, 41(1), 63–105. <https://doi.org/10.1111/j.1744-6570.1988.tb00632.x>
- Bandura, A. (2000). Exercise of Human Agency Through Collective Efficacy. *Current Directions in Psychological Science*, 9(3), 75–78. <https://doi.org/10.1111/1467-8721.00064>
- Benmira, S., & Agboola, M. (2021). Evolution of leadership theory. *BMJ Leader*, leader-2020-000296. <https://doi.org/10.1136/leader-2020-000296>
- Bergman, D., Sendén, M. G., & Berntson, E. (2019). Preparing to lead in combat: Development of leadership self-efficacy by static-line parachuting. *Military Psychology*, 31(6), 481–489. <https://doi.org/10.1080/08995605.2019.1670583>
- Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Transfer of Training: A Meta-Analytic Review. *Journal of Management*, 36(4), 1065–1105. <https://doi.org/10.1177/0149206309352880>
- Cantu, J., Tolk, J., Fritts, S., & Gharehyakheh, A. (2020). High Reliability Organization (HRO) systematic literature review: Discovery of culture as a foundational hallmark. *Journal of Contingencies and Crisis Management*, 28(4), 399–410. <https://doi.org/10.1111/1468-5973.12293>
- Casey, B. A. (2016). *Combat Airmen: Examining USAF Expeditionary Skills Training*.

- 1
2
3 530 Chemers, M. M., Watson, C. B., & May, S. T. (2000). Dispositional affect and leadership
4
5 531 effectiveness: A comparison of self-esteem, optimism, and efficacy. *Personality and Social*
6
7 532 *Psychology Bulletin*, 26(3), 267–277. <https://doi.org/10.1177/0146167200265001>
9
10 533 Cheng, E. W. L., & Hampson, I. (2008). Transfer of training: A review and new insights.
11
12 534 *International Journal of Management Reviews*, 10(4), 327–341.
13
14 535 <https://doi.org/10.1111/j.1468-2370.2007.00230.x>
16
17 536 Cheng, E. W., Sanders, K., & Hampson, I. (2015). An intention-based model of transfer of training.
18
19 537 *Management Research Review*, 38(8), 908–928. <https://doi.org/10.1108/MRR-05-2014-0107>
20
21 538 Chiaburu, D. S., & Lindsay, D. R. (2008). Can do or will do? The importance of self-efficacy and
22
23 539 instrumentality for training transfer. *Human Resource Development International*, 11(2),
24
25 540 199–206. <https://doi.org/10.1080/13678860801933004>
27
28 541 Crow, S. D. (2007). *An evaluation of organizational and experience factors affecting the perceived*
29
30 542 *transfer of US Air Force basic combat skills training*.
32
33 543 Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A
34
35 544 comparison of two theoretical models. *Management Science*, 35(8), 982–1003.
36
37 545 <https://doi.org/10.1287/mnsc.35.8.982>
39
40 546 Day, D. V. (2000). Leadership development: A review in context. *The Leadership Quarterly*, 11(4),
41
42 547 581–613. [https://doi.org/10.1016/S1048-9843\(00\)00061-8](https://doi.org/10.1016/S1048-9843(00)00061-8)
43
44 548 Day, D. V., Fleenor, J. W., Atwater, L. E., Sturm, R. E., & McKee, R. A. (2014). Advances in leader
45
46 549 and leadership development: A review of 25 years of research and theory. *The Leadership*
47
48 550 *Quarterly*, 25(1), 63–82. <https://doi.org/10.1016/j.leaqua.2013.11.004>
50
51 551 Day, D. V., Riggio, R. E., Tan, S. J., & Conger, J. A. (2021). Advancing the science of 21st-century
52
53 552 leadership development: Theory, research, and practice. In *The Leadership Quarterly* (Vol.
54
55 553 32, Issue 5, p. 101557). Elsevier. <https://doi.org/10.1016/j.leaqua.2021.101557>
56
57
58
59
60

