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Career Self-Efficacy in Student Career Development: An Integrative Review of Developmental Mechanisms, Mediators and Moderators

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ABSTRACT Career self-efficacy has become one of the most influential constructs in career development research; however, existing evidence remains fragmented, with previous studies primarily examining isolated predictors, mediating functions, and contextual influences rather than providing an integrated explanation of how career self-efficacy develops and contributes to students' career development. This study systematically reviews empirical research published between 1996 and 2026 to develop an integrated understanding of how career self-efficacy develops and contributes to students' career development. Following the PRISMA framework, 52 empirical studies were identified and synthesised using a thematic qualitative evidence synthesis approach. The findings reveal that career self-efficacy develops through three interconnected mechanisms: career self-understanding, personal agency, and social learning and support. The review further demonstrates that career self-efficacy functions as the key psychological mechanism linking personal, educational and contextual resources to career exploration, career decision-making, employability and sustained career behaviour. In addition, three categories of boundary conditions - psychological readiness, educational alignment and social and cultural environments - were identified as influencing the strength of these relationships. Based on these findings, the review develops an integrated conceptual framework explaining how developmental mechanisms, mediating functions, and contextual boundary conditions collectively shape students' career development. By integrating fragmented empirical evidence into a coherent process-oriented framework, the review extends the application of Social Cognitive Career Theory by conceptualising career self-efficacy as a dynamic developmental capability rather than a static psychological belief. The findings also provide evidence-informed guidance for educators, career practitioners, institutional leaders, and policymakers seeking to strengthen students' career readiness and successful school-to-work transitions.

Keywords: Career self-efficacy; Career development; Career decision-making; Social Cognitive Career Theory; Employability; Career readiness

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INTRODUCTION

Preparing students for increasingly complex and uncertain labour markets has become one of the principal challenges facing contemporary education systems. Beyond academic achievement and technical competence, students must develop the confidence to explore career opportunities, make informed career decisions, adapt to changing employment conditions and successfully transition from education to work. This confidence is conceptualised as career self-efficacy, referring to individuals' beliefs in their capability to successfully perform career-related tasks and make effective career decisions (Bandura 1997; Betz & Hackett, 1981; Taylor & Betz, 1983). Since its introduction into vocational psychology, career self-efficacy has become one of the most influential psychological constructs for explaining career exploration, vocational interests, career decision-making, career adaptability and career persistence (Brown et al., 2000; Betz et al., 1996; Lent & Hackett, 1987). Research consistently demonstrates that students with stronger career self-efficacy are more likely to engage in career planning, seek occupational information, cope with career-related uncertainty and pursue challenging educational and professional goals (Blustein, 1989; Cheung & Jin, 2016; Rogers & Creed, 2011).

The theoretical importance of career self-efficacy increased substantially with the development of Social Cognitive Career Theory (SCCT), which positions self-efficacy as a central cognitive mechanism linking learning experiences with career interests, career goals, career choices and career-related behaviour (Lent & Hackett, 1987; Lent & Brown, 2019). Building on Bandura's (1986, 1997) social cognitive theory, SCCT proposes that career development emerges through reciprocal interactions among personal characteristics, behavioural experiences and environmental influences. Consequently, career self-efficacy is no longer viewed simply as an individual psychological characteristic but as a dynamic capability that develops through mastery experiences, social persuasion, vicarious learning and continuous interactions with educational and social environments (Bandura, 1986; Lent & Brown, 2019). This perspective has encouraged researchers to investigate not only whether career self-efficacy predicts career outcomes but also how educational experiences, family support, mentoring relationships and institutional environments contribute to its development.

Over the past three decades, empirical research on career self-efficacy has expanded rapidly across different educational settings and student populations. Previous studies have examined a wide variety of antecedents, including vocational identity, resilience, employability, personality characteristics, emotional intelligence, career interventions, mentoring, parental support, teacher support and educational experiences (Cheung & Jin, 2016; Dahling & Thompson, 2013; Olle & Fouad, 2015; Fouad et al., 2010; Glessner et al., 2017; Huang, 2015; Kim et al., 2016; Koumoundourou et al., 2011). Similarly, career self-efficacy has been associated with numerous career-related outcomes, including career exploration, career decision-making, vocational identity, career adaptability, employability, career persistence and career satisfaction (Komarraju et al., 2014; Restubog et al., 2010; Rogers & Creed, 2011; Zhao et al., 2012). More recently, research has increasingly adopted mediation and moderation models, positioning career self-efficacy as the mechanism through which personal resources, educational experiences and contextual support influence career development rather than treating it solely as either an independent or dependent variable (Cheung & Jin, 2016; Jadidian & Duffy, 2012; Metheny & McWhirter, 2013; Restubog et al., 2010).

Despite this considerable body of research, the literature remains fragmented in several important respects. Most empirical studies have examined individual antecedents or outcomes of career self-efficacy, focusing on variables such as vocational identity, resilience, employability, mentoring, family support or educational interventions independently rather than considering how these factors interact within broader developmental processes (Olle & Fouad, 2015; Ginevra et al., 2015; Huang, 2015; Jadidian & Duffy, 2012; Kim et al., 2014; Koumoundourou et al., 2011; Metheny &

McWhirter, 2013; Rogers & Creed, 2011). Likewise, although mediation and moderation models have become increasingly common, relatively few studies have attempted to integrate these findings into a coherent conceptual explanation of how career self-efficacy develops, how it functions as a psychological mechanism linking personal and contextual resources to career outcomes, and under what conditions its influence is strengthened or constrained (Cheung & Jin, 2016; Restubog et al., 2010; Zhao et al., 2012). Consequently, the accumulated evidence remains dispersed across numerous empirical studies, making it difficult to develop a comprehensive understanding of career self-efficacy or translate existing knowledge into effective educational practice.

Addressing this limitation is particularly important as educational institutions increasingly prioritise graduate employability, career readiness and successful transitions into dynamic labour markets. Previous research consistently demonstrates that educational interventions, career courses, mentoring programmes, counselling services and supportive learning environments strengthen career self-efficacy and contribute to more positive career exploration, career decision-making and employability outcomes (Fouad et al., 2010; Glessner et al., 2017; Grier-Reed & Skaar, 2010; Reese & Miller, 2006; Renn et al., 2014). At the same time, evidence suggests that the effectiveness of these interventions depends on the psychological and contextual mechanisms through which students interpret educational experiences, develop personal agency and utilise support from significant others (Ginevra et al., 2015; Nadermann & Eissenstat, 2018). A more integrated understanding of these mechanisms therefore has important implications for designing career education, guidance programmes and institutional support systems that effectively strengthen students' confidence in managing educational and occupational transitions.

