Efficacy of Career & Life Design Interventions: A Systematic Review

Abstract

Work plays a central role in our lives. However, finding a truly satisfying and fulfilling career can be a challenging life task (Gini, 1998). Career & Life Design (CLD) offers a relatively novel deliberate approach to vocational wayfinding (Savickas et al., 2009). Despite the growing interest in CLD, evidenced by the conceptual and empirical studies in recent years, the field is still young, with very limited comprehensive reviews of its empirical efficacy. Utilising the Systematic Literature Review method (Snyder et al., 2019) using PRISMA guidelines, Scopus and Web of Science databases were analysed to address this existing gap by systematically reviewing the available empirical evidence (both qualitative and quantitative) to evaluate CLD´s effectiveness in fostering adaptive psychological and career outcomes. Out of 86 articles meeting inclusion criteria, CLD emerges as a promising intervention associated with positive psychological and professional outcomes, including heightened reflexivity, improved career self-efficacy and decision-making, as well as greater career satisfaction. Recommendations for future studies include a call for more experimental and longitudinal studies to consolidate our understanding of Life design´s true impact, exploring the relationship between Life Design and well-being outcomes, and investigating its integration with emerging technologies. Additionally, assessment of its potential risks and drawbacks presents valuable avenues for further exploration. Implications of our findings are further discussed.

Keywords: Life Design; Career Design; Design Thinking; Career Construction; Systematic Review

1. Introduction

Work plays a significant part in our lives. On average, one third of our life will be spent at work, which is estimated to be 90,000 hours over the course of a lifetime (Pryce-Jones & Lutterbie, 2010). Thus, the importance of doing work that is personally meaningful and fulfilling to us is apparent. And yet, despite the proliferation of career options in recent years, finding and constructing a rewarding career can be a challenging if not daunting task for many (Gini, 1998). On top of this, our modern careers are becoming increasingly disrupted and transformed by the exponential pace of emergent technologies, such as AI, out-performing human capabilities and challenging even some of the most traditionally stable occupations (Caruso, 2018). New conceptions of careers presenting them as boundaryless (Arthur, 1994), protean (Hall, 1996), customized (Benko & Weisberg, 2007), or portfolio-based (Handy, 1998), all recognize that a career belongs to the person, not the organization (Savickas, 2011). As a result, entering today's world of work requires more effort, deeper self-knowledge, and greater confidence than ever before (Savickas, 2012). Contemporary workers must increasingly become lifelong learners who can use sophisticated technologies, embrace flexibility rather than stability, maintain employability, and create their own opportunities (Savickas et al., 2009).

One approach that promises to help others successfully navigate these complexities of modern career and professional wayfinding is Career & Life Design (CLD, Savickas et al., 2009). As proposed by Savickas (2009; 2012), life design empowers individuals to actively shape their lives through thoughtful, creative, and meaningful career development. Rooted in social constructionism (Burr, 2015), CLD recognizes that individuals construct knowledge and identity through social interaction, framing careers as autobiographical stories shaped by reflective discourse (Savickas, 2012; Burr 2015). Emphasising active and reflexive life and career design, CLD integrates personal values, interests, and skills, guided by social support (Guichard, 2005;

Savickas, 2012). With its roots in the Career Construction Theory (CCT, Savickas, 1997), CLD thus signifies a shift towards more person-centric and self-directed career planning, emphasising intrinsic motivation and contextual adaptability (Savickas et al., 2012). Emerging evidence suggests CLD's potential effectiveness. For example, studies indicate that CLD principles can enhance self-esteem, career decision-making, adaptability, and life satisfaction (Camussi et al., 2023; Williams et al., 2022; Pordelan et al., 2021).

However, despite the growing popularity of this career construction paradigm relatively little is still known about the value of this approach. In fact, an exploration of the current state of the CLD field reveals notable blind-spots. One of the most obvious ones is the absence of a comprehensive literature review that would systematically assess CLD´s efficacy. This is particularly striking given the increasing popularity and adoption of CLD programs by a growing number of institutions and wider public worldwide. One such example is the Stanford´s Life Design approach (Burnett & Evans, 2015) that has established itself internationally as a benchmark of CLD practice, increasingly embraced and endorsed by leading institutions and organizations worldwide. Its proponents present it as an innovative approach able to help individuals steer their personal and professional lives with greater agency, confidence and meaning (Burnett & Evans, 2015). However, the apparent discrepancy between what we truly know and what is being sold prompts some crucial questions: (1) What is the current state of CLD´s empirical literature, (2) what types of CLD interventions and their iterations have emerged over the years, and (3) what is the actual evidence behind their efficacy? This literature review thus aims to address this gap by offering a comprehensive assessment of CLD interventions through a systematic approach (Snyder, 2009), mapping existing interventions, categorising their types, and assessing their efficacy on key psychological and career outcomes.

2. Methods

A systematic review of Scopus and Web of Science databases was conducted following PRISMA guidelines (Liberati et al., 2009) to identify all published peer-reviewed CLD papers. The search, covering articles until June 2023, employed clear inclusion criteria, focusing on peer-reviewed, English-language, empirically based CLD intervention studies across relevant disciplines. The absence of prior systematic reviews on CLD justifies the current research focus.

3. Results

As illustrated more closely in Figure 1, the initial Scopus search yielded 1,043 records, reduced to 680 after applying search criteria. The WOS database contributed an additional 2,794 records, totaling 3,474 papers. After a detailed screening process, 86 relevant CLD papers met the inclusion criteria, forming the basis for the final qualitative synthesis. This systematic review provides a rigorous overview of the empirical evidence supporting the efficacy of CLD interventions.

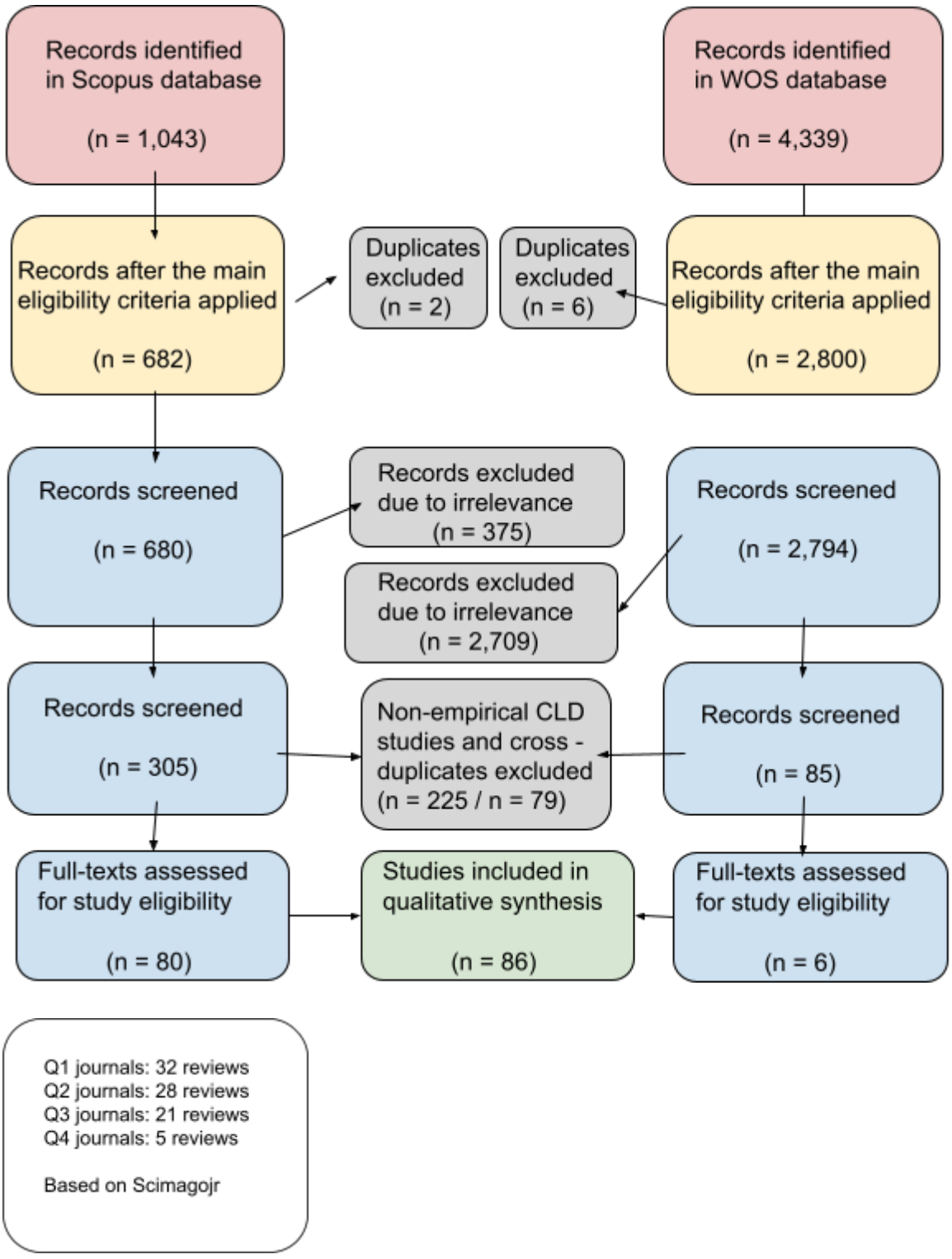


Figure 1. The flow-chart of our study selection process and journal publications quality following the PRISMA model (Liberati et al, 2009).

