

**Learning from Nova Scotia Career Development Professionals: A Futures-Oriented
Theoretical Framework Developed through a Critical Realist Approach.**

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Abstract

In a rapidly changing world, sectors across society are investing heavily in anticipating and preparing for future disruptions; however, the field of youth career development has received comparatively little attention. This dissertation addresses this gap by exploring the possible futures of youth career development in Nova Scotia, Canada, with a time horizon of 2030. Career development professionals (CDPs) are increasingly facing complex challenges, including volatile labour markets, evolving educational models, and emerging generations with distinct values and expectations. Through the adoption of an engaged critical realist scholar approach, this study embedded iterative futures research methods (modified Delphi, environmental scan, and rapid realist review) within a realist-informed paradigm. The resulting Futures-Oriented Theoretical Framework was composed of five middle-range theories particularly relevant to the context of 2030. The theories identified and selected after the nine phases of data gathering and analysis are Critical Digital Literacy, Intersectionality Theory, Basic Psychological Needs Theory, Emotional Intelligence Theory, and Possible Future Selves Theory. This framework aims to support CDPs in critically and creatively designing programs, services, and interventions for Generation Z and the older members of Generation Alpha. Grounded in the Nova Scotian context, the framework is designed to be generalizable across Canadian career development settings, offering a strategic tool to help CDPs anticipate, adapt, and lead in the future of accelerating change.

Keywords: Futures research, youth career development, critical realism, engaged scholarship, evidence-based program design, realist evaluation, future of work, future of education, generation Z, theoretical frameworks, futures thinking.

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List of Abbreviations

Abbreviation	Definition
CDP	Career Development Professional
CMO	Context, Mechanism, Outcome
CR	Critical Realism
FR	Futures Research
KMb	Knowledge Mobilization
RE	Realist Evaluation
SSHRC	Social Sciences and Humanities Research Council of Canada
YES	Youth Employment Services
LMI	Labour Market Information
SCCT	Social Cognitive Career Theory
TEL	Technology Enhanced Learning
PAR	Participatory Action Research
RAMESES	Realist And Meta-Narrative Evidence Syntheses – Evolving Standards
CLA	Causal Layer Analysis
FST	Feminist Standpoint Theory
CEI	Centre for Employment Innovation
ES	Environmental Scan
RRR	Rapid Realist Review
CDL	Critical Digital Literacy
BPNT	Basic Psychological Needs Theory
EQ	Emotional Intelligence

CHAPTER ONE: INTRODUCTION

In a rapidly changing world, leaders from all sectors have increased their attention and resources to understand and anticipate changing social dynamics, consumer trends, potential future disruptions, emerging markets, and the changing nature of the workplace (Taber & Blankemeyer, 2015). Businesses and organizations spend significant resources and energy to understand these changes, but there are few examples of organizations or individuals considering what the future may hold for the broad and important field of career development. Career development, while often primarily connected with employment, represents a broader more holistic field of academic discourse and work. The Canadian Standards and Guidelines for Career Development Practitioners (2012) explains that a ‘career’ is a nuanced interplay of a sequence of work that may be paid and/or unpaid, along with learning, leisure, and other personal activities in which one engages and balances with work. Careers, then, unfold in unique ways for each person and are dynamically unfolding over long periods of time. This research, while situated within the broader field of career development, focuses more narrowly on the ‘work’ and employment readiness element of career development. Therefore, when considering career development services, this study focuses on psychosocial experiences (e.g., programs, interventions) offered by professional career development organizations that support individuals' employment goals and aspirations through intentional learning and skill development. Youth career development professionals (CDPs) working for these organizations are navigating rapidly changing labour markets, changing educational approaches, and are supporting emerging generations with different values and expectations (Ginevra et al., 2016). The implication of this rapid change for youth-focused CDPs is the increased importance and need to be critiquing and adapting their services so to best support the youth they serve.

With this grounding, this research adopted a futures perspective to identify possible future contextual layers resulting in a futures-oriented theoretical framework which provides a framework to approach program and intervention design for Gen Z youth (and older Generation Alpha youth) in the near-future (2030). With a specific focus on youth-focused CDPs working in Nova Scotia, Canada, this research proposes that career development programs and interventions that are intentionally shaped and designed by the theories outlined in the framework (chapter seven), will be more relevant and ‘successful’ in the year 2030. The year 2030 represents the year when the final cohort of Generation Z (1997-2012) could be moving toward their high school graduation and preparing to pursue further education and/or entering the workforce.

The importance and value of youth-career development services are validated as they represent psychosocial educational services which if well-designed, developmentally relevant, and industry-responsive can meaningfully contribute to the growth and success of Nova Scotia's workforce. This is of further importance, when considering the current labour shortage and aging Nova Scotian workforce (Nova Scotia Department of Labour, Skills and Immigration, 2023). It is this recognition of the importance of youth-focused career development services and the understanding the current context of change and complexity that this research situates itself. This led to the primary question of: *What theories and education models, surfaced through literature and community voice, might best be considered to support positive outcomes from youth career development in 2030?*