Accordingly, this study conducts a systematic literature review of empirical research published between 1996 and 2026 to provide an integrated understanding of career self-efficacy among students in secondary and higher education. Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework (Page et al., 2021), the review synthesises evidence from 52 empirical studies to examine three interrelated questions: how career self-efficacy develops, how it functions within students' career development, and under what conditions its influence is strengthened or constrained. By integrating diverse empirical findings into three higher-order developmental mechanisms, three mediating functions and three categories of contextual boundary conditions, this review moves beyond cataloguing antecedents and outcomes to provide an evidence-based conceptual framework of career self-efficacy. In doing so, it advances a more process-oriented understanding of career self-efficacy, extends the application of Social Cognitive Career Theory within educational contexts, and provides a stronger theoretical foundation for future research, educational interventions and career development practice (Bandura 1997; Lent & Brown, 2019).

METHODOLOGY

Research Design

This study employed a systematic literature review to synthesise empirical evidence on career self-efficacy among students and to develop an integrated conceptual understanding of how career self-efficacy develops, functions within career development processes, and contributes to career-related outcomes. The review followed the PRISMA framework (Page et al., 2021), which provides a transparent and replicable procedure for identifying, screening, assessing and selecting relevant studies. Consistent with established systematic review methodologies (Tranfield et al., 2003), the objective was not simply to summarise previous research but to identify recurring patterns across studies and synthesise fragmented empirical evidence into a coherent conceptual explanation.

A qualitative evidence synthesis approach was adopted because the existing literature is characterised by considerable variation in research designs, educational settings, theoretical

perspectives and measurement instruments. Consequently, statistical meta-analysis was neither appropriate nor aligned with the objectives of the review. Instead, the analysis focused on identifying common developmental processes and explanatory mechanisms that consistently emerged across different empirical contexts.

Literature Search and Study Selection

The review focused on studies examining career self-efficacy and closely related constructs, particularly career decision-making self-efficacy, among students in secondary and higher education. The search covered the period from 1996 to 2026, encompassing three decades during which career self-efficacy became firmly established within broader career development literature. The literature search was conducted across four major academic databases widely recognised in education, psychology and the social sciences: Scopus, Web of Science, Emerald Insight and EBSCO. Boolean operators were used to combine keywords related to the focal construct, educational setting and student population. Typical search expressions included combinations such as "career self-efficacy" OR "career decision-making self-efficacy" together with "students" and educational descriptors including "secondary school", "high school", "college", "university" and "undergraduate". The search was limited to peer-reviewed journal articles published in English.

To minimise publication bias and improve the comprehensiveness of the review, the database searches were supplemented through backward citation searches, forward citation tracking and manual examination of leading journals specialising in career development and vocational psychology. These complementary search procedures helped identify influential studies that were not retrieved through the initial database searches.

The screening process followed the four stages recommended by PRISMA: identification, screening, eligibility and inclusion. Duplicate records were removed before titles and abstracts were independently assessed for relevance. The remaining articles were then examined in full text using predefined eligibility criteria. Studies were retained when they empirically investigated career self-efficacy or career decision-making self-efficacy as a central construct among students enrolled in secondary schools, colleges or universities. Only studies reporting original empirical findings using quantitative, qualitative or mixed-method designs were included. Studies focusing exclusively on general self-efficacy without an explicit career dimension, together with dissertations, conference proceedings, books and technical reports, were excluded to ensure conceptual consistency and maintain the quality of the evidence base.

Following this systematic selection process, fifty-two empirical studies published between 1996 and 2026 were retained for detailed analysis. Collectively, these studies represent diverse educational systems, cultural contexts and student populations while sharing a common focus on the development and consequences of career self-efficacy.

Data Extraction and Analysis

Data from each study were extracted using a structured coding framework developed specifically for this review. The coding captured descriptive characteristics including publication year, journal, country, educational level, sample characteristics, research design, theoretical framework and measurement instruments. In addition, the substantive role of career self-efficacy within each study was recorded, including whether it was conceptualised primarily as an antecedent, outcome, mediator or moderator within the proposed research model.

The analytical process proceeded in three iterative stages. The first stage consisted of a descriptive synthesis that characterised the development of the evidence base by examining publication trends, journal outlets, educational contexts, methodological approaches and measurement practices. This analysis established the overall profile of research on career self-efficacy and highlighted important

methodological characteristics of the field.

The second stage involved thematic synthesis using an iterative constant-comparative approach. Rather than summarising individual variables independently, conceptually similar constructs were compared across studies and progressively integrated into broader analytical categories. Through repeated comparison and refinement, the diverse antecedents identified in the literature converged into three higher-order developmental mechanisms: career self-understanding, personal agency, and social learning and support. Similarly, studies investigating indirect relationships were synthesised to identify the principal mediating functions performed by career self-efficacy, while variables influencing the strength of these relationships were integrated into broader categories representing psychological, educational and contextual boundary conditions.

The final stage involved conceptual integration. After the higher-order themes had been established, relationships among the developmental mechanisms, mediating functions and contextual conditions were examined across the complete body of evidence. This process resulted in the development of an integrated conceptual framework that synthesises the recurring empirical patterns identified across the fifty-two reviewed studies. Rather than proposing a new theory, the framework provides an evidence-based representation of how career self-efficacy develops, functions as a psychological mechanism linking personal and contextual resources to career outcomes and operates within identifiable boundary conditions. This integrative synthesis constitutes the principal contribution of the review by bringing together previously fragmented findings into a coherent conceptual explanation of students' career self-efficacy.

FINDINGS

The analysis of the literature revealed that career self-efficacy occupies multiple roles within students' career development processes (Cheung et al., 2016; Jadidian & Duffy, 2012; Metheny & McWhirter, 2013; Restubog et al., 2010). Across the literature, career self-efficacy was examined not only as an outcome shaped by personal, educational and contextual influences (Huang, 2015; Koumoundourou et al., 2011; Lapan et al., 2003; Rogers & Creed, 2011; Suh & Flores, 2017). It was also examined as a psychological mechanism through which these influences affected career exploration, career decision-making, vocational identity, career satisfaction and other career-related behaviours (Cheung et al., 2016; Jadidian & Duffy, 2012; Komarraju et al., 2014; Restubog et al., 2010; Zhao et al., 2012). A smaller but growing body of research further examined the conditions under which these relationships varied, positioning career self-efficacy within moderated models that considered psychological characteristics, educational environments and sociodemographic circumstances (Kim et al., 2016; Rivera et al., 2007).

The findings are organised into four sections. First, the profile of the reviewed literature is examined in terms of publication patterns, research contexts, student populations, methodological approaches and measurement practices. Second, the analysis synthesises the principal mechanisms through which career self-efficacy develops by integrating the diverse antecedents identified across the literature into broader developmental pathways. Third, it examines evidence demonstrating how career self-efficacy mediates the relationship between personal or contextual resources and a range of career-related outcomes. Fourth, it considers the moderators and boundary conditions that strengthen, weaken or alter these relationships across different student populations and educational contexts. The chapter concludes by integrating these findings into a conceptual synthesis of the role of career self-efficacy in students' career development.