The series of tables (Tables 1, 2, and 3) offers a comprehensive overview of the 86 CLD studies considered for the final qualitative synthesis, aligned with our primary research objectives. Table 1 encompasses all recorded quantitative studies, followed by Tables 2 and 3, which capture studies with mixed-methods and qualitative research designs, respectively. The "Paper" section outlines authorship and publication year, while "Journal" details the quartile ranking of the publication outlet. "Area" signifies the research field and authors´ positioning. "Method" then specifies the research and intervention design, and "Approach" delineates the specific CLD practices and tools used. The "Control" section notes the presence of a control or comparison group in quantitative experimental studies. "Setting" categorizes interventions as individual or group-based, and "Format" specifies in-person, online, or hybrid delivery. "Size" denotes sample size, and "Sample" describes the demographic participating. "Age" represents the average age of participants, and "Scope" illustrates the temporal length of CLD interventions. In the "Outcome" section, findings and benefits of CLD interventions are detailed, further specified in the "Type" column as related to Psychological resources (PR), Career resources (CR), or Concrete career outcomes (CO). "Nationality" indicates the cultural context of the study. Finally, the "Effects" column reports strength of observed effects in quantitative studies, and "Effect sizes" provide corresponding efficacy statements. Key findings are presented in the following tables, starting with an overview of peer-reviewed quantitative CLD studies (n = 17) sorted by publication year.

Table 1. An overview of quantitative CLD intervention studies published between 2009 - 2023.

Paper	Journal	Area	Method	Approach	Control	Setting	Format	Size	Sample	Age	Scope	Outcome	Effects	Effect size	Type	Nationality
Carvalho, Mourão & Freitas, 2023	Q1	Vocational & Career psychology	Quant	3 months, 6 weekly sessions facilitated by career psychologists, two external observers	Yes	Group	Online	20	University students	25 yrs	Long. (Pre, post & 1 month follow up)	Increased career adaptability & perceptions of professional development and employability	Pearson´s r² Overall: CA = 0.85 PD = 0.79 PE = 0.78 1. CA Group: Beta = 7.09 SE = 0.99 CI = 5.15 - 9.03 t = 7.16 Group x Time: Beta = 8.77 SE = 1.15 CI = 6.53 - 11.02 t = 7.66 2. PD Group: Beta = -0.58 SE = 0.26 CI = -1.09 - -0.07 t = -2.23 Group x Time: Beta = 1.86 SE = 0.30 CI = 1.28 - 2.44 t = 6.28 3. PE Group: Beta = -0.40 SE = 0.26 CI = -0.92 - 0.12 t = -1.51 (non.sig) Group x Time: Beta = 1.78 SE = 0.31 CI = 1.17 - 2.39 t = 5.73	Large	PR, CR	Brazil
Camussi et al., 2023	Q1	Psychology	Quant.	1 month, 2 x 2 hr sessions CLD activities led by career psychologists	No	Group	Online	103	University students	20 yrs	Short. (pre/post only)	Increased levels of career adaptability, courage, time perspective, resilience & life satisfaction	Not reported		PR CR	Italy

Paper	Journal	Area	Method	Approach	Control	Setting	Format	Size	Sample	Age	Scope	Outcome	Effects	Effect size	Type	Nationality
														Not reported		
Santili et al, 2022	Q2	Career guidance, counselling & development	Quant. Intervention	5 sessions (3 group and 2 individual) of 8 hrs total, CAAS-Italy (2012), Design my Future (DiMaggio, 2016), Propensity for Sustainable Future (Nota et al., 2020)	No	Both	Online	12	Unemployed Young adults	25 yrs	Short (pre/post-test only)	overall increase in career adaptability, resilience, future orientation, and the propensity to identify inclusive and sustainable actions for the future	Cohen´s r CAAS Italy Concern r=0.82 Control r=0.84 Curiosity r=0.56 Confidence r=0.88 Resilience r=0.85 Future Orientation r=0.72 Propensity to identify inclusive & sustainable actions for the future r = .79	Large	PR, CR	Italy Covid-19 period
Williams et al., 2022	Q1	Education	Quant, Intervention	2 hour workshop w exercises for self-reflection, self-efficacy, and career optimism, The Life Orientation Test (LOT-R, 1994), (GSES, 1993), Rosenberg Self-esteem Scale (1965), Career Optimism Subscale (2005)	No	Group	In person	75	University students	20 yrs	Long (over 8 months)	significant immediate and sustained increase in self-esteem. Certainty of career development steps increased at a later follow up.	Cohen's d Se = 0.5	Moderate	PR, CR	UK
Williams, Hutchings & Phelps, 2022	Q1	Education	Quantitative, Questionnaires (pre & post),	LOT-R (1994), GSES (1995), RSES (1965), Career Optimism Subscale (2005)	Yes	Group	In-person	47	University students	20 yrs	Long. (8 weeks later, over 8 months period)	Increased Self-esteem	Cohen´s d Self-esteem = 0.5 (Post-test, but not at a follow-up)	Moderate	PR	Wales, UK
Pordelan et al., 2021	Q1	Education	Quantitative, Manip* Quasi experiment Questionnaires (pre & post)		Yes	Group	Both	45	Undergraduate students	24 yrs	Longitudinal (follow-up)	Career decision-making; Career decision-making self-efficacy	Partial eta squared (η2) CDM = 0.60 CDMS = 0.81	Large	CR	Iran
Conyers, Tackett & Wright, 2021	Q2	Professional Training & Developme	Quantitative, Questionnaires,	CLD strategies, Stanford Life Design	No	Individual	Online	145	Med-Peds residents	N/A	Short	Increased career decision clarity &	Not reported	Not reported	CR	US

Paper	Journal	Area	Method	Approach	Control	Setting	Format	Size	Sample	Age	Scope	Outcome	Effects	Effect size	Type	Nationality
		nt	Cross-sectional (pre & post)	approach, Prototype conversations & experiences, immersive exposure to the career, reflecting on career compatibility, work and life view exercises								confidence in career plans				
Gülşen, Seçim &, Savickas, 2021	Q2	Career guidance, counselling & development	Quantitative* Questionnaires (pre & post)	5 CLD sessions Future Orientation (2016), CAAS, Life Satisfaction (1985), Dream Achievement measure	Yes	Group	In-person	90	high school students	14 yrs	Short	Increased capacities for Designing My Future skills, Satisfaction with Life, Career adaptability, Future orientation, Belief in Dreams achievement	Cohen´s d DMF total score (d = 1.08) Future Orientation (d = 0.84) Resilience (d = 1.16) SWLS (d = 0.69) CAAS-SF (d = 0.98) Concern (d = 0.83) Control (d = 0.87). Curiosity (d = 0.72) Confidence (d = 0.52) Belief-in-your-dreams (d = 0.91)	Large	PR, CR	Cyprus
Cadaret & Hartung, 2020	Q3	Career guidance, counselling & development	Quantitative (pre- & post-test)	CCC intervention, MCS workbook, 3 weeks long	Yes - Waitlist control	Group	In-person	69	high school students	16 yrs	Short	Increased career adaptability (control & confidence) and sense of vocational identity & measure	Partial eta squared (η2) CAAS = 0.26 VIS = 0.24 VIM = 0.28	Large	CR	USA
Santilli, Nota & Hartung, 2019	Q1	Vocational & Career psychology	Quantitative* (pre- & post-test), Experimental	MCS workbook, 3 sessions, 2 hrs each (6 hrs total), over 3 weeks period	Yes	Group	In-person	108	adolescent participants	13 yrs	Short	Increased career adaptability and future orientation, concern & control	Pearsons r² Beta coefficients CA = 0.30, SE = 6.19 FO = 0.30 SE = 8.07 Concern = 0.30, SE = 9.03 Control = 0.27, SE = 8.97	Large	PR, CR	Italy

Paper	Journal	Area	Method	Approach	Control	Setting	Format	Size	Sample	Age	Scope	Outcome	Effects	Effect size	Type	Nationality
Maree, et al, 2019	Q3	Psychology	Quantitative, pre- & post-test, Quasi Experiment	CIP & CAAS scale, 12 sessions, over 6 weeks	No	Group	In-person	62	Unemployed young adults	24 yrs	Short	Increased career adaptability; employability skills, career identity clarity	Cohen´s d CAAS: Quasi-experimental group: Overall d = 0.70 Concern d = 0.50 Control d = 0.50 Curiosity d = 0.54 Confidence d = 0.40 Control: Overall d = 0.35 Concern d = 0.69 Control d = 0.16 (non sig.) Curiosity d = 0.12 (non sig.) Confidence d = 0.10 (non sig.)	Low to Moderate	CR	South Africa
Ginevra & Nota, 2018	Q1	Psychology	Quantitative Intervention (pre- & post-test),	10 unit training, over 10 weeks, 2 hours each My Hope (Nota et al., 2014), Career Exploration Scale (2006), Childhood Career Development Scale (2004), Occupational Knowledge Interview (2013),	Yes	Group	In person	154	primary school students	10 yrs	Short	Increased career adaptability (significantly higher hope, optimism, curiosity, career exploration, occupational knowledge, information, planning, and time perspective)	Partial eta squared η2p Hope = .042 Optimism = .048 Career exploration = .14 Childhood career dev. Scale = .108 Actual occupational knowledge = .254	Moderate to Large	CR	Italy

Coding for the outcome types: PR - Psychological resource, CR - Career resource, CO - Career outcomes (concrete); Rules of thumb for effect sizes: Pearson´s r^2 = 0.01 indicates a small effect size, r^2 = 0.09 indicates a medium effect size, and r^2 = 0.25 a large effect size. Cohen´s d = 0.2 indicates a small effect size, d= 0.5 a medium effect size, and d = 0.8 a large effect size. Partial Eta Squared: η2 = 0.01 indicates a small effect. η2 = 0.06 a medium effect, and η2 = 0.14 indicates a large effect.