To engage with this question meaningfully and rigorously, futures research (FR) methods situated within an engaged scholar critical realist informed paradigm was identified as a comprehensive and valid philosophical and methodological approach. Within this broader field of philosophy and methodology, this study used an adaptation of the realist evaluation (RE) approach (Pawson & Tilly, 1997). This adapted futures-oriented RE was used to develop a

futures-oriented theoretical framework composed of middle-range theories, which is uniquely relevant to supporting career development outcomes in the future contextual layers of 2030. As will be explained further in Chapter Four, middle-range theories are a term first introduced by Robert Merton (1968) and are theories which bridge the gap between grand theories (capitalism, democracy) and more substantive/empirical observations (theories pertaining to specific contexts). Middle-range theories are more abstractive and generalizable than ‘small’ theories, but more contextually sensitive than grand theories, and are often used by researchers to inform exploratory frameworks (Kizlov et al., 2019). From a critical realist perspective, they support researchers in exploring and surface causal mechanisms relevant to the area of research inquiry. The nature of middle-range theories aligned perfectly with the intention of this research, as the developed framework is intended to be generalizable enough to apply to various organizational contexts, CDP capacities, and youth participants, but is specific to youth career development services in the year 2030. Shearn et al (2017) wrote: “...initial conceptual framework of abstract theory could be a valuable asset for formative assessments of large, complex, and messy interventions” (p. 5). This research draws heavily on the work of Pawson and Tilly (1997) and their RE model, with a specific focus on their conceptualization of program theory and causation. Their approach emphasizes that, to understand what a social program is and why it is successful, individuals need to consider three key elements. These are the Context, Mechanism and Outcome (CMO) patterns. The CMO configuration (explained in greater detail below) was used to shape and develop the research questions and data collection activities.

1. *What are the perceived desired outcomes of career development held by career development professionals and Generation Z industry stakeholders?*

2. *What important trends and emerging considerations relevant to the educational design, creation, and implementation of meaningful youth career interventions or programs are anticipated in the next 5-10 years?*
3. *What middle-range theories, models and approaches could help support positive career education outcomes considering the future context shaped by identified trends and emerging considerations?*

The philosophical stance of critical realism (CR) is explained in detail in Chapter Three; however, a brief overview of the methodological approach is offered here, as it is useful in supporting a more complete understanding of the intention of this research. Additionally, this chapter provides a brief overview of the complexity and context of career development education, specifically, youth-focused career development. It concludes with an overview of the remaining chapters of this dissertation.

Brief Synopsis: Methodological Approach

This research is, at its foundation, a FR endeavor that engages with a highly complex psychosocial educational phenomenon (career development). Keri Facer (2016), a prominent educational futurist, writes: “The future, and how to prepare for it, is a perennial concern of education. Indeed, educational discourse has an implicit future orientation” (p. 63). FR focuses on the systematic and intentional identification of signals of change (trends, emerging issues, weak signals, black swans, etc.), which helps futurists propose possible, probable, potential, and preferred futures, for the purpose of identifying actions and strategies that support movement toward a preferred future (Slaughter, 1999). More succinctly, futurists seek to understand and detect signals that could lead to change and help support people in proactively preparing (Bell, 1997). FR will be explored in greater detail in Chapter Four. One criticism of the FR field is its

lack of philosophical depth and structure (Slaughter, 1999). As such, to engage in meaningful and rigorous research on such a complex topic, a critical realist approach was adopted.

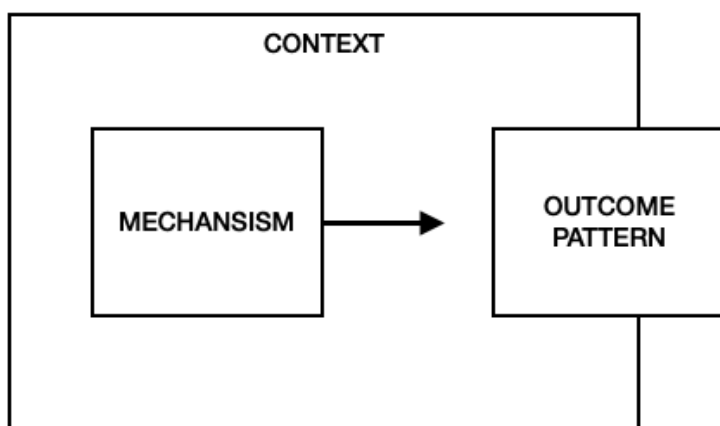
Critical Realism (CR) is explanation seeking, exploratory, and represents both a philosophical and methodological framework (Wynn & Williams, 2020). This research adopts a CR informed approach and was significantly influenced by the work of Pawson (1997, 2006) and Tilley (1997) and their contemporaries (Griffiths et al., 2022; Sayer, 2000; Danermark, 2019) and drew heavily on the work of the educational realist scholar Margaret Archer (1995). CR is positioned as an alternative between positivism and interpretivism or constructivism and was originally formulated by Roy Bhaskar (1975, 1998). Since 1975, it has been adapted and developed by scholars (Wynn & Williams, 2012; Stutchbury, 2022). The CR approach emphasizes understanding both how and why programs are successful (or not) in achieving desired outcomes within contextual constraints, and recognizing that social programs exist in open systems involving adaptation and emergence (Wheelahan, 2007). Like FR, CR approaches knowledge from a place of curiosity and flexibility, emphasizing that our understanding of events and occurrences is never complete (Vincent & O'Mahoney, 2018).

