

Integrating PSI Theory into Entrepreneurial Life Design: A Self-Regulation-Based Approach to Enhancing Self-Efficacy

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ABSTRACT

This paper develops an experimentally actionable integration of Entrepreneurial Life Design (ELD) and Personality Systems Interactions (PSI) theory to strengthen self-efficacy in uncertain environments. Moving beyond purely conceptual accounts, we translate PSI theory into a set of testable intervention designs that can be implemented in experimental learning settings. We argue that self-efficacy emerges from affect-regulated system-switching processes and propose concrete prototyping formats to foster adaptive action, resilience, and decision-making. The paper contributes a micro-process model of self-regulation and outlines how it can be empirically explored and iteratively refined in innovation-driven educational environments.

Keywords: Entrepreneurial Life Design (ELD); Self-efficacy; PSI Theory; Action Control, Self-regulation; Affect Modulation; Entrepreneurial Mindset; Life Design; Entrepreneurship Education; Motivation Psychology; Personal Agency.

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1. INTRODUCTION

This paper develops a conceptually grounded but experimentally actionable framework that bridges psychological theory (PSI theory) and entrepreneurship education. In line with the experimental innovation logic of the *CERN IdeaSquare Journal of Experimental Innovation*, we translate this integration into testable intervention designs and prototyping formats that can be implemented and iteratively refined in educational settings. It develops an integrative model of self-regulation within Entrepreneurial Life Design (ELD), with the aim of informing future research and practice. Self-efficacy refers to “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). Among the various sources of self-efficacy, personal mastery experiences are compelling in strengthening this belief (Bandura, 1997). However, it remains insufficiently understood how such mastery experiences can be intentionally cultivated, especially in dynamic, uncertain contexts such as entrepreneurship or life design.

This paper addresses the following core question: *Which psychological processes enable individuals to steer themselves toward new goals, adapt effectively to*

challenges, and sustain their capacity for action, and how can these processes be systematically supported?

The central theoretical insight of this integration is that self-efficacy is not merely a cognitive belief but an emergent outcome of dynamic, affect-regulated action cycles. By demonstrating how PSI theory’s functional systems and affect modulation mechanisms operate within ELD, this paper provides a process-level explanation of how mastery experiences are generated, sustained, and translated into lasting personal agency - a dimension that existing models of self-efficacy and life design have thus far left underspecified.

We also address a critical paradox: while high self-efficacy typically promotes persistence, in VUCA contexts it may also lead to overconfidence and reduced adaptability (cf. Gielnik et al., 2020). PSI theory offers a resolution by illustrating how affect modulation and functional system switching determine whether self-efficacy becomes adaptive or maladaptive.

The remainder of the paper is structured as follows. Section 2 introduces the theoretical background, covering Entrepreneurial Life Design, self-efficacy, and PSI theory. Section 3 describes the methodological approach. Section 4 presents the conceptual contribution, including the integrative model and its theoretical propositions. Section 5 discusses the practical implications. Section 6



concludes with a summary of the main findings and directions for future research.

2. BACKGROUND AND MOTIVATION

Entrepreneurial Life Design: Shaping One's Life Path

Entrepreneurial Life Design (ELD) is an emerging approach that integrates entrepreneurship education with principles from life design, drawing on foundations in positive psychology, career counseling, and the Stanford Life Design Lab. ELD aims to empower individuals to proactively and resiliently shape their careers and lives through creative, purpose-driven action. It combines personal development, professional self-realization, and societal contribution into one coherent, future-oriented mindset (Liedtka & Ogilvie, 2011; Gottlieb & Spiller, 2020). Building on the conceptual groundwork laid out in the CIJ 2024 Special Issue on Career and Life Design (Maisch *et al.*, 2024; Gedeon & Kernbach, 2024; Wolf *et al.*, 2024), ELD is positioned as a dynamic bridge between innovation, resilience, and personal growth. Career counseling emphasizes biographical meaning-making and identity development (Savickas *et al.*, 2009), whereas positive psychology emphasizes strengths, self-efficacy, and well-being (Seligman & Csikszentmihalyi, 2000). The Life Design model by Burnett and Evans (2016) integrates design thinking tools to support intentional life prototyping. Complementarily, entrepreneurial thinking (particularly the effectuation logic (Saravathy, 2001)), frames uncertainty as a creative resource rather than a barrier.