- de Jong, B., Gegenfurtner, A., & Quesada-Pallarès, C. (2026). Critical Perspectives on Researching Transfer of Training. In *International Journal of Training and Development* (Vol. 30, Issue 1, pp. 1–4). <https://doi.org/10.1111/ijtd.70000>
- Dempsey, M. E. (2012). *America's military: A profession of arms*. Joint Chiefs of Staff.
- DeRue, D. S., & Ashford, S. J. (2010). Who will lead and who will follow? A social process of leadership identity construction in organizations. *Academy of Management Review*, 35(4), 627–647. <https://doi.org/10.5465/amr.35.4.zok627>
- Diamantidis, A. D., & Chatzoglou, P. D. (2014). Employee post-training behaviour and performance: Evaluating the results of the training process. *International Journal of Training and Development*, 18(3), 149–170. <https://doi.org/10.1111/ijtd.12034>
- Dirani, K. (2017). Understanding the process of transfer of training in a military context: Marching into new roles. *Advances in Developing Human Resources*, 19(1), 101–112. <https://doi.org/10.1177/1523422316682929>
- EA Ruona, W., Leimbach, M., F. Holton III, E., & Bates, R. (2002). The relationship between learner utility reactions and predicted learning transfer among trainees. *International Journal of Training and Development*, 6(4), 218–228. <https://doi.org/10.1111/1468-2419.00160>
- Fletcher, J. D., & Chatelier, P. R. (2000). *An overview of military training*. Institute for Defense Analyses.
- Gemmano, C. G., Giancaspro, M. L., Galiotto, S., & Manuti, A. (2024). A Flight Path to Well-Being: The Mediating Role of Continuous Learning between Burnout and Work Performance in Aviation Professionals. *Social Sciences*, 13(10), 513. <https://doi.org/10.3390/socsci13100513>
- Giovengo, R. D. (2014). *Training transfer, metacognition skills, and performance outcomes in blended versus traditional training programs*. Walden University.
- Godinez, E., & Leslie, B. B. (2015). Army civilian leadership development: Self-efficacy, choice, and learning transfer. *Adult Learning*, 26(3), 93–100. <https://doi.org/10.1177/1045159515583259>

- 1
2
3 580 Gorman, P. F. (1990). *The military value of training*.
4
5 581 Grohmann, A., & Kauffeld, S. (2013). Evaluating training programs: Development and correlates of
6
7
8 582 the Questionnaire for Professional Training Evaluation. *International Journal of Training and*
9
10 583 *Development*, 17(2), 135–155. <https://doi.org/10.1111/ijtd.12005>
11
12 584 Grossman, R., & Salas, E. (2011). The transfer of training: What really matters. *International Journal*
13
14
15 585 *of Training and Development*, 15(2), 103–120. <https://doi.org/10.1111/j.1468->
16
17 586 2419.2011.00373.x
18
19 587 Hamzah, H. A., Marcinko, A. J., Stephens, B., & Weick, M. (2025). Making soft skills ‘stick’: A
20
21
22 588 systematic scoping review and integrated training transfer framework grounded in
23
24 589 behavioural science. *European Journal of Work and Organizational Psychology*, 34(2), 237–
25
26 590 250. <https://doi.org/10.1080/1359432X.2024.2376909>
27
28 591 Hannah, S. T., Avolio, B. J., Luthans, F., & Harms, P. D. (2008). Leadership efficacy: Review and
29
30
31 592 future directions. *The Leadership Quarterly*, 19(6), 669–692.
32
33 593 <https://doi.org/10.1016/j.leaqua.2008.09.007>
34
35 594 Heward, C., Li, W., Chun Tie, Y., & Waterworth, P. (2024). A scoping review of military culture,
36
37
38 595 military identity, and mental health outcomes in military personnel. *Military Medicine*,
39
40 596 189(11–12), e2382–e2393. <https://doi.org/10.1093/milmed/usae276>
41
42 597 Holton III, E. F., Bates, R. A., & Ruona, W. E. A. (2000). Development of a generalized learning
43
44
45 598 transfer system inventory. *Human Resource Development Quarterly*, 11(4), 333–360.
46
47 599 [https://doi.org/10.1002/1532-1096\(200024\)11:4%3C333::AID-HRDQ2%3E3.0.CO;2-P](https://doi.org/10.1002/1532-1096(200024)11:4%3C333::AID-HRDQ2%3E3.0.CO;2-P)
48
49 600 Kirchner, M., & Akdere, M. (2017). Military leadership development strategies: Implications for
50
51
52 601 training in non-military organizations. *Industrial and Commercial Training*, 49(7–8), 357–
53
54 602 364. <https://doi.org/10.1108/ICT-06-2017-0047>
55
56 603 Kirkpatrick, J. (2015). An introduction to the new world Kirkpatrick model. *Kirkpatrick Partners*,
57
58 604 10, 9781580468619.
59
60