Within CR, various approaches and applications have led to a philosophically rich but dense and confusing field of literature. This research approach is nested within the theory and program development space, which supports and deepens the learning and data drawn from the FR methods. The FR methods employed in this study focused on identifying relevant trends within the domains of future of work, education, and youth development (e.g., increased youth mental wellbeing struggles; changing labour market demands), which were then analyzed and synthesized into proposed future contextual layers. As noted, the CMO configuration (Figure 1) is a common theoretical structure that underlies many realist inquiries and approaches to social and applied psychological research. Nielsen et al., (2022) articulate that this configuration

describes generative processes that dynamically influence individual attitudes and behaviours as situated within complex social contexts.

Figure 1

Context, Mechanism, and Outcome Configuration



Note. Author's depiction of the CMO Configuration Model based on Pawson & Tilley (1997).

In this study, CR perspectives and tools were used to illuminate and propose possible future contextual layers. The layers were identified using FR methods, supporting a nuanced and rigorous understanding of possible futures contexts. Typically, realist evaluators create CMO configurations specific to a particular context (people and place) (Vasey, 2022). However, this research utilizes the CMO configuration to help support the surfacing and exploration of the broad and unknown future (2030) context faced by Nova Scotian youth career development professionals. This more generalized approach is the rationale for the use of the term stating that this research is 'realist-informed,' as the depth of realist inquiry may not meet the expectations of some realist researchers. Regardless, this realist-informed approach intentionally and strategically leveraged FR methods, resulting in the gathering of rich and relevant data to address this complex line of inquiry. As mentioned, the primary objective of this study was to develop an evidence-based, future-oriented framework. This broad theoretical framework is intended to

inform future interventions and program design within the field of career development focused on Generation Z.

Brief Synopsis: Generation Z Literature Review

Career development, when considered from an educational perspective, represents a psychosocial learning environment that facilitates learning not only in tangible skills (resume writing, time management), but also in areas of identity formation, goal setting, and social-emotional learning (Howard & Ferrari, 2022). Meaningful moments of career development can occur informally through the relationships between a young person and engaged adults (or peers) in any context; however, for the purpose of this research, the context of the career development of focus was community-based programs, services, or interventions, which explicitly focused on career development and meaningful workforce attachment. While varying in approaches and activities, the primary purpose of career development services is to support emerging generations attach to the workforce and find meaningful and sustainable employment. Attachment to the workforce is understood as individuals being employed, providing services, and being paid for said services (Bell, 2012). King et al., (2016) define meaningfulness as the feeling that our life has “purpose, significance, and coherence” (p. 212). Therefore, meaningful employment would support individuals feel purpose, importance, and a sense of alignment within themselves. Research validates that meaningful employment has a direct influence on psychological well-being and human flourishing (Oswald, 2023). CDPs support these outcomes by offering programs such as one-on-one coaching around job skills, support in resume writing, and even the hosting of a job fair. Regardless of the intervention design, as stated, the intention is to support young people.

Understanding this, youth-focused CDPs strive to develop programs that are responsive and relevant to changing culture, cultural values, and societal demands. Offering accessible and

intentional career development services is critically important to support young people, as they are in a unique period of their career journey and broader lifespan development (Chen & Doherty, 2021; Kluge et al., 2019). The need to adapt the approaches and strategies of youth career development organizations is grounded in the intention to provide developmentally relevant services and learning spaces in a context directly affected by changing labour market information (LMI), broad societal trends, and the changing educational and personal expectations and needs of possible youth clients (Howard et al., 2015). As noted above, this research primary focus is on career development services being provided to Gen Z youth (1997-2012), in the year 2030. Youth career development programs and intervention services can support the ability of individuals to pursue further education, employment, and personal opportunities (Zhong & Shetty, 2021) and represent a highly complex and important educational and development endeavour situated at the intersection of various sectors, fields, and systems (discussed in further detail in Chapter Three). An important contributing factor influencing youth-focused career development services is recognizing the complex nature of the developmental stage of adolescence.

The developmental stage known as adolescence has continued to evolve since its ‘invention’ in the early 1900s (Kett, 1977; Hall, 1904; Savage, 2008) and has been shaped by broader societal discourse and world events (Johnson et al., 2011). This developmental stage encompasses significant identity formation in work, relationships, personal values, and worldviews (Feldt et al., 2021) and is marked by considerable physical, social, emotional, and cognitive changes between the ages of 10 and 25 (Schwartz et al., 2013; Resnick, 2005). The transition from childhood to adulthood is often understood as the taking on of more ‘adult’ behaviours (marriage, employment, home ownership, etc.), however, as noted by Arnett (2015) the nature of adulthood has changed, and assumption of adult responsibilities and gaining

economic independence have been extended (Johnson et al., 2011; Shulman, 2023). These changes led to the rise to the concept of ‘emerging adulthood,’ a term increasingly used to describe the extended period from the late teens through the twenties and into the early thirties (Arnett, 2000). As youth navigate the life stage of adolescence (and emerging adulthood), they naturally begin to consider their future, hopes, and concerns regarding employment and career emergence (Hirschi, 2009). While there are critiques of generational theory, such as the concern that generational boundaries create misleading and contrived categories (Waltz et al., 2020), the insights gained from generational cohort analysis remain valuable when understood as generalizations that are flexible and dependent on the individual (Mannheim, 1970; Thompson & Gregory, 2012; Strauss & Howe, 1991).