Second, Table 2 presents an overview of all peer-reviewed mixed-method CLD studies (n = 28) published to this date, sorted by the year of their publication from the most recent to the oldest.

Table 2. An overview of mixed-method CLD intervention studies published between 2009-2023.

Paper	Journal	Area	Method	Approach	Control	Setting	Format	Size	Sample	Age	Scope	Outcome	Effects	Effect size	Type	Nationality
Wang & Liu, 2023	Q1	Psychology	Mixed, Case study, Survey, Interview,	3 CLD sessions, 50 mins each, via structured interview (Savickas 2013)	-	Individual (1-on-1)	in person	1	High school student	16 yrs	Short. (pre/post-only)	Significant positive change in career adaptability & narratability	N/A		PR, CR	China
Maree & Nortje, 2023	Q2	Career guidance, counselling & development	Mixed, Single case study	Career Construction Interview (CCI, Savickas, 2019), 8 sessions, 2 months, Career Interest Profile (CIP, Maree, 2017)	-	Individual	In person	1	Woman (mid age)	48 yrs	Short (no follow-up)	Increased sense of self-awareness, self-view, and meaning-making	N/A	N/A	PR	South Africa (SA)

Paper	Journal	Area	Method	Approach	Control	Setting	Format	Size	Sample	Age	Scope	Outcome	Effects	Effect size	Type	Nationality
Santilli & Hartung, 2022	Q3	Education	Mixed methods	CCI, 5 counselling sessions, My Career Story (MCS, 2012), Reflective capacity & Hope	No	Individual	In-person	20	Youth	22 yrs	Short	increased sense of hope & reflective capacity (self-reflection and empathic reflection)	Cohen´s r Reflective capacity measure (r = .89) Self-reflection (r = .89) Empathic reflection (r = .57) Hope (r = .82)	Large	PR	Italy
Cardoso et al., 2022	Q3	Education	Mixed* Experiment	Focus group, CAAS (2012), Vocational Identity scale (1980), Career decision making, Self-efficacy (2005), Vocational Certainty Scale (2007)	Yes	Group	In person	139	High schoolers	14 yrs	Long. (3 months follow up)	Increased Vocational development and self-knowledge, commitment to educational and vocational pursuits, identity formation	Partial eta squared (η2) Significant for Vocational Certainty, η2 = .05 Vocational identity, η2 = .09 Career adaptability η2 = .12 Career decision-making self-efficacy, η2 = .11	Low to Moderate	PR, CR	Cyprus
Dean et al., 2022	Q1	Vocational & Career psychology	Mixed, Quasi experiment	Canadian Occupational Performance Measure (COPM, Law et al, 1998), Goal Attainment Scaling (GAS, Carr, 1979), Self-determination scale (SDS, Wehmeyer, 1995); Employment outcomes scale (Wehman et al, 2014); Short-Interviews	No	Individual	In person	25	Youths (disability, ASD)	17 yrs	Short (pretest-posttest, no follow-up)	Increased goal attainment and satisfaction, non-significant in self determination for employment	Not reported	Not reported	PR	USA
Ruiters & Maree, 2022	Q4	Education	Mixed, Case study	CCI Intervention (Savickas, 2019), CIP (Maree, 2017) & CAAS survey (Career Adapt Abilities Scale, Savickas & Porfeli, 2012)	-	Individual	In person	1	Student (disability)	18 yrs	Short (no follow-up)	self- and career-efficacy and adaptability. Post intervention, greater passion pursuit and resourcefulness	N/A	N/A	PR, CR	SA

Paper	Journal	Area	Method	Approach	Control	Setting	Format	Size	Sample	Age	Scope	Outcome	Effects	Effect size	Type	Nationality
Leung, 2022	Q1	Psychology	Mixed methods	Intervention (Infinity system), Surveys, CAAS, Career Decision making difficulty and Career Decision Clarity, Education aspirations, Career planning	No	Individual	Both	2,935	12th graders (across 49 high schools)	17 yrs	Short	Increased Self-awareness, Self-direction & Career meaning construction	Partial eta squared (η2) User status = 0.001 - 0.005	Low to Moderate	PR, CR	Hong kong
Le Grange & Maree, 2022	Q4	Education	Mixed, Single case study	CIP, Portfolio Collage, Journal, Interviews + Maree Career Matrix (2013), Jung Personality Questionnaire	-	Individual	In person	1	Woman (parental neglect)	18 yrs	Short (no follow-up)	increased sense of self & meaning-making, career adaptability & resilience	N/A	N/A	PR, CR	SA
Silva et al., 2022	Q1	Psychology	Mixed methods	Interviews, Conducted by 4 psychologists, Vocational Certainty Scale (2007), Vocational Identity (1980), Measurement scale for Indecisiveness (2002), Beck Depression Inventory (1996), Outcome questionnaire (1996)	No	Individual	In-person	6	Adults	25 yrs	Short	Increased Vocational identity &, psychological functioning; Decreased career indecision	N/A		PR, CR	Portugal
Maree, 2022	Q2	Career guidance, counselling & development	Mixed	Intervention, Four groups, Maree Career Matrix (2017), CAAS-SA (2012) & CIP (2017)	No	Group	In person	31 (24 final)	Unemployed youths	20 yrs	Short (pretest-posttest)	increased self-understanding, adaptability, career orientation and future perspective	Cohen´s r CAAS-SA Overall: 0.69 Concern r = 0.83 Control r = 0.57 Curiosity r=0.54 Confidence r=0.43	Moderate to Large	PR, CR	South Africa
Maree J.G., 2021	Q1	Education	Mixed methods	CCC intervention, Case study MCM, CIP measures	No	Individual	In-person	1	young person	14 yrs	Short	Improved Self-awareness, career development	N/A		PR, CR	South Africa

Paper	Journal	Area	Method	Approach	Control	Setting	Format	Size	Sample	Age	Scope	Outcome	Effects	Effect size	Type	Nationality
Argyropoulou, et al,. 2020	Q2	Sustainability & Sustainable development	Mixed methods*	Future Career Autobiography & Life Project Reflexivity Scale	Yes	Group	In-person	60	Career counsellors	37 yrs	Short	Increased career counsellors' reflexivity and self-awareness	Choen´s d Clarity/Self-projection = 0.55	Moderate	PR	Greece
Maree, 2020	Q3	Career guidance, counselling & development	Mixed methods, Case study	LDC intervention, Sessions MCM, CIP	-	Individual	In-person	1	Adolescent (Grade 12)	17 yrs	Short	Increased Creativity	N/A		PR	South Africa
Maree, 2020	Q3	Child & Youth Development	Mixed methods, Single case study	CCI MCM & CIP	-	Individual	In-person	1	Person with Disability (Tourette syndrom)	N/A	Short	Improved sense of self	N/A		PR, CR	South Africa
Maree &, Che, 2020	Q3	Child & Youth development	Mixed methods, Case study	LDC intervention, 7 sessions, 12 weeks, MCM, CAAS, CIP, CCI, MCS	No	Individual	In-person	1	Adolescent (Disadvantaged from an ethnic minority)	20 yrs	Short	Increased career narratability, Career adaptability; Sense of career Identity & Meaningful future	N/A		PR, CR	South Africa
Venter & Maree, 2020	Q2	Education	Mixed methods	LDC intervention, 10 weeks Case studies, Observation	No	Individual	In-person	6	children (home violence backgroun d)	11 yrs	Short	Adaptability; Career resilience; mastery, optimism, self-efficacy, and sense of relatedness	N/A		PR, CR	South Africa
Maree, 2020	Q3	Child & Youth Development	Mixed methods, Case study	5 hours interview, MCM (Maree, 2016), CIP, My Life Story	-	Individual	In-person	1	female learner	14 yrs	Short	Increased career narratability & resilience; self-worth and growth	N/A		PR, CR	South Africa
Maree, 2019	Q2	Career guidance, counselling & development	Mixed methods	Intervention, 4 days, 9,5 hrs total, CIP & MCM, CAAS-SA	No	Group	In-person	57	high school students	17 yrs	Short	Increased career adaptability	Cohen´s d CAAS-SA overall: d = 0.91 Concern d = 1.08 Control d = 0.53 Curiosity d =0.50 Confidence d =0.40	Moderate to Large	CR	South Africa