A key characteristic of entrepreneurial thinking is the ability to act in environments characterized by volatility, uncertainty, complexity, and ambiguity (VUCA) (Bennett & Lemoine, 2014). Entrepreneurial individuals are distinguished by future orientation, willingness to learn, sensitivity to opportunities, and problem-solving competence (Neck *et al.*, 2017). Moreover, entrepreneurial action requires a high degree of ambiguity tolerance and risk-taking; skills increasingly regarded as key competencies in non-entrepreneurial contexts for meeting future challenges (Rae, 2007). Self-regulation is a prerequisite for defining long-term goals and consistently pursuing them, even amid setbacks and uncertainty (Duckworth *et al.*, 2007). In life and career design, this entails proactively responding to external demands and employing value-based methods to shape one's path. In ELD, self-regulation is a process that integrates emotional self-regulation, decision-making, and goal clarity (Billore *et al.*, 2023). The ability to self-reflect, set personal milestones, and prioritize thus belongs to the methodological core of entrepreneurial life design.

Despite many potential benefits, entrepreneurial life design is associated with specific challenges: financial

uncertainties, emotional burdens, isolation, and increased stress are common accompaniments (Uy *et al.*, 2013). At the same time, ELD opens up new opportunities, especially the possibility of experiencing autonomy, meaning, and design spaces. In times of rapid change, entrepreneurial individuals can, through reflective self-regulation, resilient attitudes, and creative strategies, not only shape their own lives but also initiate socially relevant innovations (Poech & Wolf, 2024). Our integration of PSI theory deepens this framework by introducing a psychological model of self-regulation that supports the development of entrepreneurial agency, adaptive action, and emotional resilience.

Self-Efficacy: A Key Competence for Entrepreneurial Self-Design

The concept of "self-efficacy" was developed by Albert Bandura within his social-cognitive learning theory in the 1970s. Unlike "self-concept," which refers retrospectively to past achievements, self-efficacy is prospective; it involves the belief in successfully mastering future challenges (Schunk & Mullen, 2012). In collaborative learning settings and communities of practice (Lave & Wenger, 1991), self-efficacy is trained through joint negotiation and shared reflection. Self-efficacy is domain-specific (Artino, 2012) and dynamic, changing in response to experiences and social feedback. In contrast to related concepts such as self-esteem or optimism, self-efficacy is an action-related expectation associated with specific goals and behaviors (Schwarzer & Jerusalem, 2002). In the context of entrepreneurial life design, it describes the confidence to independently and effectively shape decisions across one's professional and personal life.

Four approaches to foster and train self-efficacy have been researched and described. First, Bandura (1997) identifies mastery experiences and personal success experiences as the strongest sources of self-efficacy. In the ELD context, self-initiated projects, problem-solving, or learning progress are sources of sustainable self-efficacy development. The self-efficacy working group of the Future Skills Allianz of the Stifterverband (Senges *et al.*, 2025) describes how project-based work in real-world contexts creates experiences that not only promote skills but also foster the confidence to address future challenges effectively. Second, social models and the encouragement of feedback are central to developing self-efficacy, especially during professional (re)orientation phases or biographical transitions (Schunk & Mullen, 2012). ELD outcomes can therefore benefit from social embedding, for example, in peer groups or learning communities, where role models become tangible and spaces for resonance are created. Third, positive feedback, encouragement, and appreciative communication can significantly influence the development of self-efficacy, particularly when delivered by credible and trusted individuals (Bandura, 1997). In the ELD context, this form of affirmation is particularly effective in mentorship

networks and feedback systems: constructive words from a respected mentor not only strengthen motivation but also serve as social proof of one's potential. Fourth, emotions such as courage, confidence, and fear influence perceptions of one's efficacy. Stress can be paralyzing, primarily when ELD processes are associated with uncertainty, change, or social risk (Bandura, 2006). Self-efficacy thus serves as an emotional-cognitive buffer, enabling the pursuit of new professional paths with inner stability.