- Kirwan, C., & Birchall, D. (2006). Transfer of learning from management development programmes: Testing the Holton model. *International Journal of Training and Development*, 10(4), 252–268. <https://doi.org/10.1111/j.1468-2419.2006.00259.x>
- Lord, R. G., & Hall, R. J. (2005). Identity, deep structure and the development of leadership skill. *The Leadership Quarterly*, 16(4), 591–615. <https://doi.org/10.1016/j.leaqua.2005.06.003>
- Maenhout, G., Billiet, V., Sijmons, M., & Beeckman, D. (2021). The effect of repeated high-fidelity in situ simulation-based training on self-efficacy, self-perceived leadership qualities and team performance: A quasi-experimental study in a NICU-setting. *Nurse Education Today*, 100, 104849. <https://doi.org/10.1016/j.nedt.2021.104849>
- Marsick, V. J., & Volpe, M. (1999). The Nature and Need for Informal Learning. *Advances in Developing Human Resources*, 1(3), 1–9. <https://doi.org/10.1177/152342239900100302>
- Marsick, V. J., & Watkins, K. E. (2003). Demonstrating the value of an organization's learning culture: The dimensions of the learning organization questionnaire. *Advances in Developing Human Resources*, 5(2), 132–151. <https://doi.org/10.1177/1523422303005002002>
- McCraine, R. E. (2006). *Factors Affecting the Transfer of Basic Combat Skills Training in the Air Force*.
- Murphy, S. E. (1992). *The contribution of leadership experience and self-efficacy to group performance under evaluation apprehension*. University of Washington.
- Navickienė, O., & Vasiliauskas, A. V. (2024). The effect of cadet resilience on self-efficacy and professional achievement: Verification of the moderated mediating effect of vocational calling. *Frontiers in Psychology*, 14, 1330969. <https://doi.org/10.3389/fpsyg.2023.1330969>
- Park, T. J., Whang, J., Watts, S., & Han, D.-G. (2022). Key success factors in the continuous use of MOOC education in South Korea. *International Journal of Innovation and Learning*, 31(2), 137–165. <https://doi.org/10.1504/IJIL.2022.120665>

- 1
2
3 629 Pham, T. T. (2021). *The transfer of training among Australian construction workers participating in*
4
5 630 *occupational health and safety training.*
6
7
8 631 <https://researchrepository.rmit.edu.au/esploro/outputs/9922068770101341>
9
10 632 Redmond, S. A., Wilcox, S. L., Campbell, S., Kim, A., Finney, K., Barr, K., & Hassan, A. M. (2015).
11
12 633 A brief introduction to the military workplace culture. *Work*, 50(1), 9–20.
13
14 634 <https://doi.org/10.3233/WOR-141987>
15
16
17 635 Rietjens, S., Van Fenema, P. C., & Essens, P. (2013). “Train as You Fight” Revisited: Preparing for
18
19 636 a Comprehensive Approach. *PRism*, 4(2), 17–29.
20
21
22 637 Sahoo, M., & Mishra, S. (2022). Organizational influences on the motivation to transfer soft skill
23
24 638 training in an Indian power organization. *Management and Labour Studies*, 47(3), 298–318.
25
26 639 <https://doi.org/10.1177/0258042X221080802>
27
28
29 640 Salas, E., & Cannon-Bowers, J. A. (2001). The science of training: A decade of progress. *Annual*
30
31 641 *Review of Psychology*, 52(1), 471–499. <https://doi.org/10.1146/annurev.psych.52.1.471>
32
33 642 Salas, E., Milham, L. M., & Bowers, C. A. (2003). Training evaluation in the military:
34
35 643 Misconceptions, opportunities, and challenges. *Military Psychology*, 15(1), 3–16.
36
37 644 https://doi.org/10.1207/S15327876MP1501_01
38
39
40 645 Samuels, S. M., Foster, C. A., & Lindsay, D. R. (2010). Freefall, self-efficacy, and leading in
41
42 646 dangerous contexts. *Military Psychology*, 22(sup1), S117–S136.
43
44 647 <https://doi.org/10.1080/08995601003644379>
45
46
47 648 Schettino, G., & Capone, V. (2025). From Online Learning to Clinical Practice: An Investigation on
48
49 649 the Factors Influencing Training Transfer Among Physicians. *Healthcare*, 13(2), 133.
50
51 650 <https://doi.org/10.3390/healthcare13020133>
52
53
54 651 Schettino, G., Hodačová, L., Caso, D., & Capone, V. (2024). Physicians’ adoption of massive open
55
56 652 online courses content in the workplace: An investigation on the training transfer process
57
58 653 through the theory of planned behavior. *Computers in Human Behavior*, 154, 108151.
59
60 654 <https://doi.org/10.1016/j.chb.2024.108151>