Paper	Journal	Area	Method	Approach	Control	Setting	Format	Size	Sample	Age	Scope	Outcome	Effects	Effect size	Type	Nationality
Maree, Pienaar &, Fletcher, 2019	Q3	Psychology	Mixed methods	Intervention, Over 2 months period, CAAS-SA, Resiliency Scale for Children and Adolescents (2007)	No	Group	In-person	24	high school females	16 yrs	Short	Increased Career adaptability, Improved sense of self & identity development	Pearson's r CAAS = non.sig effects Control = 0 Mastery = 0.5 Optimism = 0.5 Adaptability = 0.2 Self-efficacy = 0.5 Relatedness = 0.3	Low to Moderate	PR, CR	South Africa
Maree, 2019	Q2	Career guidance, counselling & development	Mixed methods	Interview Case study, 1 day, 8 hrs, CIP, MCM & DAT-L	-	Individual	In-person	1	Adolescent	17 yrs	Short	Improved sense of self and career identity, increased meaning and purpose in career choices	N/A		PR, CR	South Africa
Cardoso, Janeiro &, Duarte, 2018	Q2	Career guidance, counselling & development	Mixed methods - quantitative (pre- & post-test), Quasi experiment	2 sessions (2 and 3 hours), Vocational Certainty Scale (2007), CMI (1995), CDSE-SF (2005), MCS tool, & Focus group, All conducted by 5 educational psychologists	No	Group	In-person	236	high-school students	16 yrs	Short	Increased career certainty and career decision-making self-efficacy	Partial eta squared η2p Career certainty = .039 Career self-efficacy =.024 Career adaptability = .0	Low to Moderate	CR	Portugal
Maree & Di Fabio, 2018	Q2	Sustainability & Sustainable development	Mixed methods, Intervention, Case study,	MCM, CIP 3 sessions	-	Individual	In-person	1	year old adolescent	18 yr	Short	Improved reflexivity, meaning-making & promotion of more sustainable career life projects	N/A		PR, CR	South Africa
Maree, 2018	Q3	Child & Youth development	Mixed methods	Rage of Psychometric tests, eg. Differential Aptitude Test (2000) & CIP	-	Individual	In-person	1	Youth	14 yrs	Short	Increased reflexivity, Narratability & Meaning making. self-construction	N/A		PR, CR	South Africa
Maree, Cook &, Fletcher, 2018	Q1	Education	Mixed method (c), quasi-experimental, comparison group, pre- & post-test design	CAAS, Collective case study	Comparison group	Group	In-person	44	high-school students	17 yrs	Short	-	No effects	No effects	None	South Africa

Paper	Journal	Area	Method	Approach	Control	Setting	Format	Size	Sample	Age	Scope	Outcome	Effects	Effect size	Type	Nationality
Cardoso et al., 2016	Q1	Vocational & Career psychology	Mixed methods	LDC interview, 3 sessions, Vocational Certainty Scale & Career Maturity Inventory (CMI), Innovative Moments Coding System	-	Individual	In-person	1	adolescent	16 yrs	Short	Increased Vocational Certainty	N/A		CR	Portugal
Di Fabio & Palazzeschi, 2016	Q1	Psychology	Mixed methods	Life Meaning Intervention (Bernaud, 2015) (pre- & post-test) / Qualitative - Life Adaptability Qualitative Assessment (LAQuA), Career Counseling Innovative Outcomes (CCIO), 3 sessions (8 hrs each)	-	Group	In-person	1	graduate student (interning)	23 yrs	Short	Increased Self-understanding & Career identity development	N/A		CR	Italy
Cook & Maree, 2016	Q2	Career guidance, counselling & development	Mixed-methods (c), Qual. focus, Pre & post test, Comparison groups	Career Adapt-Abilities Inventory (2012), Focus group Interviews & Observation, CIP	Comparison	Group	In-person	87	high-school students	17 yrs	Short	Increased career adaptability, transitions management & self-construction	N/A		PR, CR	South Africa
Maree & Hansen, 2011	Q3	Psychology	Mixed methods	LDC intervention, Over 3 months, CAAI, Myer-Briggs Inventory & CIP, Genogram, Lifeline, Collage, Idioms, Role models	-	Individual	In-person	1	unwed pregnant teenager	N/A	Short	Improved Self-insight, experience of self & proactive behaviour	N/A		PR, CR	South Africa

Coding for the outcome types: PR - Psychological resource, CR - Career resource, CO - Career outcomes (concrete); Rules of thumb for effect sizes: Pearson´s r^2 = 0.01 indicates a small effect size, r^2 = 0.09 indicates a medium effect size, and r^2 = 0.25 a large effect size. Cohen´s d = 0.2 indicates a small effect size, d= 0.5 a medium effect size, and d = 0.8 a large effect size. Partial Eta Squared: $\eta 2 = 0.01$ indicates a small effect. $\eta 2 = 0.06$ a medium effect, and $\eta 2 = 0.14$ indicates a large effect.

Finally, Table 3 presents an overview of all peer-reviewed qualitative CLD studies (n = 41) published to this date sorted by the year of publication from the most recent to the oldest.

Table 3. An overview of qualitative CLD intervention studies published between 2009 - 2023.

Paper	Journal	Area	Method	Approach	Setting	Format	Size	Sample	Age	Scope	Outcome	Type	Nationality
Maree & Magere, 2023	Q1	Career guidance, counselling & developme nt	Qualitative	Single case, CCC for 8 weeks, Interviews, Observation & Career Interest Profile, CIP, 2017)	Individual	in person	35	High school students	18 yrs	Short (no follow-up)	Increased career decision-ma king capacity, sense of psychologic al self, career adaptability, and ability to make informed career decisions	PR, CR	Tanzania
Zatti & Luna, 2022	Q4	Psychology	Qualitative	Semi-structur ed interview, CAAS	Individual	In-person	6	University students	23 yrs	Short	Improved Career adaptability	CR	Brazil
Park et al., 2021	Q2	Sustainabili ty & Sustainable developme nt	Qualitative	Interviews, Observations, Participatory Action Research approach	Both	In-person	4	Staff members from org.. working with at-risk latin youth	N/A	Short	Improved Career readiness; Social emotional learning skills	PR, CR	US, Boston
Maree & Maree, 2021	Q2	Education	Qualitative	Group interviews, 7x sessions, 40-60 mins each, CIP, Portfolio activities (eg. reflections)	Group	In-person	12	High school students	13 yrs	Short	Improved learning and future career attitudes	PR, CR	South Africa
Da Silva et al., 2020	Q2	Career guidance, counselling & developme nt	Qualitative	Case study, 10 weekly 50 min sessions, CAAS (2012) & CDSU (2019)	Individual	In-person	1	ug university student	24 yrs	Short	Improved Autobiograp hical narratives; Innovative moments	PR	Brazil
Tian et al., 2020	Q2	Career guidance, counselling & developme nt	Qualitative	Case studies Interviews	Individual	In-person	2	Male and Female adults	27 yrs	Short	Clients Reflection, Reflexivity	PR	China
Murat & Ozdemir, 2020	Q4	Education	Qualitative	CCT interviews	Group	In-person	15	high school students (rural area)	17 yrs	Short	Improved career adaptability; career construction, Self-explorat ion, Responsibili ty- taking	PR, CR	Turkey
Ronkainen, Sleeman & Richardson, 2020	Q3	Sports Coaching	Qualitative	CCT interviews	Individual	In-person	10	Football coaches	29 yrs	Short	Improved career development ; Coach identity	CR	UK
Lindo & Ceballos, 2020.	Q3	Creativity	Qualitative	Child & Adolescent Career Construction Interview (CACCI), 7 weeks Case study	Individual	In-person	1	Child (6th grader)	12 yrs (N/A)	Short	Improved career construction; career development	CR	US
Ronkainen & Ryba, 2020	Q1	Sports Coaching	Qualitative	CCT interviews, Case study	Individual	In-person	17	Athletes	18 yrs	Short	Improved Athletic identity building; futuring	PR, CR	Finland

Paper	Journal	Area	Method	Approach	Setting	Format	Size	Sample	Age	Scope	Outcome	Type	Nationality
Maree, 2020	Q2	Education	Qualitative	Case study, CCI, CPI	Individual	In-person	1	Male adult (Zulu speaker)	27 years	Short	Improved Self-reflexivity, Autobiographicity, Awareness of subconscious work beliefs	PR, CR	South Africa
Wafula, 2020	Q3	Career guidance, counselling & development	Qualitative	LDC, Group Poetry therapy, MCS workbook, 5 sessions, 60 mins	Group	In-person	12	Undergraduate students	18 yrs	Short	Career story & personal narrative transformation	PR, CR	Kenya
Yang, 2019	Q1	Education	Qualitative	Life Journal into Future (LJF), Lifeline, Career writing, TED like presentations, 5 weeks	Both	In-person	132	Undergraduate students	17 yrs	Short	Career exploration & management; career agency & identity	CR	Taiwan
Robinet, Cohen-Scali & Pouyaud, 2019	Q4	Psychology	Qualitative	Life Design Counselling Dialogues (LDCD, 2014), Case study	Individual	In-person	1	Laid-off adult (unemployed)	50 yrs	Short	Increased resilience & innovative moments	PR, CR	Belgium, France
Ronkainen & Ryba, 2018	Q1	Vocational & Career psychology	Qualitative	Low-structured Interviews,	Individual	In-person	17	high-school elite athletes	17 yrs	Short	Improved career development, future imagination & identity	PR, CR	Finland
Kobus & Maree, 2017	Q2	Education	Qualitative	Case study, CCI	Individual	In-person	1	Afro-American man	43 yrs	Short	Improved sense of purpose, direction and dealing with fear	PR	South Africa
Setlhare, Wood &, Meyer, 2017	Q2	Education	Qualitative	Reflections, Group discussions, 6 steps process	Individual	In-person	10	teachers in under resourced school	N/A	Short	Improved Personal & Professional agency	PR, CR	South Africa
do Céu Taveira et al., 2017	Q2	Education	Qualitative	, Case study, LDC intervention, 3 sessions	Individual	In-person	1	Adult male	29 yrs	Short	Positive psychological change through therapeutic alliance	PR	South Africa
Barclay & Stoltz, 2016	Q2	Career guidance, counselling & development	Qualitative	Life Design Group (LDG), CCI items, Case studies	Individual	In-person	3	undergraduate students	18 yrs	Short	Decreases in career uncertainty and indecision; Increases in readiness for making academic major and career decisions; Student career development	CR	US
Reid, Bimrose & Brown, 2016	Q1	Vocational & Career psychology	Qualitative	CCI, intervention, IPR	Individual	In-person	2	adults	48 yrs	Short	Improved Reflexivity	PR	UK