Studies show that self-efficacy expectation strongly predicts entrepreneurial intentions and actions (Zhao et al., 2005). It also enhances the willingness to take risks and view uncertainty as a resource (Chen et al., 1998). In the ELD context, it thus lays the foundation for an internal locus of control, which is particularly essential for life-design challenges such as navigating and shaping future trajectories amid uncertainty. Individuals with high self-efficacy take responsibility for their trajectories, seize opportunities, anticipate risks, and construct viable future visions (Zimmerman, 2000; Lent et al., 1994). These capabilities are fundamental to both the learning and practice dimensions of ELD: the focus is not on reactive adaptation, but on the deliberate creation of a coherent, resilient life model. Senge (2007), in his concept of Knowledge Entrepreneurship, describes how individuals with an entrepreneurial mindset do not merely consume knowledge but actively use it as a resource to initiate, guide, and reflect on innovation in their personal life contexts. ELD constitutes precisely such a context: a hybrid space where personal values, professional opportunities, and social responsibility intersect.

Both generic and domain-specific instruments are available to assess self-efficacy. In addition to the well-established General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995), more targeted tools such as the Academic Self-Efficacy Scale (Greco et al., 2022) are particularly relevant. The Future Skills Self-Efficacy Task Force (Senge et al., 2025) has developed a four-dimensional scale to measure self-regulation, collaboration, and digital efficacy across domains. This instrument is suitable for self-assessment and formative evaluation of learning processes in ELD contexts, enabling participants and educators to systematically observe and reflect on the development of self-efficacy over time and across practical learning scenarios.

PSI Theory as a Complementary Psychological Framework

Julius Kuhl's Personality Systems Interactions (PSI) theory explains the mental processes involved in effective action planning and execution (Kuhl, 2001). It shows how individuals pursue goals, adapt to novel challenges, learn from mistakes, and maintain agency. At its core, the theory explores the capacity to form long-term intentions, respond flexibly to change, and regulate emotions to support effective action.

According to PSI theory, four psychological systems are essential for regulating behavior. Intentional Memory (IM) stores deliberate intentions and supports sustained goal pursuit, fostering clarity of purpose and perseverance toward long-term goals. Intuitive Behavior Control (IBC) facilitates spontaneous, automatic actions that occur without conscious deliberation and is vital for rapid, adaptive responses in dynamic environments. Extension Memory (EM) processes holistic, integrated information and links present situations to past experiences, enabling reflective decision-making and the generation of creative solutions. Finally, the Object Recognition System (ORS) detects and processes discrepancies and errors through focused perception, thereby supporting detail-oriented analysis and error correction. Effective self-regulation depends on the flexible use of all four systems in response to the situation. For example, an individual engaged in life design may need to plan strategically (IM), react quickly to emerging opportunities (IBC), reflect on long-term goals (EM), and evaluate risks (ORS). Research shows that strong self-regulation skills better activate self-efficacy (Schunk & DiBenedetto, 2020), enabling individuals to take action or hold back, even when faced with internal doubts or external pressure, by managing attention, thoughts, and emotions (Baumann et al., 2005).

Affect is defined in PSI theory as a basic regulatory signal that modulates the activation and inhibition of psychological systems, thereby controlling cognitive processing, motivation, and behavior (Kuhl, 2001; Kuhl & Koole, 2004), rather than being conceptualized merely as emotional experience, affect functions as a fundamental control mechanism governing the accessibility and dominance of different functional systems, i.e., a dynamic interface between motivation, cognition, and behavior. Affect is conceptualized as valenced states that vary in both quality (positive vs. negative) and intensity (high vs. low activation), functioning as gating mechanisms for access to functional systems. Different affective states systematically facilitate or inhibit specific psychological systems (see Table 1). For example, high negative affect promotes activation of the Object Recognition System (ORS), leading to heightened vigilance, increased error sensitivity, and an analytical focus. In contrast, low positive affect facilitates the activation of Extension Memory (EM), supporting integrative thinking, creativity, and access to personal values. The ability to regulate affect thus directly determines which system is activated in a given situation, with far-reaching consequences for action planning, learning, and the development of self-efficacy.