- Seeg, B., Gauglitz, I. K., & Schütz, A. (2022). Explaining and enhancing training transfer: A consumer-centric evaluation of a leadership training. *Human Resource Development International*, 25(5), 506–526. <https://doi.org/10.1080/13678868.2021.1904351>
- Sherwood, J. D. (2004). *Afterburner: Naval Aviators and the Vietnam War*. NYU Press.
- Siew, D. H. K., & Koh, J. H. L. (2023). Being and becoming beginning military leaders: Implications for leadership learning. *Military Psychology*, 35(2), 142–156. <https://doi.org/10.1080/08995605.2022.2088986>
- Steiro, T. J., & Torgersen, G.-E. (2020). Preparedness and multiagency collaboration—Lessons learned from a case study in the Norwegian Armed Forces. *Sustainability*, 12(18), 7240. <https://doi.org/10.3390/su12187240>
- Straus, S. G., Shanley, M. G., Sims, C. S., Hallmark, B. W., Saavedra, A. R., Trent, S., & Duggan, S. (2018). *Innovative Leader Development: Evaluation of the US Army Asymmetric Warfare Adaptive Leader Program: Appendixes*.
- Tafvelin, S., Hasson, H., Nielsen, K., & von Thiele Schwarz, U. (2021). Integrating a transfer perspective into evaluations of leadership training. *Leadership & Organization Development Journal*, 42(6), 856–868. <https://doi.org/10.1108/LODJ-11-2019-0492>
- Tatarelli, L. (2017). *Accademia Aeronautica, la formazione integrata per la leadership, il management e le competenze aerospaziali per l'ufficiale futuro*. Reportdifesa.It. <https://www.reportdifesa.it/accademia-aeronautica-la-formazione-integrata-per-la-leadership-il-management-e-le-competenze-aerospaziali-per-lufficiale-futuro/>
- Tompkins, D. N. (2025). *Training Transfer for Military Learners: A Qualitative Case Study*. Grand Canyon University.
- Torrico, S. L., Mandeville, A., Liu, J. T., & Manegold, J. G. (2025). Increasing leadership self-efficacy through experiential learning in student groups. *Journal of Management Education*, 49(4), 608–634. <https://doi.org/10.1177/10525629251334108>

1
2
3 680 Trocino, M. F., Schettino, G., & Capone, V. (2025). Understanding Well-Being in the Classroom: A
4
5 681 Study on Italian Primary School Teachers Using the JD-R Model. *European Journal of*
6
7 682 *Investigation in Health, Psychology and Education*, 15(11), 234.
8
9
10 683 <https://doi.org/10.3390/ejihpe15110234>
11
12 684 Vroom, V., Porter, L., & Lawler, E. (2015). Expectancy theories. In *Organizational behavior 1* (pp.
13
14 685 94–113). Routledge.
15
16
17 686 Weick, K. E., & Sutcliffe, K. M. (2015). *Managing the unexpected: Sustained performance in a*
18
19 687 *complex world*. John Wiley & Sons.
20
21
22 688 Wong, L., Bliese, P., & McGurk, D. (2003). Military leadership: A context specific review. *The*
23
24 689 *Leadership Quarterly*, 14(6), 657–692. <https://doi.org/10.1016/j.leaqua.2003.08.001>
25
26 690 Yin, J., Jia, M., Ma, Z., & Liao, G. (2020). Team leader’s conflict management styles and innovation
27
28 691 performance in entrepreneurial teams. *International Journal of Conflict Management*, 31(3),
29
30 692 373–392. <https://doi.org/10.1108/IJCMA-09-2019-0168>
31
32
33 693
34
35
36
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