Paper	Journal	Area	Method	Approach	Setting	Format	Size	Sample	Age	Scope	Outcome	Type	Nationality
Pouyaud et al., 2016	Q1	Vocational & Career psychology	Qualitative	LCDD interviews	Individual	In-person	3	participants	35 yrs	Short	Improved Reflexivity self-construction, identity change	PR	Canada & France
Hartung & Vess, 2016	Q1	Vocational & Career psychology	Qualitative	CCI interview, IPR	Individual	In-person	1	female	24 yrs	Short	Improved Self-reflection, Action-taking	PR	US
Cardoso et al., 2016	Q1	Vocational & Career psychology	Qualitative	CLD Interviews	Individual	In-person	4	Adolescents	18 yrs	Short	Role of Reflexivity, Affective processes and awareness, Meaning construction	PR	Portugal
Setlhare-Meltor & Wood, 2016	Q2	Career guidance, counselling & development	Qualitative	Case study, CCI interview	Individual	In-person	1	child (from the street)	21 yrs	Short	Improved career narratability	CR	South Africa
Maree, 2016	Q1	Vocational & Career psychology	Qualitative	CCI interview, IPR procedure	Individual	In-person	2	Clients	33 yrs	Short	Improved Reflexivity; Self-reflection	PR	South Africa
Taylor & Savickas, 2016	Q1	Vocational & Career psychology	Qualitative	Case studies, Pictorial Narratives (2016) & MCS (2012	Individual	In-person	2	Clients	48 yrs	Short	Improved Agency, Reflexivity	PR, CR	US
Di Fabio, 2016	Q2	Career guidance, counselling & development	Qualitative	CCI interview, Career Counselling Innovative Outcomes (CCIO), Case study	Individual	In-person	1	female final-year engineering student	25 yrs	Short	Improved self-awareness of career & life paths	PR, CR	Italy
Maree & Twigge, 2016	Q1	Psychology	Qualitative	Semi-structured Interviews, CIP, CCI, Timeline, Videoclips, Collage, 6 weeks, Case studies	Individual	In-person	6	Emerging adults	24 yrs	Short	Increased sense of Self-awareness & Relational-Moral self & Social awareness	PR, CR	South Africa
Maree, 2016	Q2	Career guidance, counselling & development	Qualitative	CCI interviews, Using Life Portrait (8 steps), Case study	Individual	In-person	1	mid-career Afro-American man	35 yrs	Long-term (21 months)	An improved sense of self & ability to deal adaptively with life challenges	PR, CR	South Africa
Maree & Symington, 2015	Q3	Psychology	Qualitative	8 LDC sessions, Collective case study	Individual	In-person	5	high-school students	16 yrs	Short	Improved career adaptability	CR	South Africa
Ryba, Ronkainen & Selänne, 2015	Q1	Vocational & Career psychology	Qualitative	Interviews, 3 sessions, 5 hours per athlete, Case studies	Individual	In-person	2	Elite athletes	28 yrs	Short	Improved Career construction; Career identity	CR	Baltics & Finland
Maree, 2015	Q1	Vocational & Career psychology	Qualitative	CCI interviews	Individual	In-person	4	Clients	39 yrs (note: 65 yr participant)	Short	Career life stories change	CR	South Africa

Paper	Journal	Area	Method	Approach	Setting	Format	Size	Sample	Age	Scope	Outcome	Type	Nationality
Maree, 2015	Q3	Psychology	Qualitative	CCI, CIP, CAAS, Lifeline, Case studies	Individual	In-person	6	Clients	19 yrs	Short	Overview of CLD research in SA (based on 6 case studies): Improved Self-understanding, self-construction, career-life perspective, Action & new hope	PR, CR	South Africa
Cardoso et al., 2014.	Q1	Vocational & Career psychology	Qualitative	CCC intervention, 3 sessions, Case study, IMCS & Return to Problems Coding System (RPCS)	Individual	In-person	1	College student	N/A	Short	Personal change; Innovative Moments	PR, CR	Portugal
Maree, 2014	Q3	Career guidance, counselling & development	Qualitative	Case study, CCC interview, Life Portrait	Individual	In-person	1	Female homosexual client	43 yrs	Short	Improved sense of self & personal authorship	PR	South Africa
Hughes, Gibbons & Mynatt, 2013	Q2	Career guidance, counselling & development	Qualitative	Case study, CCC	Individual	In-person	1	Underprepared freshman student	N/A	Short	Perspective broadening and new action-inspiration	PR	US
Maree & Crous, 2012	Q3	Psychology	Qualitative	2 sessions, 90 mins, 1 month period, Collage, Family constellation, Lifeline, Career style interview, Asset map, Life chapters, Case study	Individual	In-person	1	Abandoned adolescent female	18 yrs	Short	Signs of greater career adaptability and proactivity	CR	South Africa
Maree & Hancke, 2011	Q3	Psychology	Qualitative	2 x 90 min sessions a week, 1 month, CAAI, CIP, MBTI, Case study	Individual	In-person	1	Abandoned adolescent with stutter	15 yrs	Short	Improved career choice making, empowerment & agency	CR	South Africa
Vanhalakka - Ruoho, 2010	Q2	Career guidance, counselling & development	Qualitative	Written narratives, Narrative analysis (1998)	Individual	In-person	146	high-school students	16 yrs	Short	Improved, Self-regulation & Relatedness	PR	Finland
Maree, 2010	Q3	Psychology	Qualitative	Career Story Interview, Three Anecdotes Technique	Individual	In-person	1	female	26 yrs	Short	Improved complexity confrontation, higher motivation & proactivity	PR, CR	South Africa
Maree & Pollard, 2009	Q3	Psychology	Qualitative	Case study, LDC intervention Semi-structured, Observation	Individual	In-person	1	youth person	19 yrs	Short	Improved involvement, Self-insight, Proactive behaviour & attitude change	PR	South Africa

4. Synthesis of Results

4.1. Published papers

The first finding regards the history and evolution of the CLD as a distinct scientific field of discipline. Our findings indicate that since the publication of the first empirical CLD intervention study by Maree & Pollard (2009), a total of 86 peer-reviewed CLD studies have been published. This suggests that as an intervention modality and scientific field, Life design became the subject of rigorous empirical study 14 years ago. As illustrated below in Figure 3, since its beginnings in 2009, CLD research has witnessed a gradually increasing yet fluctuating trend marked with particular inflection points in the years of 2016, 2020 and 2022. Possible reasons behind this will be further discussed.

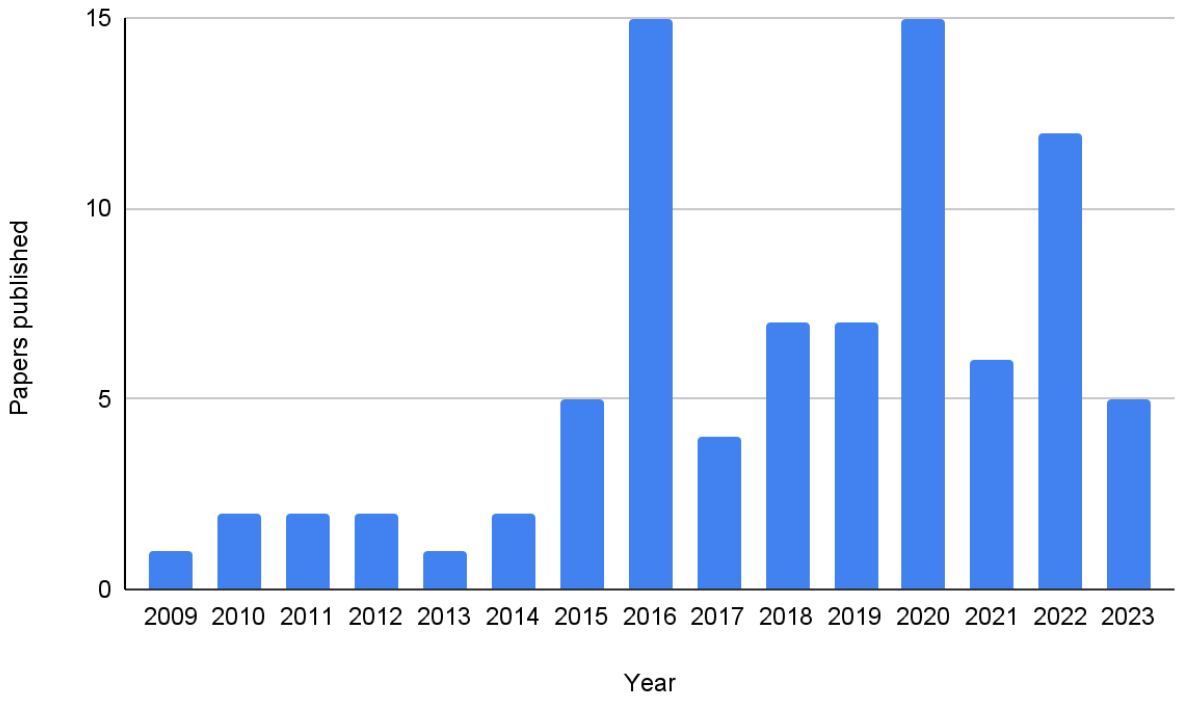


Figure 2. Publication trend of all empirical CLD intervention studies during 2009-2023 period (until June 2023).