Table 1. Overview of the four functional systems and their tasks

Affective State	Activated System (PSI Theory)	Function in ELD
Downregulated Positive Affect	Intentional Memory (IM)	Supports long-term planning in the intentional memory without triggering premature action
Downregulated Negative Affect	Extension Memory (EM)	Activates the extension memory and fosters relaxed, creative thinking.
High Positive Affect	Intuitive Behavior Control (IBC)	Triggers intuitive behavioral control, promoting rapid and fluid action but potentially impairing strategic planning.
High Negative Affect	Object Recognition System (ORS)	It engages the object recognition system, heightening error awareness and risk sensitivity yet inhibiting reflective, holistic thinking.

3. METHODOLOGY

This article adopts a conceptual–theoretical research design grounded in systematic theory integration. Rather than generating new empirical data, it synthesizes existing theoretical frameworks with the aim of producing an integrative model that can serve as a foundation for future empirical investigation. The methodological approach unfolded in four stages.

The first stage involved a targeted review and synthesis of the literature on self-efficacy, Entrepreneurial Life Design, and PSI theory. Relevant publications were identified through systematic searches of databases such as PsycINFO, Web of Science, and Google Scholar. Relevant search terms were applied in both English and German. Publications were included if they addressed one or more of the focal theoretical constructs and were available in English or German. Works published prior to 1990 were included selectively where they established foundational theoretical contributions. Grey literature was incorporated only where it formed part of established practitioner frameworks directly relevant to PSI theory, such as manuals associated with the Zurich Resource Model. The selection of sources was guided by theoretical relevance rather than exhaustive coverage, consistent with the study’s conceptual purpose. The analytical approach considered key constructs and mechanisms from each theoretical tradition, which were identified and fitted into the presented cross-framework model.

The second stage involved introducing PSI theory as a complementary psychological framework for ELD, identifying points of conceptual alignment and theoretical complementarity. The third stage developed the integrative conceptual model mapping PSI functional systems onto core ELD mechanisms, with particular attention to the micro-process level of affect regulation and system switching. The fourth and final stage derived the theoretical propositions and practical implications

intended to guide future empirical research and educational design.

4. CONCEPTUAL CONTRIBUTION: INTEGRATING PSI THEORY AND ELD

Theoretical Gap Addressed

This paper makes a conceptual contribution by integrating PSI theory into the ELD framework in order to provide a micro-process model of self-regulated action underlying self-efficacy. Existing models emphasize the importance of mastery experiences for developing personal agency (e.g., Bandura, 1997; Newman et al., 2019; Savickas et al., 2009). However, these approaches remain underspecified regarding the psychological mechanisms by which such mastery experiences can be systematically generated. In particular, the literature lacks a process-oriented explanation of how intentional actions can be deliberately designed, regulated, and executed to reliably produce self-efficacy-enhancing experiences. As recently noted by Wolf et al. (2024), ELD lacks explicit micro-level self-regulation mechanisms. The present integration addresses this gap by introducing PSI theory as a process model of affect-regulated action competence. PSI theory complements and extends existing self-regulation and entrepreneurial development models by providing a dynamic, mechanism-based account of action regulation. Whereas classical models focus primarily on cognitive phases such as goal setting, monitoring, and feedback (e.g., Bandura, Zimmerman), PSI theory specifies how different psychological functional systems must be activated at different stages of action planning and execution. Through affect-regulated switching among intentional memory, intuitive behavior control, extended memory, and object recognition, PSI theory explains how individuals flexibly move among planning, execution, reflection, and error correction, thereby adding a micro-process layer that explains how self-

regulation operates in real-time psychological dynamics. Beyond performance and persistence, PSI theory further extends existing models by introducing the concept of extension memory, which generates a sense of coherence and subjective meaningfulness. This connects action competence with existential dimensions of agency that remain largely absent from traditional entrepreneurship and self-regulation models. This setup advances the field by extending current understandings of self-efficacy (e.g., Newman et al., 2019) and life design theory (e.g., Savickas et al., 2009) with a self-regulation perspective that has not yet been systematically applied in this context.

In addition, the conceptual model is translated into a set of prototypical intervention formats that can be tested in experimental learning environments such as innovation labs, design studios, or challenge-based educational settings. These prototypes are designed to allow iterative refinement, observation of behavioral change, and evaluation of self-efficacy development under controlled yet practice-oriented conditions.