Overview of the Evidence Base

The final review comprised 52 empirical studies published between 1996 and 2026, representing three decades of research on career self-efficacy among students in secondary and higher education. The evidence demonstrates that career self-efficacy has become an established area of educational

and vocational research, with publication activity increasing substantially during the last fifteen years. The findings indicates that there is a growing research interest in understanding how students develop confidence in making career-related decisions and manage educational-to-work transitions through the application of Social Cognitive Career Theory and related career-development perspectives (Fouad et al., 2010; Glessner et al., 2017; Kim et al., 2014; Rogers & Creed, 2011).

The literature is concentrated within a relatively small group of specialist journals. Four journals - Journal of Career Development, Journal of Vocational Behavior, Journal of Career Assessment and The Career Development Quarterly - accounted for approximately 71% of the reviewed publications (Table 1). This concentration suggests that research on career self-efficacy has largely evolved within vocational psychology and career development, while comparatively less attention has been devoted to the construct in the broader higher education, educational management and educational policy literature. Consequently, although career self-efficacy has become a well-established concept, its application remains comparatively fragmented across the wider educational research landscape.

Table 1: List of journals and number of articles related to career self-efficacy of the students (1996 –2026)

No		No of papers
1	Career Development International	2
2	Journal of Career Assessment	14
3	Journal of Career Development	6
4	Journal of Counselling & Development	2
5	Journal of Counselling & Psychology	2
6	Journal of Hospitality, Leisure, Sport & Tourism Education	2
7	Journal of Science Education and Technology	1
8	Journal of Vocational Behavior	7
9	Leadership Quarterly	2
10	Personality and Individual Differences	2
11	Research in Higher Education	1
12	The Career Development Quarterly	11

The research was conducted predominantly with university and college students, particularly during periods of career exploration, academic major selection and transition to employment (Fouad et al., 2010; Huang, 2015; Kim et al., 2014). Comparatively fewer studies investigated secondary-school students, where research focused primarily on career aspirations, vocational identity, career planning and educational transitions (Rottinghaus et al., 2009; Rogers & Creed, 2011). Although the evidence spans different educational stages and national contexts, the literature remains heavily weighted towards higher education populations, indicating that considerably less is known about the development of career self-efficacy during adolescence and earlier stages of career development. Methodologically, the evidence base is characterised by a strong reliance on quantitative survey research. Half of the reviewed studies employed quantitative methods, while 27% adopted mixed-method approaches and 19% used qualitative designs. Only two studies were conceptual contributions (Table 2). Most empirical investigations relied on cross-sectional questionnaire data analysed using regression analysis, path analysis or structural equation modelling, whereas longitudinal and intervention studies were comparatively uncommon (Cheung et al., 2016; Suh & Flores, 2017). This methodological profile has enabled researchers to identify a wide range of antecedents, mediators and outcomes associated with career self-efficacy but has provided comparatively less evidence regarding the developmental processes through which career self-efficacy is established, strengthened and sustained over time.

Table 2.
Research methods used for career self-efficacy

Research methods		No of papers	% of No
Qualitative	Interviews		
	Observations		
	Policy documents, secondary data	10	19%
	Case study, interviews		
Quantitative	Longitudinal interviews		
	Survey, questionnaire	26	50%
	Secondary data		
Mixed	Survey and interviews		
	Documental search from international agencies	13	25%
	Survey, secondary data		
	Case study		
Conceptual papers		3	6%
Total		52	100%

A further characteristic of the literature is the relatively consistent use of measurement instruments. The majority of studies assessed career self-efficacy using the Career Decision-Making Self-Efficacy Scale (CDMSE) developed by [Taylor and Betz \(1983\)](#) or its short form developed by [Betz et al. \(1996\)](#), which remains the most widely adopted instrument for assessing students' confidence in performing career decision-making tasks. Several studies also employed derivative or context-specific measures, including the Career Decision-Making Difficulties Questionnaire ([Gati et al., 1996](#)), the Chinese Career Self-Efficacy Inventory ([Tien, 2007](#); [Tien & Wang, 2009](#)), the Career Confidence Scale ([O'Brien & Fassinger, 1993](#)), the Medical Career Self-Efficacy Scale ([Speight et al., 1995](#)) and occupational self-efficacy measures developed for specific educational and vocational contexts. While these instruments share a common theoretical foundation, they operationalise different dimensions of career efficacy, making direct comparison across studies more challenging and highlighting the conceptual diversity that has emerged within the field.

Overall, the literature demonstrates a mature but methodologically concentrated evidence base. Research has expanded considerably and has consistently shown that career self-efficacy is associated with a broad range of educational and career-related outcomes across different student populations and educational contexts. At the same time, the evidence reveals a notable imbalance in research emphasis. Most studies have concentrated on identifying which factors influence career self-efficacy and which outcomes it predicts, whereas comparatively fewer have examined how career self-efficacy develops, how it functions as a mediating mechanism, and under what conditions its influence becomes stronger or weaker. Addressing these questions forms the central analytical contribution of the present review and provides the foundation for the subsequent synthesis of developmental mechanisms, mediating processes and boundary conditions.

Mechanisms through which Career Self-Efficacy develops

The literature indicates that career self-efficacy does not emerge automatically from individual characteristics or educational experiences. Instead, students develop confidence in managing career-related tasks through a series of psychological and social processes that enable them to interpret personal capabilities, exercise greater control over career decisions and utilise resources available within their educational and social environments ([Fouad et al., 2010](#); [Huang, 2015](#); [Kim et al., 2014](#)). Although the research examined a wide range of antecedent variables, these antecedents

consistently converged into three broader developmental mechanisms that explain how students construct confidence in managing career-related tasks (Cheung et al., 2016; Jadidian & Duffy, 2012). Across different educational settings, career self-efficacy was strengthened when students developed a clearer understanding of themselves and future career opportunities, exercised greater personal agency in managing career decisions and interpreted support from significant others as evidence that career goals were attainable (Metheny & McWhirter, 2013; Nadermann & Eissenstat, 2018).

The first mechanism concerns the development of students' understanding of themselves in relation to future educational and occupational opportunities (Lewis et al., 2018; Nauta & Kahn, 2007). Across the literature, career self-efficacy consistently increased when students acquired greater clarity regarding their interests, abilities, values and potential career pathways (Huang, 2015; Koumoundourou et al., 2011). Rather than reflecting stable personality traits, career confidence developed through interpretive processes that enabled students to connect self-knowledge with occupational opportunities and future career aspirations.