For example, there have been significant shifts within the workforce for over a decade, in part stimulated by the entrance of the millennial generation (1981–1999) into the workforce. Millennials now represent the largest generational cohort within the workforce (Egerová et al., 2021), and along with Generation Z, have influenced and changed the values and culture of their workplaces (Price et al., 2017). This brings about significant shifts within a workforce previously composed of the Baby Boomer Generation (1946-1964) and Generation X (1965-1980). As the Millennial generation entered the workforce, not only did they represent the first generation raised with the internet, but they also brought with them different values and cultural perspectives to their places of work (DeIuliis & Saylor, 2021). They bring with them different ideas, skills, principles, and creativity, which pose unique challenges and opportunities for employers. As Millennials move into management positions, Gen Z represents the next generation to enter and establish themselves in the Nova Scotian workforce.

Gen Z is pushing the changes brought about by millennials further (McGinnis Johnson et al., 2017). As of 2023, Gen Z comprises most entry-level positions within the labour market

(Gabriellova & Buchko, 2021), and while they share many traits with millennials, they do bring differing patterns of behaviour and ideals regarding work motivation and values from previous generations (McGinnis Johnson et al., 2017). Gen Z (sometimes referred to as iGen) is the most connected, diverse, educated, and sophisticated generation yet (Seemiller & Grace, 2016) and is preparing to, or has already, entered a workforce which is highly competitive, globally aware, and experiencing dramatic changes because of disruptive technology (Creed et al., 2021). The impact of the technologically literate, socially minded, globally connected, highly diverse, and educated Gen Z employee has shifted the way in which employers recruit, engage, and retain young employees (Gabriellova & Buchko, 2022). Additionally, the changes and shifts brought by Gen Z within the workforce and in broader societal discourse have resulted in employers, educators, and organizations adapting approaches, policies, and human resource practices to align with the changing demands of the new generation of young students and employees (Egerová et al., 2021).

DiMattio and Hudacek (2020) state: “There is an emerging body of literature on Gen Z students, which demonstrates that they have different needs and expectations from previous generations” (p. 1). Researchers have identified that many young employees desire increased interaction and feedback with supervisors, better work life balance, value-based work, and opportunities for development (Durocher, Bujaki, & Brouard, 2016; Egerová et al., 2021). Research also identifies that young employees have increasingly lofty standards for their employers, and that if these standards are not met, they will quickly leave their places of employment (Magni & Manzoni, 2020). Significant consideration has been given to how to best supervise and create spaces suited to Gen Z workers, as well as those in the subsequent generation, so that employers can effectively attract and retain young talented employees (Bogosian & Rousseau, 2017). Gen Z has been shaped by several significant global events that

inform this generational cohort and influence them to move through and make sense of the world (Harari et al., 2023).

Generation Z has experienced the economic collapse of the early 2000's, the invention of the iPhone (2007), the Covid-19 pandemic, and with the rise of artificial intelligence, are facing the 4th industrial revolution. They have grown up within the Global North social zeitgeist of postmodernity and now late modernity (or liquid modernity), resulting in a generation that is concerned with justice and social reform, desiring flexibility, struggling with poor mental health, who are globally minded, mistrusting of authority, and economically awareness (Moore, 2023). Understanding these generational trends and preferences can support the ability of organizations, industries, educational institutions, governments, and service providers to perceive potential changes or emerging considerations within different generations, supporting innovation and the ongoing success of their respective disciplines, missions, and functions. This study involved critical consideration of the implications of Gen Z's generational values, approaches, and perspectives to help identify relevant theories to support applicable and futures-ready career development services for the year 2030 (Magni & Mazoni, 2020). To understand this, several broad generational characteristics of Gen Z are used.

The first generational trend of Gen Z is that they are the first generation to have been completely immersed in digital communication and are often more familiar and comfortable with emerging technologies than previous generations (Annamalai et al., 2025). The nature of Gen Z being shaped by technology and the digital realm (Harari et al., 2023) has resulted in Gen Z, as validated by Nieżurawska (2023) feeling "...safer and more confident in the virtual world than in the real one, which is why they make new acquaintances in virtual communities—friends and partners alike" (p. 16). However, Gen Z members are also described as individuals who are less satisfied with the status quo and demonstrate willingness and ability to initiate change (Seemiller

& Grace, 2016; Sengupta, 2020). However, at the time of writing, this may shift as the Gen Z rate of apathy and disengagement seems to be rising (Yardley, 2024; Schulz, 2025). Gen Z represents a generation that has experienced significant disruption in their lives, the pinnacle of which is the impact of the Covid-19 pandemic. Every person, regardless of age, was affected by Covid-19, but the developmental and life stages of Gen Z (adolescence and young adulthood) during the pandemic could have a long-lasting impact. Whether it was prolonged social isolation, interruptions in education, or reduced opportunities for meaningful peer interactions, Covid-19 disrupted every facet of their lives (education, social, economic, etc.) and developmental processes (psychosocial, cognitive, and emotional) (Harari et al., 2023; Arnett, 2000). This disruption, coupled with their general high use of digital spaces as a substitute for in-person interaction, means that Gen Z's modes of communication, identity expression, and sense of belonging have been significantly altered (Twenge et al., 2021), resulting in the statement that Gen Z is the 'loneliness generation' (Annamalai et al., 2025). Additional societal trends that Gen Z has been required to navigate are a highly complex geopolitical landscape, increased wealth disparity, disruptive technology (e.g., artificial intelligence), environmental concerns, and an increasingly polarized western world (Onesto, 2022). This has influenced Gen Z's perceptions of systemic structures, such as education, employment, and healthcare, leading to a heightened sense of skepticism and critical engagement with institutional norms (Nieżurawska, 2023). All these generational trends have a significant influence on how Gen Z approaches work, which represents the relevant and important dynamics that CDPs must navigate and be aware of, along with broader changes and disruptions occurring in the workforce.