The PSI–ELD Integration: Core Mechanism

From a process perspective, PSI theory explains self-efficacy not as a direct outcome of belief, but as an emergent result of successful self-regulated action. Specifically, affect-regulated switching between functional systems enables individuals to: (1) translate intentions into concrete actions (intentional memory and intuitive behavior control); (2) flexibly adapt behavior under uncertainty (extension memory); and (3) reflect on errors and feedback without defensive disengagement (object recognition). Through this dynamic coordination of functional systems, individuals are more likely to generate mastery experiences, which constitute the primary psychological source of self-efficacy (Bandura, 1997). In this sense, PSI theory provides a micro-process explanation of how self-efficacy is built: not merely through cognitive belief formation, but through affect-regulated action cycles that enable successful goal pursuit, adaptive learning, and the subjective integration of action outcomes. This model also allows us to understand how strong self-efficacy beliefs may lead to maladaptive persistence when individuals remain fixated on intentional memory and fail to activate extension memory for context-sensitive reflection. PSI theory thereby reframes self-efficacy not as uniformly beneficial but as contingent on system switching and affect regulation, providing a mechanism for adaptively recalibrating overconfidence. This insight is particularly relevant in VUCA contexts, where the paradox of high self-efficacy leading to rigidity poses genuine risks for entrepreneurs and life designers alike.

Theoretical Propositions

To make our reasoning transparent and analytically grounded, we articulate three core propositions that

specify how PSI theory mechanisms operate within the ELD model and are intended to guide future empirical research. Taken together, these propositions shift the study of self-efficacy from a belief-centered perspective toward a dynamic process model of self-regulated action. Proposition 1: Functional system switching (see Figure 1) mediates the effects of ELD interventions on self-efficacy. Interventions such as reflection, embodiment, or journaling influence self-efficacy not directly, but by enabling adaptive transitions among all four functional systems. Proposition 2: High positive affect boosts intuitive action but requires extension memory (EM) activation for long-term reflection. While positive affect facilitates intuitive engagement and action, sustained learning and goal alignment depend on integration via EM, particularly in complex or meaningful tasks. Proposition 3: Affect regulation moderates self-efficacy under uncertainty. In VUCA conditions, individuals' ability to regulate negative affect determines whether self-efficacy leads to flexible adaptation or rigid overconfidence.

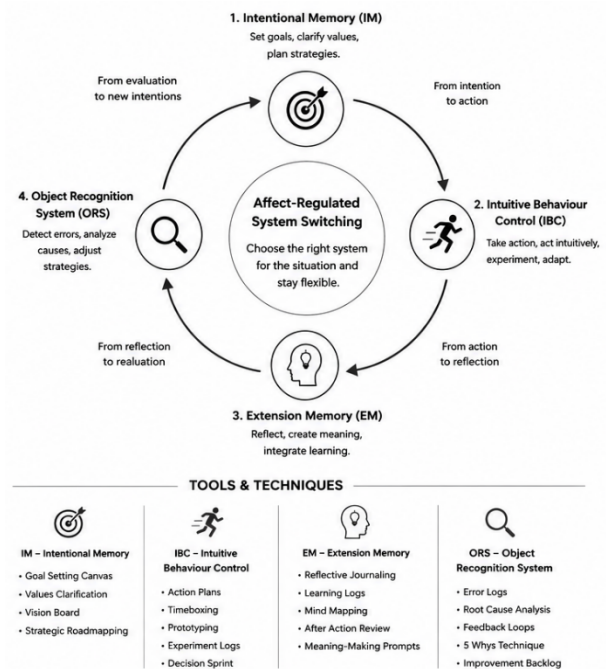


Fig. 1. PSI Functional System Switching.

Building on these propositions, we derive a set of design principles for experimental educational interventions: (1) interventions should explicitly target system-switching competence rather than isolated skills; (2) affect modulation should be deliberately induced and observed as part of the learning design; (3) learning environments should include structured cycles of action, reflection, and recalibration to enable the emergence of mastery experiences.