Vocational identity consistently emerged as one of the strongest mechanisms supporting the development of career self-understanding and career self-efficacy. Students who developed clearer vocational identities reported greater confidence in making educational and occupational decisions because they were better able to connect their interests, values and abilities with future career opportunities (Koumoundourou et al., 2011; Nauta & Kahn, 2007). Similarly, meaning in life strengthened career self-efficacy by enabling students to integrate personal values and cultural identity into coherent career aspirations (Lewis et al., 2018). Although these studies examined different educational settings and identity dimensions, they converge on a common conclusion: career self-efficacy develops not simply through greater self-awareness but through the construction of a coherent understanding of oneself in relation to future careers.

Career-related knowledge represents a second important dimension of career self-understanding. Across the literature, students reported greater confidence in making career decisions when they understood how their knowledge, abilities and educational experiences could be applied to future occupations (Fouad et al., 2010; Huang, 2015; Reese & Miller, 2006). Perceived internal employability was particularly important in this process, as students who recognised the relevance of their competencies to future employment demonstrated stronger career self-efficacy (Huang, 2015). Similarly, career courses, counselling interventions and structured career-development programmes consistently strengthened career self-efficacy by improving students' understanding of occupational opportunities, career planning strategies and decision-making processes (Grier-Reed & Skaar, 2010; Glessner et al., 2017; Reese & Miller, 2006). Although these interventions differed in their educational approaches, they shared a common mechanism: they helped students interpret career-related information, reduce uncertainty and develop greater confidence in navigating educational and occupational choices.

Students experiencing dysfunctional career thoughts, persistent career indecision or difficulties integrating self-knowledge with occupational information consistently reported lower confidence in making career decisions (Gati & Asulin-Peretz, 2011; Kim et al., 2016). Longitudinal evidence further demonstrated that increases in dysfunctional career thinking during the transition from university to employment were associated with subsequent declines in career decision-making self-efficacy (Kim et al., 2014), suggesting that career confidence is not a stable personal characteristic but remains sensitive to students' interpretations of their educational and career experiences. Collectively, these findings indicate that career self-efficacy depends not simply on access to career information but on students' ability to construct a coherent understanding of themselves in relation to future educational and occupational opportunities. Career self-understanding therefore represents an important interpretive mechanism through which educational experiences are translated into confidence about future career decisions.

A second mechanism concerns the development of personal agency - students' belief that career outcomes can be influenced through their own actions rather than determined primarily by external circumstances (Jadidian & Duffy, 2012). Across the literature, career self-efficacy consistently increased when students perceived themselves as active participants in shaping their educational and occupational futures. Variables such as work volition, work locus of control, self-regulation, planned happenstance and career engagement contributed to career self-efficacy because they strengthened students' sense of personal control, encouraged proactive behaviour and reinforced confidence in their ability to manage career-related challenges (Suh & Flores, 2017).

One important dimension of personal agency concerns students' perceptions of control over future career outcomes. Jadidian and Duffy (2012) demonstrated that work locus of control partially mediated the relationship between work volition and career self-efficacy. Students who believed that career outcomes were influenced primarily by their own actions reported greater confidence in making career decisions. Similarly, Suh and Flores (2017) found that self-regulation mediated the relationship between relative deprivation and career self-efficacy among Korean female university students. Students who effectively regulated their behaviour and maintained goal-directed action despite perceived disadvantage were more likely to preserve confidence in their career capabilities. The literature further suggests that personal agency develops through students' capacity to respond constructively to career uncertainty. Planned happenstance skills - including curiosity, persistence, flexibility, optimism and risk-taking - consistently strengthened career self-efficacy by encouraging students to interpret unexpected career opportunities as manageable rather than threatening (Kim et al., 2014). Rather than eliminating uncertainty, these skills increased students' confidence in their ability to respond effectively to changing educational and labour-market circumstances. Consequently, career self-efficacy developed because students viewed uncertainty as an opportunity for learning and adaptation rather than as a barrier to career decision-making.

Career exploration represents the behavioural expression of personal agency. Across the literature, students who actively explored educational and occupational opportunities consistently demonstrated stronger career self-efficacy because exploration generated mastery experiences that reinforced confidence in their capabilities. Early evidence showed positive relationships between career self-efficacy, goal-directedness and exploratory behaviour, indicating that confidence develops through active engagement with career-related tasks rather than through knowledge acquisition alone. This reciprocal relationship closely reflects Bandura's proposition that mastery experiences constitute the strongest source of efficacy beliefs, as successful career exploration provides direct evidence of students' ability to manage educational and occupational decisions (Jadidian & Duffy, 2012). Overall, the literature suggest that personal agency strengthens career self-efficacy by enabling students to transform understanding into purposeful action, maintain confidence during uncertainty and accumulate successful experiences that reinforce beliefs in their own capabilities.

The third mechanism concerns the influence of social learning and support on the development of career self-efficacy. Although career self-efficacy is frequently conceptualised as an individual psychological belief, the literature consistently indicates that confidence develops within social environments where students receive encouragement, career-related information, behavioural role models and opportunities to engage in career-relevant experiences (Cheung et al., 2016; Lapan et al., 2003; Wright et al., 2014). Parents, teachers, mentors, peers and professional networks all contribute to career self-efficacy by reinforcing students' confidence in their capabilities and supporting their educational and occupational decision-making (Ginevra et al., 2015; Metheny & McWhirter, 2013; Renn et al., 2014). However, the research also suggests that the effectiveness of social support depends less on its availability than on how students perceive, interpret and utilise these resources (Olle & Fouad, 2015).

Family relationships emerged as one of the most consistent contextual influences on career self-efficacy (Ginevra et al., 2015; Metheny & McWhirter, 2013). Supportive family environments

strengthened career confidence by encouraging career exploration, providing career-related information and reinforcing positive expectations regarding future educational and occupational opportunities (Ginevra et al., 2015; Lapan et al., 2003). Family support also mediated the relationship between socioeconomic status and career self-efficacy, suggesting that broader contextual resources influence students' career confidence partly through supportive family relationships (Metheny & McWhirter, 2013). These findings indicate that students are more likely to develop career self-efficacy when family members actively encourage career exploration, reinforce positive career expectations and provide meaningful guidance throughout the career decision-making process (Ginevra et al., 2015).

Educational relationships perform a complementary role by providing students with career guidance, behavioural role models and opportunities for observational learning (Cheung et al., 2016; Wright et al., 2014). Mentor support enhanced career planning and job-search behaviours through career self-efficacy (Renn et al., 2014), while greater satisfaction with social support networks was associated with stronger confidence in making career decisions (Wright et al., 2014). Likewise, perceived support from parents, teachers and peers strengthened vocational exploration through career decision-making self-efficacy across culturally diverse educational settings, including Hong Kong, Shanghai and the United States (Cheung et al., 2016). These findings suggest that educational and social relationships strengthen career self-efficacy not simply by providing emotional encouragement but by helping students interpret career opportunities, observe successful career behaviours and develop confidence in pursuing their own educational and occupational goals.