The emergence of highly disruptive technology and complex geopolitical dynamics has dramatically altered the Canadian workforce (Mitchell et al., 2021). A very clear example of this is that at the time this chapter was written and finalized, the relationship between the United

States and Canada as trade partners was growing increasingly tumultuous, which demonstrates and further promised a precarious and unstable Canadian labour market. The rate and scale of the labour market tumult and change were accelerated by the COVID-19 pandemic and the rise of global social reform and justice movements (Ungemah, 2021). The global pandemic significantly affected the world's economy and pushed employers to support remote work and led to the "... Rapid development of automation, robotics, and artificial intelligence" (Mitchell et al., 2021, p. 2678). Along with these changes, COVID-19 also revealed significant social disparities, which increased the pace of change within the 'world of work.' The rapid changes experienced within the workforce pushed economists, labour experts, and industry leaders to increase focus, attention, and resources related to the immediate changes experienced by employers (Dorsey, 2022). Despite the complexity represented by the adolescent developmental stage, changing generational values, and rapidly changing labour market, career development programs can directly contribute to the personal success of the youth, support a vibrant and robust workforce, and ultimately Nova Scotia's economy (Levine et al., 2018).

Conclusion

This research intends to support career development professionals (CDPs) and organizations in Nova Scotia to enhance their practice and support their goals for the future by collaborating with them on accessible and relevant academic research. As noted, this research provides a futures-oriented theoretical framework informed by diverse sources of data and through direct engagement with CDPs working across Nova Scotia (Wallace & Schwartz, 2022). The remainder of this chapter outlines the entirety of this research in eight chapters. The purpose of this first chapter is to review and introduce the area of focus. This includes a brief introduction to the need for this research, stating the purpose of the research, research questions, brief literature review specific to Generation Z, and an overview of chapters within the dissertation. In

Chapter Two, the author locates himself as the primary researcher and articulates the philosophical assumptions and framework in which this research is grounded. Specific attention was given to a philosophical roadmap that guided the research activities of this research (Wilson & McCormack, 2006). Chapter Three offers a broad literature review of several integral topics: career development, future of work, and future of education. The third chapter is intended to help contextualize and clarify the focus of this research within the broader literature. Chapter Four offers an overview of the methodological framework of this research. A clear description of the various methodological influences and their alignment is offered to ensure transparency and to demonstrate the validity and intentionality of the methodological approach. Chapter Five provides descriptions of data collection and analysis activities and articulates their alignment with the methodological framework. Chapter Six outlines the findings of the iterative study phases. Chapter Seven is the pinnacle of this doctoral dissertation, outlining the resulting Futures-Oriented Theoretical Framework for Youth Career Development, which is a culmination of all prior chapters. Chapter Eight offers a synopsis of the entire dissertation, connecting the resulting framework back to the prior literature and reflecting on implications, limitations, and potential directions for future research.

CHAPTER TWO: PHILOSOPHICAL FRAMEWORK

This chapter helps locate the author and articulate the philosophical assumptions and framework in which this research was grounded. It does so by articulating the researcher's epistemological, axiological, and ontological perspectives. CR is the philosophical framework in which this research is situated (Simba & Ojong, 2017) and specifically articulates how the approach of engaged scholarship is actioned within a CR paradigm and how this approach will support new, meaningful, and relevant research activities. It is paramount for dissertations to articulate and clarify philosophical approaches informing research decisions to demonstrate alignment and transparency (David, 2020). This study leveraged an engaged scholar critical realism-informed research paradigm, embedding FR methods to help surface relevant data. This approach is uncommon and often not affiliated with career development education research; therefore, the importance of clearly articulating the philosophical assumptions in this research was acute, demonstrating the rigor and validity of this approach.

Every research project is uniquely informed by the phenomena under review, the context of the research, the academic discipline, and the researcher (Jackson, 2013). For many academics in education, research ideas or concepts originate from personal experience. The process of identifying, selecting, and implementing an appropriate methodology is an integral component of any research; however, it is paramount that the researcher can articulate the philosophical assumptions that lead to methodological decisions (Wilson & McCormack, 2006).

Unfortunately, within academic literature there exists a vast amount of disparity in the terminology, approach, and application of the act of sharing the philosophical underpinnings of research. Language such as research paradigms, conceptual frameworks, and philosophical assumptions are often used interchangeably (Jackson, 2013; Gaus, 2017). Despite this, the fundamental importance of articulating the philosophical paradigm within which the research is

situated remains important for ensuring the transparency and validity of the research (Alderson, 2016). Denzin and Lincoln (2018) describe a paradigm as composed of four key areas: epistemology, axiology, ontology, and methodology. Jackson (2013) writes: “Research rigour can be strengthened by the researcher making transparent the philosophy that underpins the justification of their research methodology” (p. 50). Clarity and transparency foster high-quality research, as the researcher can rationalize and articulate the research origin, their positionality, and the philosophical assumptions that have informed their research design and decision-making (Mesel, 2013). This means that even if readers disagree with the findings, the process of how the findings arrived is well-documented, aligned, and clear (Gerald & Söderlund, 2016). Through articulating their position, epistemological and ontological assumptions, researchers verify the credibility, rigour, and logic of the research design and methodological decisions. This will support efforts to achieve internal and external reliability and communicate the credibility of the research in question (Gaus, 2017). Navigating the complexity and plethora of philosophical approaches, methods, methodologies, and disciplines available is further compounded by ethical and moral considerations regarding the nature of doctoral studies.