4.2. Journal outlets

The second finding pertains to the primary journal outlets for the 86 eligible CLD publications. To assess journal quality, quartile rankings based on Scimagojr 2023 were used instead of ABS rankings, considering the diverse nature of the papers that extended beyond management journals. As depicted in Figure 2, the majority of CLD studies (n = 60) were published in Q1 or Q2 outlets (32 and 28, respectively), while Q3 and Q4 journals contributed the remaining 26 papers (21 and 5, respectively). The reviewed CLD studies spanned 26 international peer-reviewed journals, with 9 falling in Q1, 6 in Q2, 7 in Q3, and 4 in Q4. Key publishing avenues included: 1. Journal of Vocational Behavior (Q1; n = 15), 2. Career Development Quarterly (Q2; n = 9), 3. South African Journal of Education (Q2; n = 7), 4. International Journal for Educational and Vocational Guidance (Q2; n = 7), 5. Journal of Psychology in Africa (Q3; n = 7) & 6. Frontiers in Psychology (Q1; n = 6), alongside further 6 Q1 ranked journals (n = 11).

4.3. Research areas

The third finding regards the research areas and positioning of the eligible 86 CLD papers. Here, our data reveals that the reviewed CLD studies typically contributed to one of the following nine research fields: 1. Career Guidance, Counselling & Development (n = 23), 2. Education (n = 18), 3. Psychology (n = 18), 4. Vocational & Career Psychology (n = 16), 5. Child & Youth Development (n = 4), 6. Sustainability & Sustainable development (n = 3), 7. Sports Coaching (n = 2), 8. Professional Training & Development (n = 1), as well as 9. Creativity (n = 1).

4.4. Methods

The fourth finding regards the evolving choice of research methods used to capture the efficacy of the CLD interventions. As illustrated in Table 1, our analysis revealed that: (1) Qualitative studies, most commonly consisting of case studies, interviews and observations, accounted for

nearly a half (n = 41) of the total published CLD studies. (2) Mixed-method studies, most often consisting of a predominantly qualitative design typically with additional quantitative instruments (typically surveys), which accounted for over one quarter (n = 28) of total published CLD studies. (3) Quantitative studies, most typically employing surveys, experimental and quasi-experimental designs, accounted for approximately one fifth (n = 17) of total published CLD studies. In addition, from our available data illustrated in Table 1, we can clearly observe the changing trend with regards to the chosen research methodologies over the years. For example, in the first 5 years of the CLD field (from 2009 - 2014), a total of 10 empirical papers have been published, out of which 7 were qualitative, 2 quantitative, and 1 employing mixed-method designs. In the next five years (between 2015 - 2019), a total of 38 empirical papers were published, out of which 20 employed qualitative, 8 quantitative, and 10 mixed method designs. Finally, in the most recent years (between 2020 - 2023), CLD field witnessed a total of 38 empirical CLD studies published (till the end of June 2023), out of which 12 employed qualitative, 10 quantitative, and 16 mixed-method designs. Clearly suggesting an increasing shift towards more integrative and quantitatively-focused methods among researchers.

4.5. Approaches

The fifth finding is that despite their similar theoretical foundations, different life design practices and tools were found to be used across our 86 studies. Firstly, our findings show that the vast majority of published empirical studies (n = 84) employed different forms of Career Construction Counselling based CLD methods or tools, mostly based on the pre-existing theoretical work and intervention models designed by Savickas (2019), Maree (2017), or Hartung (2012) amongst others. These tended to be primarily in the form of interventions relying on approaches such as Career Construction Counselling & Interviews (CCC & CCI; Savickas, 2019), Career Maturity Inventory (CMI; Savickas & Portfeli, 2011), My Career Story (MCS;

Savickas & Hartung, 2012), Maree Career Matrix (MCM; Maree, 2013), Career Interest Profile (CIP; Maree, 2010) or Design My Future (DMF; DiMaggio, 2016) to name a few. Secondly, only one study was found utilising the more recent Stanford Life Design framework incorporating exercises from design-thinking and positive psychology, also known as Design Your Life (DYL; Burnett & Evans, 2015), and another exceptional case relying on a fully computerised CLD-based software was recorded (Leung et al., 2022).

4.6. Controls & Settings

The sixth finding concerns the utilisation of control or comparison groups in quantitative studies (n = 45). Only about one third (n = 16) of these studies, encompassing purely quantitative or mixed-method designs, incorporated either a control (n = 13) or a comparison group (n = 3). Upon closer examination, the majority of CLD interventions occurred in an individual (1-on-1) setting (n = 57), often as part of individual career counselling interventions, followed by group-based settings (n = 26) in collective vocational development programs, and a few combined both settings (n = 3). Among individually delivered studies, the majority (n = 36) utilised purely qualitative methods, 19 used mixed-methods, and only 2 employed purely quantitative designs. In contrast, group-based studies saw 14 authors relying on quantitative methods, 9 on mixed-methods, and 3 on qualitative designs. These figures suggest that, perhaps unsurprisingly, face-to-face CLD interventions were commonly associated with qualitative research designs, while group-based CLD studies were predominantly examined using quantitative research methods.

4.7. Format

The seventh finding concerns the type of format in which the CLD interventions were delivered. Specifically, we were interested whether these interventions were either facilitated physically

in-person (traditional classroom model), virtually online (digital model), or both (hybrid model). Closer investigation of the main findings from Table 1 shows that the majority of CLD interventions were fully delivered in a traditional in-person format (n = 78), followed by a digital online (n = 4), and a blended hybrid format using both approaches (n = 4). The earliest use of a digitally delivered CLD intervention in our dataset was recorded in 2016 by Nota, Santilli & Soresi. Furthermore, our findings also recorded a unique outlier case of CLD intervention delivered in an unusual way and scale through the use of a fully computerised CLD-based software (Leung, 2022).

4.8. Sample, Size & Age

The eighth finding focuses on sampling, size, and participant ages in the 86 CLD studies, revealing a diverse range of samples. Notably, studies were conducted with primary school children (7-12 yrs, n = 3), high-schoolers (13-17 yrs; n = 27), young adults (18-26 yrs; total n = 33, including university students, n = 15), and older adults (26-50 yrs, n = 10). Specific populations included vulnerable, marginalized, and ethnic minority groups (n = 9), people with disabilities (n = 4), sports athletes and coaches (n = 4), school teachers (n = 1), career counselors (n = 1), medical doctors in training (n = 1), entrepreneurs (n = 1), and unemployed individuals (n = 4), among others. Youth and young adults, especially within secondary, tertiary, and to a lesser extent primary school contexts, were the most commonly studied sample groups in CLD research. Participant ages across all studies ranged from 10 to 65 years (M = 22.86 yrs, SD = 10.48 yrs). To better understand average sample size, outliers were removed (Yang, 2019, n = 132; Vanhalakka-Ruoho, 2010, n = 146; Leung, 2022, n = 2,935). The recorded sample size ranges, average sizes, and standard deviations for each study category are presented below.

Table 2. Sample sizes of all eligible CLD intervention studies.

	Qualitative	Mixed-method	Quantitative
Total number	39	27	17
Sample range	1 - 35	1 - 236	1 - 200
Mean	5.07	28.96	76.45
SD	6.79	54.93	52.55

4.10. Scope, Outcomes & Benefits

The tenth finding focuses on the temporal scope of CLD studies and their key outcomes. Among the available studies (n = 78), the majority concentrated on immediate and short-term outcomes. In the smaller group using a longitudinal design (n = 8), follow-up periods ranged from 1 to 21 months, with 3 months being the most common. Empirical evidence from nearly all CLD studies (except one) demonstrated positive associations with or direct contributions to psychological (n = 19), career-related (n = 23), or both types of outcomes (n = 43). Notably, the promotion of psychological resources (PR) showed benefits such as an enhanced sense of personal reflexivity, self-awareness, self-esteem, self-efficacy, agency, proactive behaviour, courage, meaning-making, optimism, hope, and resilience, among others. On the other hand, career resources (CR) yielded benefits in the form of an increased sense of career exploration, narratability, adaptability, decision-making, self-efficacy, professional transitions management, readiness, life orientation, perception of career development and employability, and increased vocational certainty and career identity, among others. Interestingly, no study provided evidence that CLD interventions directly led to concrete and tangible career outcomes.

4.11. National Context

The eleventh finding reveals the insights related to the geographical and cultural contexts of the examined studies. Our findings suggest that the interest in CLD has clearly sprung up

internationally across the world with each major continent (except Australia) having at least some degree of representation in terms of the scientific publications and research efforts. From the examined studies, the parts of the world and countries spearheading the empirical CLD research over the last 14 years were: 1) Africa (n = 39 papers, led by South Africa), 2) Europe (n = 27 papers, led by Italy), 3) North America (n = 11 papers, led by US), Asia (n = 6 papers, led by China), and finally South America (n = 3 papers, led by Brazil). In sum, overall these numbers show that geographically speaking, most of the published CLD studies have come from countries in the global South (n = 42), followed by the West (n = 38) and the East (n = 6). Possible socio-cultural differences and reasons behind these findings are further discussed.

4.12. Efficacy & Effect sizes

The findings highlight the effectiveness of Career & Life Design (CLD) interventions in promoting diverse psychological and career-related outcomes. Out of 45 published quantitative or mixed-methods CLD studies, 26 were eligible for effect size computation. Some studies did not report final effect sizes nor necessary information to compute them, resulting in 23 studies for the final analysis. For three studies using Cohen's r, we manually calculated Cohen's d. Among the final studies, only one study showed no effects, while 5 demonstrated low to moderate effects, 9 moderate to large effects, and 9 large effects. On average, CLD interventions yielded moderate to large effects. Notably, larger effects were observed in in-person group settings with control groups (n = 10), online formats also showed good effects (Low to Moderate, n = 2; Moderate to Large, n = 1; Large, n = 3), and longitudinal studies (n = 7) consistently demonstrated moderate to large effects. Career adaptability, decision-making, and self-efficacy showed larger effects compared to other outcomes. Implications of these findings are discussed in the following section.