5. DISCUSSION: PRACTICAL IMPLICATIONS

Supporting Functional System Switching in Educational Settings

Particularly in experimental environments such as CERN IdeaSquare, where interdisciplinary teams work on open-ended challenges under uncertainty, the PSI-ELD integration offers a structured approach to observing and enhancing self-regulation in action. These environments provide a natural testing ground for studying how affect-regulated system switching unfolds in real-time innovation processes. Effective action regulation arises when individuals can flexibly switch between the functional systems described in PSI theory, namely, the functional system switching competence. ELD workshops grounded in PSI theory help participants understand and train in activating the four functional systems (Storch, 2017; Storch *et al.*, 2016). Workshops that help participants clarify long-term goals and break them down into achievable steps can strengthen Intentional Memory (IM), thereby enhancing planning and goal persistence. Creative relaxation exercises such as guided imagery or free writing activate Extension Memory (EM) and support integrative thinking and problem-solving. To facilitate transitions from intention to action and support fluid decision-making, self-motivation methods, such as improvisation exercises, can be employed to engage Intuitive Behavior Control (IBC). Finally, structured feedback sessions and critical reflection exercises strengthen the Object Recognition System (ORS), fostering analytical thinking and error detection without triggering defensive reactions. To support system switching more broadly, a variety of methods can be employed, including body-based techniques such as movement and embodiment, ritual planning, breathwork, and emotional regulation and cognitive restructuring (Storch & Weber, 2018; Storch, 2017; Koole & Kuhl, 2008). Affect regulation techniques such as meditation, music, or mindfulness exercises can specifically target Extension Memory and build emotional resilience (Eilers, 2022). Celebrating micro-successes strengthens both Intentional Memory and Intuitive Behavior Control: noticing and amplifying small wins helps solidify effective action patterns and reinforces a sense of agency, with the ABC framework from the Zurich Resource Model providing a structured approach (Storch *et al.*, 2022). Reflection tools such as journaling or self-dialogue help resolve inner conflicts, clarify personal drivers, and thereby enhance self-efficacy (Storch, 2017; Storch *et al.*, 2022). The deliberate alternation and combination of these techniques reinforce individuals' self-regulatory capacity and belief in their effectiveness. The development and integration of these interventions into participants' daily routines may enhance the practical applicability of PSI theory within ELD; from a theoretical perspective, these tools are expected to

support the development of self-efficacy by facilitating affect regulation and functional system switching, enabling more adaptive action under conditions of complexity and uncertainty (see Figure 2).



Fig. 2. PSI Theory as Driver of Self-Efficacy in Entrepreneurial Life Design

Positioning Within the Existing Literature

The article advances current debates on self-efficacy and life design theory by offering a self-regulation-focused extension of existing models. While Newman *et al.* (2019) provide a thorough overview of the antecedents and outcomes of self-efficacy, their framework does not address the psychological mechanisms underlying the cultivation of self-efficacy in educational settings. Our integration of PSI theory addresses this gap by detailing how functional system switching and affect regulation enable mastery experiences and sustain self-efficacy under conditions of uncertainty. Similarly, life design theory, as outlined by Savickas *et al.* (2009), emphasizes narrative construction and biographical reflexivity as tools for career development, but offers limited guidance on the affective and neuropsychological foundations of action regulation. By incorporating PSI theory into the ELD framework, we contribute a complementary micro-level perspective that explains how individuals translate intention into practical action, bridging narrative identity with embodied, affect-regulated behavior. PSI theory posits that coordinating multiple mental functions - such as goal orientation, intuition, reflection, and critical analysis - underpins effective self-regulation. The ability to flexibly switch between these systems depending on the situation determines whether individuals can persist through setbacks, navigate uncertainty, and align their actions with personal values and long-term goals. The paper further demonstrates that affect regulation is a

central driver of action competence: individuals who can modulate their emotional states are better able to activate the mental systems most conducive to effective behavior. This underscores the importance of emotional intelligence and embodiment not as peripheral “soft skills,” but as essential components of entrepreneurial learning and personal agency.

6. CONCLUSION

This paper offers a conceptual contribution by integrating PSI theory into the Entrepreneurial Life Design (ELD) framework and proposes a self-regulation-based approach to enhancing self-efficacy. The central theoretical insight is that self-efficacy is not a static belief that individuals either possess or lack, but rather an emergent property of dynamic, affect-regulated action cycles: when individuals can flexibly switch among PSI theory’s four functional systems (intentional memory, intuitive behavior control, extension memory, and object recognition) they are more likely to generate the mastery experiences that form the psychological foundation of self-efficacy. This process-level account bridges the gap between macro-level constructs in ELD and the micro-level psychological mechanisms through which agency is actually built and sustained.