A challenge and critique of doctoral programs is their extractive and self-propelling nature, as they are often focused on obtaining a PhD degree and pursuing a tenure-track academic position (Sherman et al., 2021). A promising practice to support PhD students desiring to combat the risk of systemic power misuse is the act of reflexivity. In a reflective essay, Nganga (2011) wrote:

My identity is always in process and therefore unfinished—I am still in the making. In educational contexts, while the notion of reflecting on identity has proven to be challenging, it offers possibilities for personal and professional growth (p. 239).

Reflexivity helps researchers understand and identify their positionality and how their intersecting identity (age, class, ethnicity, gender, language, marital status, nationality, parental status, profession, and religious beliefs), worldview, and bias influence research conduct (David, 2020). As a cis-gendered heterosexual, educated, middle-class, Caucasian man, I continue to learn about and wrestle with my significant amount of inherent privilege and power. Part of this learning and wrestling is recognizing how higher education institutions and most major systems and structures within Canadian society were created for me and others with my privileged identities to succeed (Johnston, 2019). Reflexivity, as defined by Archer (2007), is to habitually reflect on oneself and one's position in relation to decisions we make and behaviours we enact when engaging with others and ideas. The importance of researchers engaging in reflexivity is to catalyze their understanding of their positionality and the philosophical beliefs informing their research (Nasir, & Schöneberg, 2021). As a practice, reflexivity has increased in popularity over the past few years as post-secondary institutions are challenged to validate their work and demonstrate tangible contributions to society (Morrison, 2020).

This chapter strives to ensure an understanding of the philosophical assumptions that influence and shape the research design process (Kivunja & Kuyini, 2017; Scotland, 2012). The resulting methodology and methods are outlined in chapters four and five. Within this chapter, the first section outlines the context within which this research emerged, and articulates the purpose and intention of the dissertation. The second section grounds the research context, purpose, and my positionality as an engaged scholar. Engaged scholarship offers a strong framework of values and principles that are highly relevant to the axiology of this research and is well-established in the literature. An explanation of engaged scholarship is then followed by a review of CR. The final section reviews the philosophical paradigm of CR, which is a larger philosophical framework in which the values and principles of engaged scholarship are situated.

This section offers clarity regarding the ontological and epistemological perspectives of CR and articulates how a CR perspective informed this study. To situate these elements, the research context and purpose were the initial focus.

Research Context

Jean McNiff (2002) beautifully writes:

Educational research is socially and politically embedded. It is always undertaken by a real person or persons, within a particular context, for a designated purpose. Research does not just happen (p. 27).

The context of this dissertation is the career development service sector of Nova Scotia, with a specific focus on organizations offering career development interventions to Generation Z youth (1997-2012). This research is occurring during a time of significant global economic, social, and environmental changes (Gupta et al., 2020). These are all relevant aspects of the research context (McNiff, 2002).

Narrowing the contextual focus, the importance of youth career development is a growing focus and concern for politicians, economists, educators, and employers (Kluve et al., 2019). Employment is identified by the World Health Organization and the government of Canada as a social determinant of health, and is an integral factor in the United Nations Sustainability Development Goals (Public Health Agency of Canada, 2023). Narrowing further, Nova Scotia workforce, and subsequently economy, continues to navigate the impact of the Covid-19 pandemic while also facing a changing geo-political climate, an aging population, the rise of the skill-based economy, changing immigration policies, and ongoing labour shortages (Bhatia et al., 2023; C.D. Howe Institute, 2023). Within Nova Scotia there exist hundreds of organizations offering a variety of services and programs aimed toward supporting positive career development within the youth population of Nova Scotia. According to the 2021 Canadian

census, the population of Generation Z in Nova Scotia is approximately 155,485. Youth career education is complex as the areas of learning include awareness of external realities and forces influencing employment (labour market, employability skills, employer expectations) along with internal learning and development (self-awareness, career aspirations, emotional maturity) (Chen & Doherty, 2021). Using a critical realist language, youth-focused career services are complex social programs that function within an open system (Pawson, 2006). In addition to these external elements, the nature of learning and supporting the transfer of knowledge from career development programs to the practical daily working realities of youth is an extraordinarily complex action (Perkins & Salomon, 1992). As noted above, CDPs engage with young people in the life stage of adolescence and early adulthood, which represents a highly formative and tumultuous time of identity formation (Best, 2011). The complexity of supporting youth career development was the origin of this study, which emerged from informal discussions between career development professionals and myself, sparking curiosity about the subject.