5. Discussion

5.1. Key findings

Amidst the evolving world of work, new models are needed to help workers navigate this increasingly more volatile, uncertain, complex and ambiguous landscape (Savickas, 2015). These shifts lead to changing needs and prompting discussions on crafting careers and lives with greater flexibility, personalization and adaptability (Guichard, 2005). The present paper aimed to provide one of the first comprehensive reviews of the documented Career & Life Design published intervention studies deployed in their diverse and evolving forms (Savickas et al., 2009; Hartung, 2013; Burnett & Evans, 2015). The present analysis, covering empirical studies from 2009 to 2023, identifies several noteworthy trends and considerations.

First, the empirical exploration of CLD began around 2009, with fluctuations in interest, particularly notable in 2016, 2020, and 2022. These inflections coincide with seminal theoretical papers, global events like the COVID-19 pandemic, and societal shifts such as the Great Resignation (Burnett & Evans, 2020). These events likely influenced the interest in innovative career and life guidance approaches like CLD. While CLD research is gaining recognition, our data reveals that only about one-third of studies are published in top Q1 journals. This raises questions about research quality and positioning. CLD's multidisciplinary nature could cater to other outlets covering fields such as Organizational behaviour, Human Resource Management, Leadership Development, Professional Coaching & Training, or Entrepreneurship, where its potential remains largely unexplored (Guichard, 2013).

CLD interventions exhibit positive psychological and professional outcomes, most notable evident in increased self-awareness, career exploration, self-efficacy, resilience and vocational identity to name a few (Reid, Bimrose & Brown, 2016; Maree & Hansen, 2011; Maree & Nortje,

2023; Robinet, Cohen-Scali & Pouyaud, 2019). However, concrete career outcomes directly attributable to CLD interventions remain elusive, necessitating longitudinal studies. In addition, our findings also suggest that to this date only a limited CLD work has been done with vulnerable and underprivileged populations, including people with disabilities, unemployed, & older populations (aged 50+) that too often tend to be marginalised and overlooked (DiFabio & Maree, 2012). Based on the current findings, it is reasonable to assert that these specific groups could greatly benefit from emerging CLD approaches. For instance, considering the issue of ageing population and the prolongation of active life, senior retiring individuals in particular could be an interesting group for further interventions (Froidevaux, 2018).

Next, the evolution of CLD research from qualitative to quantitative methodologies is observed, in line with the calls for more rigorous examination (Savickas et al, 2009; 2015; Wehmeyer et al, 2019; Wen et al., 2022). However, experimental studies with control groups remain limited, questioning the isolating of CLD effects. The predominance of short-term impact studies highlights a gap in understanding the long-term effects of CLD interventions. Recent years witness the diversification of CLD intervention formats, including group-based settings, demonstrating scalability and access (Calapa, 2020; Burnett & Evans, 2020). The integration of CLD with digital solutions emerges as an effective and scalable intervention, providing opportunities for broader dissemination. The intersection of CLD with technology, including fully computerised software and AI, presents promising avenues for future research (Leung et al., 2022). Finally, the geographical distribution of CLD research reveals active participation from countries worldwide. South Africa emerges as a leader in CLD research, driven by qualitative works. Italy and the United States represent hubs of CLD research, reflecting their contribution to seminal models and approaches (Savickas et al., 2009; 2012; Burnett & Evans, 2015).

5. 2. CLD Themes, Patterns & Differences

Career & Life Design (CLD) traces its origins to Mark Savickas's Career Construction Theory, marking a departure from deterministic career theories towards a dynamic, individualised, and lifelong approach (Savickas, 1997). Over the years, CLD has responded to contemporary career complexities, emphasizing adaptability and continuous life-long learning (Savickas, 2011; Nota et al., 2020). Our data shows that the evolution of CLD is marked by collaborative global efforts, resulting in diverse perspectives, models, and practices. Broadly speaking, two prominent schools of CLD interventions emerge from the data. The traditional counselling school, rooted in Savickas's work, predominantly employs individual settings (Savickas, 1997; Santilli & Hartung, 2022). The second more recent collaborative design-thinking CLD school, seems to draw main inspiration from the Stanford Life Design Lab (Burnett & Evans, 2015; 2020) integrating design-thinking and positive psychology principles in group-based settings (Kernbach & Bresciani, 2020). However, unlike its predecessor, the more recent Stanford-based collaborative design-thinking school remains largely understudied, with only one empirical peer-reviewed study published to this date (Conyers, Tackett & Wright, 2021). Although some other findings indicate positive outcomes, such as increased career development agency, reduced psychological distress, and enhanced positive psychological capital (Oishi, 2012; Reilly, 2013; Bresciani & Kernbach, 2020), these preliminary studies did not meet the necessary inclusion criteria. It is worthwhile to note that both schools share common epistemological roots, emphasizing reflexivity, autobiographicity, narratability, intentionality, and activity in life and work (Savickas et al., 2009). They draw on social constructionism, narrative psychology, and life designing theories (Savickas et al., 2011). Despite shared foundations, distinctions arise in settings, processes, and tools used during interventions. Our findings show that distinctive CLD signature practices emerged from the two schools. Traditional approaches rely on tools like Career Construction Counselling & Interviews, Career Maturity Inventories, My Career Story, Maree

Career Matrix, or Career Interest Profile (Savickas, 2019; Savickas & Portfeli, 2011; Savickas & Hartung, 2012; Maree, 2013; Maree, 2010). In contrast, recent CLD practices incorporate Stanford's Design Your Life (DYL) exercises, including Work-view, Life-view, Radical Collaboration & Experimentation, or Prototyping interview and experiences (Burnett & Evans, 2015). This emerging distinction in practices suggests the ongoing evolution of CLD. As CLD continues to evolve, researchers must not only revisit theoretical definitions must also continue to rigorously evaluate the efficacy of these evolving approaches (Mcllveen & Luke, 2023).

6. Implications

Our research suggests a set of key implications for wider policy and practice. First, the integration of Career & Life Design into future HRM, leadership, and coaching practices holds significant promise. CLD could enhance onboarding procedures and contribute to team-building efforts, providing a structured framework for continuous professional development and lifelong learning within organizations. By strategically incorporating CLD into HRM alongside existing job-crafting support (Wrześniewski & Dutton, 2001), companies can empower employees to periodically reflect, reassess, and adapt their thoughts and behaviors in alignment with their evolving workplace. Moreover, extending CLD's impact beyond an employee's tenure, companies can further offer dedicated resources and support for departing workers and leaders, aligning with Environmental, Social, and Governance (ESG) commitments and fostering a more positive brand image (Goswami, 2015).

Second, the consideration of CLD for entrepreneurship education and training emerges as another valuable strategy. Entrepreneurs tend to work in highly uncertain and volatile contexts, and CLD tools and practices could help equip them with relevant mindsets and skills, fostering greater resilience, a learning orientation, and proactive career management, which are all critical

for entrepreneurial success (Tolentino et al., 2014). This integration could not only enrich the understanding of the entrepreneurial journey but also enhance the effectiveness of founders' efforts by further aligning entrepreneurs' personal aspirations with their venture goals.

Third, the potential adoption of AI-powered computerized CLD solutions offers an intriguing avenue for the future of career counseling and coaching. An AI CLD-based co-pilot or coach could play a supportive role in participants' life design processes, assisting in ideation, experimentation, prototype testing, and feedback reflection. In addition, incorporating emergent technologies like virtual or augmented reality introduces possibilities for gamified experiences, revolutionising career counseling and simulation tools in the future. Such a tech-enabled approach has the potential to make career counseling more accessible, engaging, and effective.

7. Limitations

We must also acknowledge the limitations of our present research. Firstly, the potential presence of publishing bias must be acknowledged, as our study primarily includes published works with notable effects and results, possibly omitting studies with no discernible effects. This risk of bias may raise concern about the comprehensiveness of our findings. Moreover, the limited number of quantitative experimental studies featuring randomised controls poses a challenge in confidently assessing the actual efficacy of the intervention. The scarcity of such rigorous study designs underscores the need for further research to establish more robust conclusions. It is also important to note that most studies' reliance on self-report measures invites the risks of deception or social desirability bias. Diversifying the methodological approaches could enhance the credibility of future findings. As stated, our data collection concluded in June 2023, and new studies published thereafter might offer additional insights not considered in our final analysis. Finally, broader cultural and contextual influences on life design´s implementation and measured

outcomes should be considered, recognizing that different countries and cultures may vary in their responsiveness to CLD. These limitations collectively highlight areas for future refinement and expansion in the understanding of effectiveness and applicability of CLD interventions.