Nevertheless, the literature demonstrates that social support is not universally effective. Teacher and peer support were not always directly associated with career self-efficacy despite showing positive relationships with resilience and perceived employability (Olle & Fouad, 2015). Similarly, networking, rather than acculturation itself, explained improvements in career confidence among Korean international students, highlighting that meaningful social engagement is more influential than simple exposure to supportive environments (Nadermann & Eissenstat, 2018). These findings indicate that social relationships strengthen career self-efficacy only when they provide career-relevant guidance, credible role models or opportunities for successful engagement. Simply belonging to a supportive environment is insufficient unless students actively interpret those experiences as evidence that they can successfully manage future career challenges (Olle & Fouad, 2015).

Overall, the literature suggests that career self-efficacy is not solely an individual cognitive belief but a socially constructed capability reinforced through interactions with significant others. Social support strengthens career self-efficacy when it provides opportunities for learning, encouragement and successful career-related experiences that complement students' self-understanding and personal agency. Collectively, the three mechanisms identified in this review - career self-understanding, personal agency, and social learning and support - demonstrate that career self-efficacy develops through the interaction of individual, educational and contextual processes rather than through isolated personal characteristics or environmental influences.

Career Self-Efficacy as a Mediating Mechanism

Career self-efficacy emerged as the most frequently examined mediating mechanism across the literature. Rather than influencing career outcomes directly, personal characteristics, educational experiences and contextual resources frequently affected students' career development indirectly through career self-efficacy (Wang et al., 2024; Liu & Hong, 2026; Renn et al., 2014). The literature consistently indicates that career self-efficacy converts individual and contextual resources into meaningful career behaviours by strengthening students' confidence in exploring careers, making educational and occupational decisions and successfully managing career transitions (Yang et al., 2025; Fouad et al., 2010; Glessner et al., 2017). Rather than acting as a direct predictor of career outcomes, career self-efficacy functions as the psychological process through which educational

experiences and personal resources are translated into effective career behaviour (Zhang et al., 2025; Huang, 2015; Koumoundourou et al., 2011).

The literature suggests that career self-efficacy performs three closely related functions within students' career development. First, it enables students to engage actively in career exploration and career decision-making (Kim et al., 2014). Second, it facilitates career preparation by strengthening vocational identity, career adaptability, perceived employability and readiness for employment (Koumoundourou et al., 2011). Third, it sustains career-related behaviour by encouraging persistence, adaptive responses to uncertainty and continued engagement with career-development activities during educational and occupational transitions (Lewis et al., 2018).

The most consistently identified function of career self-efficacy concerns students' ability to explore occupational opportunities and make informed career decisions. The students with stronger career self-efficacy demonstrated greater confidence in gathering career information, evaluating educational and occupational alternatives, selecting career goals and managing career indecision (Reese & Miller, 2006). More importantly, career self-efficacy repeatedly mediated the relationship between personal and contextual resources and these decision-making outcomes, indicating that career confidence serves as the mechanism through which students translate available resources into effective career choices (Wang et al., 2024; Huang, 2015; Renn et al., 2014).

Family support, mentoring and educational experiences enhanced career exploration because they strengthened students' confidence in performing career decision-making tasks (Cheung et al., 2016; Metheny & McWhirter, 2013). Likewise, psychological resources such as work volition, core self-evaluations and hardiness contributed to more effective career decision-making indirectly through career self-efficacy (Koumoundourou et al., 2011). These findings demonstrate that career self-efficacy is not simply another predictor of career decisions but the central psychological mechanism through which students convert personal strengths, educational experiences and contextual support into purposeful career action.

Several studies further demonstrated that career self-efficacy reduced career indecision by strengthening students' confidence in evaluating alternatives, committing to career goals and managing uncertainty during career decision-making (Kim et al., 2016; Wang et al., 2024). Dysfunctional career thoughts weakened career decision-making because they undermined students' confidence in their ability to evaluate career options and make appropriate educational and occupational choices (Kim et al., 2014). Conversely, career-development interventions consistently reduced career indecision by strengthening career self-efficacy and improving students' confidence in interpreting career information and applying it to future career decisions (Fouad et al., 2010; Reese & Miller, 2006). These findings indicate that successful career exploration and decision-making depend not only on access to career information but also on students' confidence in their ability to interpret, evaluate and apply that information effectively. Career self-efficacy therefore represents the principal psychological mechanism through which educational experiences and personal resources are translated into effective career decision-making (Wang et al., 2024).

Beyond supporting career decision-making, career self-efficacy also facilitates broader career preparation by strengthening students' readiness for future employment (Yang et al., 2025; Liu & Hong, 2026). The higher career self-efficacy was consistently associated with stronger vocational identity, greater perceived employability, increased career adaptability and improved preparedness for labour market transitions (Huang, 2015). Psychological resources such as hardiness contributed to employability primarily because they strengthened students' confidence in managing future career challenges, while resilience and perceived employability were also positively associated with higher career self-efficacy (Zhang et al., 2025). Likewise, students with stronger career self-efficacy developed clearer vocational identities, suggesting that confidence in career decision-making supports a more coherent understanding of future occupational roles (Koumoundourou et al., 2011). Educational interventions provide further evidence of this mediating role. Career-development courses, counselling programmes, career workshops and experiential learning activities consistently

enhanced students' preparedness for employment by strengthening career self-efficacy and increasing confidence in managing career-related challenges (Grier-Reed & Skaar, 2010; Saffariantoosi & Khaleghi, 2024). Although these interventions differed in their educational design and delivery, they produced remarkably consistent outcomes by helping students translate newly acquired knowledge and experiences into greater confidence in managing future educational and occupational transitions (Glessner et al., 2017).

Moreover, the literature suggests that career self-efficacy serves as the psychological bridge between educational experiences and employability-related outcomes (Fouad et al., 2010; Huang, 2015). Educational activities enhance career readiness not merely by developing knowledge and skills but by strengthening students' confidence in applying those resources to real educational and occupational contexts (Reese & Miller, 2006). Consequently, career self-efficacy enables students to transform educational preparation into greater employability, stronger vocational identity and increased readiness for successful transitions into the labour market (Koumoundourou et al., 2011). The third function of career self-efficacy concerns its role in sustaining career-related behaviour over time. Career development is not a single decision but a continuous process requiring repeated adaptation to changing educational pathways, occupational opportunities and labour market conditions. The career self-efficacy consistently enabled students to maintain motivation, respond constructively to uncertainty and remain actively engaged in career-development activities despite changing personal and contextual circumstances (Lewis et al., 2018; Nadermann & Eissenstat, 2018; Wright et al., 2014).