The paper demonstrates that successful action competence does not arise from isolated traits or knowledge alone, but from the dynamic and adaptive regulation of psychological systems that support intentional, flexible, and emotionally grounded decision-making. It advances current debates by offering a self-regulation-focused extension of existing models, detailing how functional system switching and affect regulation enable mastery experiences and sustain self-efficacy under conditions of uncertainty. It also contributes to a reframing of self-efficacy as a dynamic capacity whose adaptiveness depends on underlying self-regulatory processes, illuminating the paradox of overconfidence in VUCA contexts and demonstrating how PSI theory provides a mechanism for adaptively recalibrating confidence. Building on this theoretical integration, the article outlines practical interventions, from mindfulness and body-centered techniques to reflective goal-setting and structured peer feedback, that educators and program designers can incorporate into ELD learning formats to strengthen learners’ self-efficacy and build their psychological resilience and adaptive competence in complex, volatile environments.

By translating psychological theory into experimentally testable intervention designs, this work contributes to the broader field of experimental innovation. It demonstrates how human self-regulation can be treated not only as a theoretical construct but as a design variable within innovation systems, thereby opening new pathways for integrating psychological depth into innovation practice.

LIMITATIONS AND FUTURE RESEARCH

This article presents a conceptual integration of PSI theory and Entrepreneurial Life Design, but does not include empirical data. Future research should empirically test the effectiveness of PSI-based interventions in real-life entrepreneurial education settings. In particular, longitudinal studies could explore how the development of system-switching competence affects resilience and self-efficacy over time. Additionally, comparative studies could analyze how PSI-based training differs in impact from traditional cognitive-behavioral coaching methods. While the present work is conceptual, it lays a foundation for empirical research by identifying psychological mechanisms (such as functional system switching and affect regulation) that can be operationalized and tested in future studies.

A key avenue for future inquiry is to examine how functional system switching affects the development of self-efficacy in educational settings, and in particular, whether training learners in this competence leads to measurable increases in self-efficacy over time, especially compared to standard entrepreneurship programs that lack such a focus. The role of affect regulation warrants parallel exploration: regulating emotional states may significantly influence learners’ capacity to persist, adapt, and maintain a sense of agency, especially in conditions of uncertainty. This line of inquiry could clarify whether affect regulation moderates the relationship between self-efficacy and adaptive action in volatile contexts.

A next step is to test how different PSI-informed interventions activate specific functional systems in practice. This would allow a more precise understanding of which interventions are effective for which types of learners and contexts. Beyond these overall effects, a finer-grained question concerns the mediating role of functional system switching competence: PSI theory suggests that intervention type alone is insufficient to explain long-term outcomes, and empirical work is therefore needed to test whether growing switching competence mediates the relationship between PSI-informed interventions and sustained action competence over time.

Moreover, future research should move beyond general exploration toward experimentally testable intervention designs. Specifically, PSI-based system-switching training can be implemented as a structured intervention and compared against baseline conditions in controlled educational settings. For example, participants could be assigned to experimental groups receiving targeted affect-regulation and system-switching exercises, while control groups follow standard entrepreneurship or life design curricula.

Such designs make it possible to examine boundary conditions more groundedly, for example, by observing how differences in self-awareness or emotional

regulation play out during the intervention itself. These factors can be explicitly modeled as moderators within experimental setups. To capture both outcomes and underlying mechanisms, future studies should combine quantitative pre–post measurements (e.g., self-efficacy scales) with qualitative and process-oriented data (e.g., reflection journals, behavioral observation, or real-time tracking of decision processes). Longitudinal and iterative designs are particularly promising, as they enable the observation of how repeated mastery experiences and system-switching competence co-evolve over time. This brings the model closer to how innovation actually unfolds: through testing, adjustment, and learning in real situations rather than purely theoretical refinement.

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CONFLICTS OF INTEREST

None to declare.

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