8. Future research

The present findings open up a range of promising avenues for future research. Future research would benefit from adopting more rigorous experimental approaches, incorporating random assignment of participants to experimental and control groups to establish causal relationships. Active controls and comparison groups, particularly against established interventions like mindfulness training, could provide valuable insights into the unique contributions of CLD. Longitudinal data collection is crucial for understanding the sustainability of participants' outcomes after CLD programs, addressing current gaps in our understanding of the practical efficacy of CLD interventions. There is a pressing need for larger and more diverse samples, including individuals with various backgrounds such as disabilities, unemployed, elderly, migrants, minority groups, or those incarcerated. Examining the effectiveness of CLD interventions across diverse populations would contribute to a more inclusive understanding of its impact on constructing new futures and navigating life transitions. The effectiveness of online CLD training programs opens up opportunities for future research. Investigating the scalability and reach of online group-based CLD training programs can enhance accessibility, reaching a broader audience and exploring the dynamics of virtual CLD interventions. Future research should explore relationships between life design and other relevant constructs, such as the development of a strong career identity (Ibarra, 2004), a sense of authenticity (Wood et al., 2008), and calling (Dik et al., 2012). Understanding how CLD influences engagement in leadership, entrepreneurial activities, or fosters creative thinking could open new avenues for organizational and entrepreneurial forms of life design. Furthermore, the current wave of technological revolution offers a promising avenue for future CLD research (Hirschi, 2018). Exploring computer and AI-assisted CLD solutions, including the integration of AI tools like ChatGPT as personal at-home career assistants, can enhance idea generation and problem-solving before and after CLD

sessions. Future researchers should also investigate potential drawbacks or "dark sides" of CLD interventions. Addressing issues such as planning paralysis and anxiety can provide a more nuanced understanding of the complexities within CLD, acknowledging that interventions may not always yield exclusively positive outcomes. Qualitative research avenues should also continue to be explored. Here, delving into the paradoxes of the life design process, by examining the inherent tensions between intentionality and spontaneity in the career planning could contribute to a more comprehensive view of career construction processes, enriching the current literature with further nuanced insights.

9. Conclusion

In conclusion, our comprehensive review of Career & Life Design (CLD) intervention studies provides insight into CLD´s state of the art, critically evaluates the evidence behind its efficacy, and illuminates the avenues for future exploration. As illustrated, the evolving nature of work demands innovative models to navigate uncertainty, and CLD emerges as a promising approach. Our analysis reveals distinct schools of CLD interventions, rooted in career counselling tradition and novel collaborative design-thinking perspectives, offering varied approaches and tools, showcasing the field's evolving nature. Likewise, the rise of digital solutions, especially in the post-COVID era, presents new possibilities for more scalable CLD formats and interventions, which have shown to be reasonably effective. Overall, our findings indicate a growing interest in empirical CLD research, marked by inflection points coinciding with the publication years of seminal theoretical papers and relevant global events. While the field has garnered increased attention, challenges persist, notably in achieving publication in top-tier journals, prompting the call for more rigorous methodologies. Overall, our findings underscore the diverse range of positive outcomes associated with CLD interventions on both personal and professional levels. However, a notable gap persists in establishing concrete career outcomes, necessitating more longitudinal studies. Furthermore, the underrepresentation of vulnerable populations in CLD research also calls for more diverse and equitable interventions to address their unique

challenges. Importantly, the potential impact of CLD extends beyond its traditional applications in professional counselling or education alone. In HRM, leadership, and coaching fields, CLD could contribute to better onboarding, team-building, and continuous professional development. Entrepreneurship education stands as another unexplored frontier where CLD may instil resilience and proactive career management skills crucial for entrepreneurial success. Additionally, the integration of computerized and AI-powered CLD solutions presents another exciting prospect that could offer scalable and more personalised guidance with the potential to enrich career counselling practice. While our study sheds light on the promising aspects of CLD, it is essential to also acknowledge its limitations. Potential publishing bias, limited quantitative experimental studies, and the reliance on self-report measures pose challenges. Future research directions include rigorous experimental and longitudinal designs, more diverse samples, and exploration of CLD´s potential drawbacks. In summary, this review provides a foundational understanding of empirical CLD interventions, emphasising its potential in a wide range of domains and signalling the need for continued research to refine methodologies, broaden inclusivity, and unlock the full potential of CLD's impact on individuals' careers and lives.

10. References

Arthur, M. B. (1994). The boundaryless career [Special issue]. Journal of Organisational Behaviour, 15(4).

Benko, C., & Weisberg, A. (2007). Mass career customization. Boston, MA: Harvard Business School Press.

Bresciani, S., & Kernbach, S. (2020). A Design Thinking Approach for Designing Careers: Finding Authenticity and Increasing Self-Efficacy. In Academy of Management Proceedings (Vol. 2020, No. 1).

Burr, V. (2015). Social constructionism. Routledge.

Burnett, W. & Evans, D. J. (2015). Designing Your Life: How to Build a Well-Lived, Joyful Life. New York: Alfred A. Knopf.

Burnett, B., & Evans, D. (2020). Designing your work life: how to thrive and change and find happiness at work. Random House.

Camussi, E., Meneghetti, D., Sbarra, M. L., Rella, R., Grigis, P., & Annovazzi, C. (2023). What future are you talking about? Efficacy of life design Psy-lab, as career guidance intervention, to support university students' needs during COVID-19 emergency. Frontiers in Psychology, 13.

Caruso, L. (2018). Digital innovation and the fourth industrial revolution: epochal social changes?. Ai & Society, 33(3), 379-392.

Dik, B. J., Eldridge, B. M., Steger, M. F., & Duffy, R. D. (2012). Development and validation of the Calling and Vocation Questionnaire (CVQ) and Brief Calling Scale (BCS). Journal of Career Assessment, 20(3), 242–263. https://doi.org/10.1177/1069072711434410

Froidevaux, A. (2018). A life design perspective on the work to retirement transition. In New perspectives on career counselling and guidance in Europe (pp. 89-104). Springer, Cham.

Gini, A. (1998). Work, identity and self: How we are formed by the work we do. Journal of business ethics, 17, 707-714.

Goswami, P. (2015). Employee value proposition: a tool for employment branding. International Journal of Scientific and Research Publications, 5(12), 263-264.

Guichard, J. (2005). Life-long self-construction. International Journal for Educational and Vocational Guidance, 5, 111–124.

Hall, D. T. (1996). Protean careers of the 21st century. Academy of Management Executive, 10, pp. 8-16.

Handy, C. (1998). The age of unreason. Cambridge, MA: Harvard Business School Press.

Hirschi, A. (2018). The Fourth Industrial Revolution: Issues and Implications for Career Research and Practice. Career Development Quarterly, 66 (3), 192–204.

Ibarra, H. (2004). Working identity: Unconventional strategies for reinventing your career. HBP.

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., ... & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. Annals of internal medicine, 151(4).

Maree, J. G. (2015). Research on life design in (South) Africa: A qualitative analysis. South African journal of psychology, 45(3), 332-348.

McIlveen, P., & Luke, J. (2023). Life development and life designing for career construction. In W. B. Walsh, L. Y. Flores, P. J. Hartung, & F. T. L. Leong (Eds.), Career psychology: Models, concepts, and counselling for meaningful employment (pp. 121–142). APA.

Nota, L., Soresi, S., Di Maggio, I., Santilli, S., Ginevra, M. C., Nota, L., ... & Ginevra, M. C. (2020). Life Designing for an Inclusive, Sustainable and Equitable Future. Sustainable Development, Career Counselling and Career Education, 41-62.

Pordelan, N., Hosseinian, S., & Baei Lashaki, A. (2021). Digital storytelling: a tool for life design career intervention. Education and Information Technologies, 26, 3445-3457.

Pryce-Jones, J., & Lutterbie, S. (2010). Why leveraging the science of happiness at work matters: The happy and productive employee. Assessment and Development Matters, 2(4), 6.

Savickas, M., Nota, L., Rossier, J., Dauwalder, J., Duarte, M., Guichard, J., … van Vianen, A. (2009). Life Designing: A Paradigm for Career Construction in the 21st Century. Journal of Vocational Behavior, 75(3), 239–250.

Savickas, M. L. (1997). Career adaptability: An integrative construct for life‐span, life‐space theory. Career Development Quarterly, 45(3), 247-259.

Savickas, M. L. (2011). Life design: A paradigm for career intervention in the 21st century. Journal of Counseling & Development, 89(1), 13-19.

Savickas, M. L., & Porfeli, E. J. (2011). Revision of the career maturity inventory: The adaptability form. Journal of career assessment, 19(4), 355-374.

Savickas, M. L., & Hartung, P. J. (2012). My career story: An autobiographical workbook for life-career success. Kent, OH. www.vocopher.com.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. Journal of business research, 104, 333-339.

Tolentino, L. R., Garcia, P. R. J. M., Lu, V. N., Restubog, S. L. D., Bordia, P., & Plewa, C. (2014). Career adaptation: The relation of adaptability to goal orientation, proactive personality, and career optimism. Journal of Vocational Behavior, 84(1), 39-48.

Wehmeyer, M. L., Nota, L., Soresi, S., Shogren, K. A., Morningstar, M. E., Ferrari, L., ... & DiMaggio, I. (2019). A crisis in career development: Life designing and implications for transition. Career Development and Transition for Exceptional Individuals, 42(3), 179-187.

Wen, Y., Li, K., Chen, H., & Liu, F. (2022). Life Design Counseling: Theory, Methodology, Challenges, and Future Trends. Frontiers in Psychology, 13.

Williams, K. E., Hutchings, P. B., & Phelps, C. (2022). Beyond learning in higher education: an evaluation of the 'Life Design' initiative to improve student employability. Studies in Higher Education, 47(6), 1184-1198.

Wood, A. M., Linley, P. A., Maltby, J., Baliousis, M., & Joseph, S. (2008). The authentic personality: A theoretical and empirical conceptualization and the development of the Authenticity Scale. Journal of Counseling Psychology, 55(3), 385–399.