The research confirms that career self-efficacy promotes sustained career behaviour by strengthening students' capacity to adapt to uncertainty rather than withdraw from career-related challenges. Students demonstrating stronger planned happenstance skills, career engagement and professional networking were more likely to respond proactively to unexpected educational and occupational opportunities because they believed they could successfully manage unfamiliar situations (Liu & Hong, 2026). Likewise, psychological resources such as secure attachment, meaning in life and identity contributed to continued career confidence by enabling students to maintain positive expectations despite emotional challenges, career uncertainty and changing aspirations (Lewis et al., 2018). These findings indicate that career self-efficacy supports long-term career development by encouraging students to interpret uncertainty as manageable rather than threatening.

This adaptive function is particularly evident during the transition from education to employment. Students experiencing increased dysfunctional career thoughts following graduation demonstrated lower career self-efficacy and greater difficulty making career decisions (Zhang et al., 2025). In contrast, students with stronger career self-efficacy were more likely to continue exploring career opportunities, remain engaged in career-development activities and adapt successfully to changing educational and labour market conditions (Kim et al., 2014). These findings suggest that career self-efficacy strengthens resilience during career transitions by enabling students to interpret setbacks and uncertainty as temporary challenges rather than insurmountable barriers.

Overall, the literature demonstrates that career self-efficacy contributes not only to individual career decisions but also to the continuity of career development across time. Rather than simply increasing confidence in performing career-related tasks, career self-efficacy enables students to sustain motivation, adapt to changing educational and occupational environments and remain actively engaged in pursuing long-term career goals.

Moderators and Boundary Conditions

Although the literature consistently demonstrates positive relationships between career self-efficacy and career-related outcomes, these relationships are not equally strong across all students or educational settings (Cheung et al., 2016; Metheny & McWhirter, 2013). Rather than operating uniformly, career self-efficacy functions within identifiable boundary conditions that determine the extent to which confidence is translated into effective career behaviour (Ran & Cinamon, 2023; Wang

& Hsieh, 2022; Yang et al., 2025). The literature suggests three principal conditions influencing the effectiveness of career self-efficacy: students' psychological readiness to manage uncertainty, the degree of alignment between educational experiences and career aspirations, and the broader social and cultural environments within which career development occurs.

The literature consistently indicates that career self-efficacy is most effective when students possess sufficient psychological resources to cope with uncertainty and maintain goal-directed behaviour (Jadidian & Duffy, 2012; Kim et al., 2014; Suh & Flores, 2017). Variables such as planned happenstance skills, work volition, work locus of control and self-regulation did not simply increase career self-efficacy; they strengthened the extent to which career self-efficacy translated into career engagement, exploration and effective decision-making (Das et al., 2024; Zhang et al., 2025).

Students demonstrating stronger curiosity, persistence, flexibility and optimism were more likely to respond proactively to unexpected educational and occupational opportunities because they believed they could successfully manage uncertainty (Kim et al., 2014). Likewise, stronger work volition and an internal work locus of control increased the effectiveness of career self-efficacy by reinforcing students' beliefs that career outcomes could be influenced through their own actions rather than external circumstances (Jadidian & Duffy, 2012). Students with higher levels of self-regulation also maintained career confidence despite perceived disadvantage and uncertainty, enabling them to remain engaged with career-development activities (Suh & Flores, 2017).

Conversely, persistent career uncertainty weakened the effectiveness of career self-efficacy. Dysfunctional career thoughts, pessimism and difficulties integrating self-knowledge with occupational information reduced students' confidence in applying career-related knowledge and making effective educational decisions (Gati & Asulin-Peretz, 2011; Das et al., 2024). Collectively, these findings indicate that career self-efficacy contributes most strongly to career development when students possess the psychological capacity to interpret uncertainty as manageable rather than overwhelming.

The literature further indicates that career self-efficacy is strengthened when students perceive meaningful connections between educational experiences and future career aspirations (Liu & Hong, 2026; Youn et al., 2023). Career-development courses, counselling programmes and structured interventions consistently enhanced career self-efficacy, but their effectiveness depended on more than the provision of career information. The strongest improvements occurred when students actively participated in career planning, self-reflection, occupational exploration and experiential learning activities that enabled them to relate academic learning to future employment (Glessner et al., 2017; Grier-Reed & Skaar, 2010).

Educational fit also influenced the effectiveness of career self-efficacy. Students who perceived stronger alignment between their academic programmes, personal interests and occupational aspirations generally demonstrated higher confidence in making career decisions and greater commitment to long-term career goals (Dahling & Thompson, 2013). In contrast, uncertainty regarding educational direction, dissatisfaction with academic choices and limited opportunities to connect learning with future employment reduced the extent to which career self-efficacy translated into successful career behaviour (Gati & Asulin-Peretz, 2011). These findings suggest that educational institutions influence career self-efficacy not only by providing career services but also by creating learning environments in which students can recognise the relevance of educational experiences to future occupational opportunities.

A third boundary condition concerns the broader social and cultural environments within which career development takes place. Across the literature, supportive relationships generally strengthened career self-efficacy, but their effectiveness varied according to cultural context, student characteristics and the nature of available support (Ran & Cinamon, 2023; Jemini-Gashi & Hoxha, 2024).

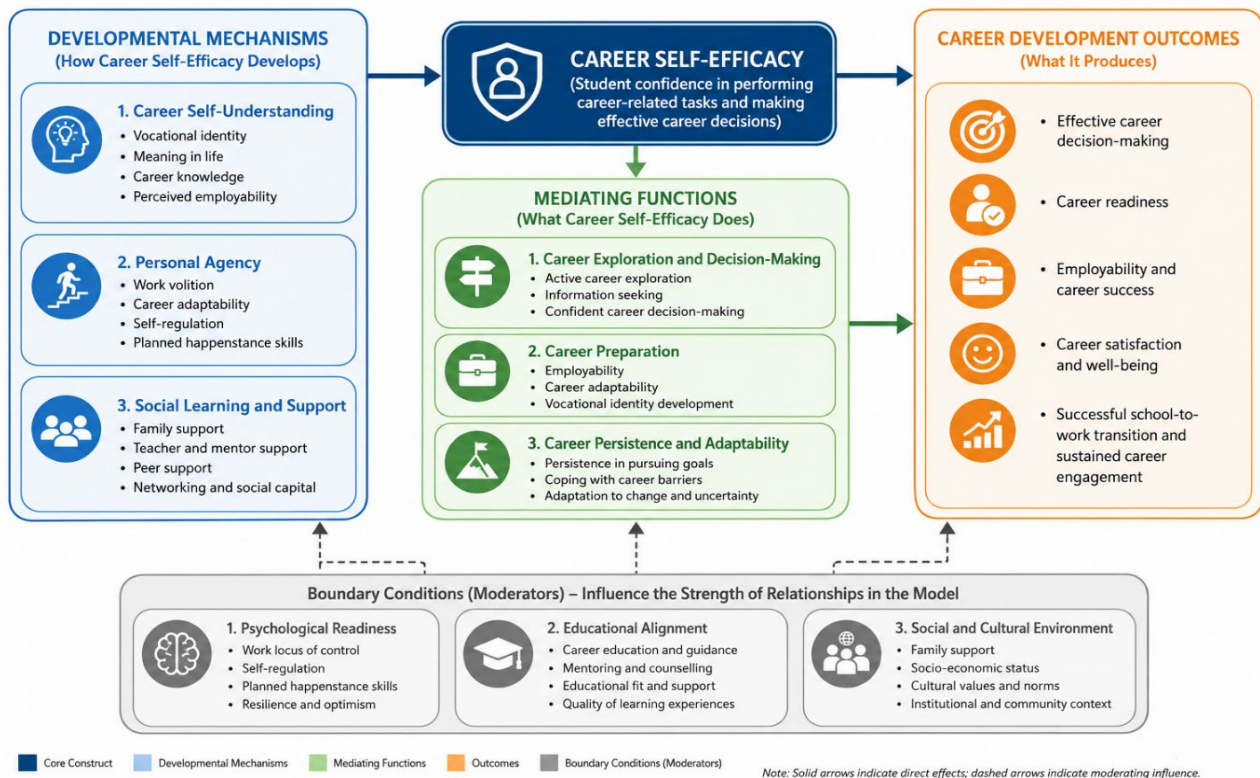
Cross-cultural evidence demonstrates that parents, teachers and peers consistently contributed to vocational exploration through career self-efficacy, although the relative importance of these social