Through my work at the Centre for Employment Innovation (2020-2024), a part of the Coady Institute located at St. Francis Xavier University, I have had the opportunity to engage with many career development educators focusing on youth across Nova Scotia. As noted, a common theme that emerged through conversations with career development professionals was the challenge they faced in providing career development to a generation whose values regarding education and employment were shifting and evolving within the context of being rapidly changing and unpredictable. This was identified as a knowledge gap both in the current literature and in Nova Scotia's career development system. This informed the futures-orientation of this research, necessitating the usefulness of a framework that could support CDPs to consider and be proactive in refining and developing programs and services that they are offering to Generation Z instead of being reactive to changes occurring. As a result of the complexity of the research

phenomena, research context, positionality, and knowledge-to-practice gap, the value of applying an engaged scholar approach within a CR perspective was identified. The following section outlines the values and principles of engaged scholarship and how they align with the research context, purpose, and positionality. This is followed by an overview of critical realism and the key philosophical tenets.

Engaged Scholarship: Research Context & Positionality

Morrison (2020) defined engaged scholarship when academic researchers and community stakeholders contribute “...In their respective areas of expertise, to co-create knowledge that addresses community-identified cares and concerns, as well as serving the public good” (p. 42). Engaged scholarship has grown in popularity over the past 20 years (Beaulieu et al., 2018) and while the values and intention of engaged scholarship resembles other approaches (community engaged scholarship, scholar practitioner, scholarship of engagement, action research, etc.) (McClintock, 2003; Beaulieu et al., 2018; Kupo, 2014), the foundation of this approach is the intentional connection between research intent and community need. McClintock (2003) defines this type of scholarship as being pragmatic and contextualized with focus toward the well-being of those most directly impacted. Engaged scholarship provides an approach that reorients this academic work to ensure that research activities and approaches positively contribute to the community (Bilgen et al., 2021). Engaged scholarship requires strong articulation of axiological assumptions. Axiology refers to the values and ethics of researchers that shape research decisions and activities (Merten, 2021).

Authors such as Ernest Boyer (1990), Andrew H. Van de Ven (2007), Nancy Franz (2009), and others note that engaged scholarship is a call for academia to refine their understanding and approaches to academic scholarship writ large. Engaged scholarship ‘provokes’ the reimaging of what scholarship is, could be, and pushes against traditionally non-

collaborative perspectives to a perspective that grounds scholarship in collaboration and partnership (Paine & Delmhorst, 2020; Simba & Ojong, 2017). In *Scholarship Reconsidered and The Scholarship of Engagement*, Boyer (1990, 1996) challenges the professoriate and historical academic scholarship by holding a restrictive view of scholarship (Kajner, 2013). He challenges the dynamic of post-secondary institutions simply being places where “students get credentialed, and professors get tenured” (Boyer, 1996, p. 23). He discusses an expanded view of scholarship that encompasses the scholarly domains of discovery (original research and publication), integration (scholarship involving synthesis across disciplines), application (bringing knowledge to bear on the world’s consequential problems, a ‘scholarship of engagement’), and teaching (the pursuit of innovative pedagogy informed by academic knowledge) (Van de Ven et al., 2018). Specifically, when considering engaged scholarship, the four domains have an interlocking function. These four domains are (1) exploratory work to discover new insights, (2) contextualization of discoveries, (3) knowledge mobilization meaningful to collaborators and intended audiences, and (4) practical use of insights from the first three domains to help solve problems and move people toward their goals (Kajner, 2013).

The engaged scholar approach represents a credible academic approach and body of literature to ensure clarity and transparency in the axiological assumptions of how this research was designed and actioned (Nyden, 2003). The ways in which engaged scholarship aligns and represents the research context and my positionality are best understood in four key areas: (1) political nature, (2) focus on community partnership, (3) emphasis on reciprocity and partnership, and (4) dedication to academic-rigour and -transparency. These four areas demonstrate the axiological perspective of this research; the following section show how these principles and values informed this dissertation (Geraldi & Söderlund, 2016).

Political Nature and Social Transformation Orientation

Decline in public confidence in post-secondary institutions was noted by Boyer in 1996 and this decline in trust and confidence has only increased over the past decade (Easter, Ceulemans, & Kelly, 2021). Taking this further, Beaulieu et al. (2018) emphasized that engaged scholarship addressed the outdated approach of working in isolation and emphasized a new academic paradigm of collaboration (p. 13). Foundationally, engaged scholarship pushes against the assumption that academics are the holders of new knowledge (Beaulieu et al., 2018) and elevates the knowledge, experiences, and insights of community as necessary in the research process (Morrison, 2020). This does not diminish the rigour or academic prowess of the engaged scholar; instead, it pushes researchers to acknowledge the complexity of the relationship between the researcher and practitioner and orients the research intent toward practical purposes. This approach situates the purpose and intention of engaged scholarship to support practical needs and positive social changes (Nyden, 2003).

As noted above, this research was catalyzed through conversations with CDPs in Nova Scotia working with youth, who identified concerns and challenges in providing services in a rapidly changing context. Adopting an engaged scholar approach oriented this research toward a type of scholarship that aligned with the intrinsic motivation for this research to make a positive contribution to the real needs of Nova Scotia CDPs (Easter et al., 2021) while also supporting the completion of a doctoral degree (Franz, 2009). Therefore, the engaged scholarship approach aligns with this research context, purpose, and my positionality, which seeks to provoke positive social change more so than my own professional progression. Simba and Ojong (2017) affirm that engaged scholarship emphasizes and values incorporating diverse perspectives and knowledge which can help support reconciliation and lasting relationship between researchers and respective practitioners. Van de Ven (2007) states: “Engagement means that scholars step

outside of themselves to obtain and be informed by the interpretation of others” (p. 10). This emphasis can be described as focusing on social change and aligns with the tenets of emancipatory and transformative research (Nyden, 2003). The values of emancipatory and transformative research allow researchers to consider and recognize unequal power relations, social injustices, and strive to remove barriers to liberation (Watson & Watson, 2011). This dissertation strove to embody these values and is further demonstrated in the system perspective it adopts (see chapter four for elaboration). In addition, these values are upheld by the next area of alignment, which is a collaborative and reciprocal approach.