influences differed across educational systems (Cheung et al., 2016). Likewise, networking strengthened career confidence among international students not because students became more culturally adapted, but because meaningful professional relationships provided career-relevant information, role models and opportunities for successful engagement (Nadermann & Eissenstat, 2018). These findings indicate that career self-efficacy develops within socially situated learning environments rather than independently of them.

The research also suggests that demographic characteristics operate less as direct moderators than as contextual influences shaping access to career-related resources. Gender, ethnicity and socioeconomic background produced mixed findings across studies, with several investigations reporting limited or no moderating effects after psychological and educational variables were considered (Jemini-Gashi & Hoxha, 2024; Johnson, 2020). Rather than functioning as universal moderators, these characteristics appear to influence career self-efficacy indirectly by affecting students' access to educational opportunities, supportive relationships and career-related learning experiences (Lewis et al., 2018; Metheny & McWhirter, 2013).

Overall, the literature suggests that career self-efficacy is most effective when students are supported by psychologically enabling, educationally relevant, and socially supportive environments. Confidence alone does not guarantee successful career development; rather, its influence depends on the conditions within which students interpret, apply, and sustain their career-related capabilities. The synthesis of the reviewed studies is summarised in Figure 1, which presents the integrated conceptual framework developed through this systematic review.

Figure 1. Integrated conceptual framework of career self-efficacy illustrating the developmental mechanisms, mediating functions, career outcomes, and contextual boundary conditions identified through the systematic review.



Note. The framework is derived from the synthesis of the 52 empirical studies included in this systematic literature review. It illustrates how career self-efficacy develops through three developmental mechanisms, functions as the central psychological process linking resources with career outcomes, and operates within psychological, educational and social boundary conditions.

The framework illustrates that career self-efficacy occupies three complementary roles within students' career development. First, it develops through the interaction of career self-understanding, personal agency, and social learning and support rather than through isolated antecedent factors. Second, career self-efficacy functions as the central psychological mechanism linking educational experiences, personal resources, and social support with career exploration, career decision-making, employability, and sustained career behaviour. Third, these relationships operate within identifiable psychological, educational, and social boundary conditions that influence the extent to which career self-efficacy contributes to successful career development.

As illustrated in Figure 1, career self-efficacy should be understood as a dynamic developmental capability rather than a static psychological characteristic. It emerges through continuous interactions between developmental mechanisms, translates educational and personal resources into career-related behaviours through its mediating functions, and operates most effectively when supported by favourable psychological, educational, and social conditions. Collectively, the framework integrates fragmented empirical evidence into a coherent explanation of how career self-efficacy develops and contributes to successful career development across educational contexts.

DISCUSSION

This systematic review synthesised three decades of empirical research to examine how career self-efficacy develops and influences students' career development across secondary and higher education. While previous studies have identified numerous antecedents and outcomes of career self-efficacy, the present review demonstrates that the literature has gradually shifted from identifying isolated predictors towards explaining the developmental processes through which career confidence is constructed and translated into career-related behaviour. The findings suggest that career self-efficacy is best understood as a dynamic developmental capability emerging from continuous interactions between individual characteristics, educational experiences and social environments. This interpretation is consistent with Social Cognitive Career Theory, which conceptualises career development as the product of reciprocal interactions among personal, behavioural and environmental factors (Lent & Hackett, 1987; Lent & Brown, 2019), while also highlighting the increasingly process-oriented direction of contemporary career self-efficacy research.

One of the principal contributions of this review is the identification of three interconnected developmental mechanisms through which career self-efficacy develops: career self-understanding, personal agency and social learning. Previous research has often examined variables such as vocational identity, employability, mentoring, family support or resilience independently. The present review demonstrates that these variables are better understood as complementary mechanisms that jointly strengthen students' confidence in managing career-related tasks. This interpretation extends Bandura's self-efficacy theory by illustrating how mastery experiences, vicarious learning and social persuasion are embedded within educational contexts rather than operating independently of them (Bandura, 1986, 1997). It also reinforces empirical evidence showing that career self-efficacy develops through meaningful interactions between students and their educational environments rather than through stable personal characteristics alone.

A second contribution concerns the role of career self-efficacy as a mediating mechanism. Across the literature, career self-efficacy consistently explained how educational experiences, psychological resources and contextual support influenced career exploration, career decision-making, employability and career persistence. This finding provides strong support for SCCT, which positions self-efficacy as a central cognitive mechanism linking learning experiences with career interests, goals and behaviour (Lent & Brown, 2019). However, the review further suggests that the literature has evolved beyond examining direct relationships towards increasingly sophisticated mediation models, reflecting a growing recognition that educational interventions and social support influence career outcomes primarily by strengthening students' beliefs in their own

capabilities. This progression represents an important theoretical development within the field and indicates that future research should focus less on identifying additional predictors and more on understanding the mechanisms through which career self-efficacy facilitates career development.

The review also demonstrates that career self-efficacy does not operate uniformly across educational contexts. Its influence is strengthened or constrained by identifiable psychological, educational and social conditions. Psychological readiness to manage uncertainty, meaningful alignment between educational experiences and career aspirations, and supportive family, mentoring and institutional environments consistently enhanced the contribution of career self-efficacy to career development. Conversely, dysfunctional career thoughts, weak educational alignment and limited access to career-related support reduced its effectiveness. These findings indicate that career self-efficacy should not be interpreted as a universally effective psychological resource but as a context-dependent capability whose impact depends on the environments in which students learn and make career decisions. This conclusion is consistent with SCCT's emphasis on contextual supports and barriers while providing a more integrated explanation of how these contextual influences shape career development.

The review also identifies several important directions for future research. Although mediation models have become increasingly sophisticated, the evidence base remains dominated by cross-sectional survey designs using structural equation modelling. Consequently, existing research explains relationships between variables more effectively than it explains how career self-efficacy develops over time. Longitudinal, mixed-method and intervention studies are therefore needed to examine the dynamic processes through which educational experiences, career learning and social support contribute to changes in career self-efficacy across different educational stages. Greater attention should also be given to underrepresented student populations, including secondary-school students, international students and learners from diverse cultural contexts, to improve understanding of how contextual differences influence career self-efficacy development.

Overall, this review advances the literature by integrating fragmented empirical evidence into a coherent conceptual framework. Rather than viewing career self-efficacy simply as an individual psychological belief, the review demonstrates that it functions as a dynamic developmental capability through which educational experiences, personal resources and social relationships are translated into successful career development. By integrating developmental mechanisms, mediating functions and contextual boundary conditions within a single framework, this review provides a more comprehensive explanation of career self-efficacy and establishes a stronger theoretical foundation for future research and educational practice.

PRACTICAL IMPLICATIONS

The integrated conceptual framework developed in this review has important implications for educational practice, institutional strategy and educational policy. Rather than viewing career self-efficacy as an individual psychological characteristic that develops independently, the evidence indicates that it is a developmental capability that can be intentionally cultivated through educational experiences, supportive learning environments, and meaningful social interactions. Consequently, responsibility for strengthening students' career self-efficacy extends beyond career counsellors to encompass schools, universities, educational leaders, and policymakers.

For schools and universities, the review suggests that career development should be embedded throughout the educational experience rather than delivered through isolated career guidance activities. Educational institutions should integrate career learning into the curriculum by providing opportunities for career exploration, reflective learning, problem-solving, and authentic workplace experiences. Internships, work-based learning, mentoring programmes, project-based learning, and structured career planning activities enable students to develop confidence through mastery experiences and practical application of their knowledge. Such approaches are likely to strengthen

career self-understanding, personal agency, and preparedness for educational and occupational transitions.

The findings also have important implications for career guidance professionals. Traditional career guidance has frequently focused on helping students select occupations or make educational choices. However, this review suggests that effective career guidance should also prioritise the development of students' confidence in managing career-related challenges. Career counselling programmes should therefore emphasise continuous career exploration, reflective practice, goal setting, career adaptability, and self-regulated learning. Providing repeated opportunities for students to experience success, receive constructive feedback, and engage with role models may strengthen career self-efficacy more effectively than information-based guidance alone.

Educational leaders should recognise career self-efficacy as a strategic educational outcome that contributes to graduate employability, lifelong learning, and successful school-to-work transitions. Developing students' career confidence should therefore become an institutional priority integrated across academic programmes, student support services, and employability strategies. Strong collaboration between academic staff, career services, employers, alumni, and community organisations can create coherent developmental environments in which students receive consistent academic, professional, and social support throughout their educational journey.

At the policy level, the review highlights the importance of adopting long-term, developmental approaches to career education. National education systems should move beyond preparing students solely for immediate employment and instead support the progressive development of career self-efficacy from secondary education through higher education. Investment in comprehensive career education curricula, teacher professional development, mentoring initiatives, equitable access to career guidance services, and partnerships between educational institutions and employers may strengthen students' career readiness while reducing inequalities associated with socio-economic background and educational opportunity.

Finally, the review demonstrates that the effectiveness of career self-efficacy is influenced by psychological, educational, and social contexts. Consequently, educational policies and institutional strategies should avoid one-size-fits-all approaches to career development. Instead, interventions should be designed to accommodate diverse student backgrounds, cultural contexts, and educational needs, ensuring that all learners have opportunities to develop the confidence required to navigate increasingly complex and uncertain career pathways.

CONCLUSION

This systematic literature review synthesised three decades of empirical research to develop an integrated understanding of career self-efficacy among students in secondary and higher education. By reviewing 52 empirical studies published between 1996 and 2026, the study moved beyond the fragmented examination of individual antecedents and outcomes to propose a coherent conceptual framework explaining how career self-efficacy develops, functions, and contributes to career development. Rather than conceptualising career self-efficacy as a static psychological belief, the review demonstrates that it is a dynamic developmental capability that emerges through continuous interactions between individual characteristics, educational experiences, and social environments.

The review makes three principal contributions to the literature. First, it identifies three interconnected developmental mechanisms - career self-understanding, personal agency, and social learning and support - that collectively explain how students develop confidence in managing career-related tasks. Second, it demonstrates that career self-efficacy functions as the central psychological mechanism through which educational experiences, personal resources, and contextual support are translated into career exploration, career decision-making, employability, career adaptability, and sustained career behaviour. Third, it shows that these relationships are

shaped by identifiable psychological, educational, and social boundary conditions, providing a more comprehensive explanation of when and how career self-efficacy contributes to successful career development.

Despite these contributions, several limitations should be acknowledged. The review was restricted to English-language, peer-reviewed journal articles and therefore may have excluded relevant evidence published in other languages or within the grey literature. Furthermore, because of the methodological diversity across the included studies, the review adopted a qualitative evidence synthesis rather than a statistical meta-analysis. Future research should therefore employ longitudinal, intervention-based, and cross-cultural designs to examine how career self-efficacy develops over time and across different educational settings. Additional attention should also be given to the influence of emerging technologies, including digital career guidance and artificial intelligence, on students' career self-efficacy and career decision-making.

Overall, this review provides a more integrated understanding of career self-efficacy by synthesising fragmented empirical evidence into a coherent conceptual framework that connects developmental mechanisms, mediating functions, and contextual boundary conditions. In doing so, it extends the application of Social Cognitive Career Theory within educational settings while offering a stronger theoretical foundation for future research. More importantly, it highlights that career self-efficacy should be understood not simply as an individual psychological belief, but as a developmental educational capability that can be intentionally cultivated through strategically designed learning environments, supportive educational systems, and evidence-informed career development practices. This perspective provides a valuable foundation for strengthening students' career readiness and supporting successful educational and occupational transitions in increasingly dynamic labour markets.

AI Usage and Assistance

During the preparation of this manuscript, the author utilised AI tools (Google Gemini / ChatGPT) to rephrase portions of the text and enhance the fluency of the English. Following this AI assistance, the entire manuscript was thoroughly reviewed and approved by a human language editor to ensure accuracy and an appropriate academic tone. The author takes full responsibility for the final content and integrity of the publication.

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