Reciprocal Relationships and Engagement with Community

The second alignment of this research with engaged scholarship was the emphasis on identifying and engaging in practical problems faced by practitioners, examining them closely, and identifying productive solutions (Kupo, 2014). Van de Ven (2007) states:

Engagement is a relationship that involves negotiation and collaboration between researchers and practitioners in a learning community; such a community jointly produces knowledge that can both advance the scientific enterprise and enlighten a community of practitioners. Instead of viewing organizations and clients as data collection sites and funding sources, an engaged scholar views them as a learning workplace (idea factory) where practitioners and scholars co-produce knowledge on important questions and issues by testing alternative ideas and different views of common problems (p. 7).

Engaged scholarship acknowledges the importance and need to bring together practitioners and professionals with academics to better understand and develop knowledge and learning relevant to enhancing practice (Morrison, 2020). This engagement and collaboration between practitioners and academics allows for research activities and designs to support the

discovery of evidence and knowledge that is engaging, rigorous, and relevant to both researchers and practitioners (van Marrewijk & Dessing, 2019; Morrison, 2020). Collaboration helps to support the mutual learning of both professionals and researchers, demonstrating the value of both practical and theoretical insights (Tiessen et al., 2021). The nature of engaging communities is an important focus for championing the approach of engaged scholarship, with an emphasis on reciprocity (Van de Ven et al., 2018).

van Marrewijk and Dessing (2019) emphasize the various challenges to supporting reciprocal relationships between practitioners and academics and note the largely historical (and ongoing) extractive nature of academia (Mertens, 2021). Easter et al., (2021) identified five factors which support engaged scholars to push against extractive practices and navigate the research-practice divide. These factors are (a) remembering purpose, (b) emphasizing relationships, (c) engaging in self-learning, (d) practicing reflexivity, and (e) framing results. Consistent with this approach, this study grew from conversations with career development professionals. The intention of this study was to engage in innovative, rigorous academic research, which results in meaningful contributions to CDPs (Beaulieu et al., 2018). Strong communication, trust building, mutual respect, and constant reflexivity was required to engage with this approach to scholarship (Tiessen et al., 2021). A clear example of this within the research design was the multiple rounds of iterative data gathering from CDPs and ongoing communication (Gagnon, 2009) throughout the research (more in Chapter Four). This emphasis of reciprocal relationships within engaged scholarship elevates the importance of how findings are disseminated, and how collaborative knowledge creation processes can facilitate action (policy reform, service delivery, etc.) (Paine & Delmhorst, 2020).

Importance of Application and Knowledge Mobilization

Knowledge mobilization has been defined by the Social Sciences and Humanities Research Council of Canada (SSHRC) as a ‘reciprocal and complementary’ movement and uptake of research knowledge between researchers and possible knowledge users both within and outside academia, resulting in a positive benefit for users of said knowledge (Social Sciences and Humanities Research Council, 2016). Engaged scholarship affirms the importance of this and embeds it within the approach itself (Franz, 2009). Part of the engaged scholar researcher role is to be an ‘actor’ of change who intentionally engages and participates in the creation of relevant activities and outputs to various stakeholders (Beaulieu et al., 2018).

This emphasis builds upon the political nature of engaged scholarship, as the field of knowledge mobilization (KMb) has increased in importance and focus for academic research. This has occurred because of the increasing pressure from funders and the public for research to be relevant and accessible to organizations and communities outside of the academy (Phipps & Zanotti, 2011). Landry et al. (2001) write: “The perception that taxpayers are not getting an adequate return from their investment in university research is accompanied by a growing demand for more measurable results regarding the utilization of university research” (p. 396). The emphasis on sharing and disseminating research findings and ensuring the usefulness of the research further demonstrates a strong alignment with the research intention to support career development educators through the development of a futures-oriented theoretical framework.

The historical power imbalance between researchers and the community was challenged through ongoing communication and multiple rounds of data collection (Stutchbury, 2022). Worton et al. (2017) writes that the power imbalance between researcher and community/knowledge user can result in: “Researchers selecting knowledge-to-action strategies based on assumptions that do not necessarily hold true in community settings” (p. 123). Engaged

scholarship's emphasis on reciprocal relationships means that researchers must not simply decide the best approaches to the KMb (pushing approach), but instead engage in a process where practitioners help to inform approaches to disseminate research learning (Lavis et al., 2003). This approach affirms the value of diverse ways of knowing, which is a cornerstone of many collaborative research approaches (Jull et al., 2017). Further, Gagnon (2009) notes that evidence supports the effectiveness of dissemination when a relationship of previous knowledge exchange exists between researchers and knowledge users. The final alignment between the research context, my positionality, and engaged scholarship is the value of academic rigour and validity within this approach.

Academic Rigour & Validity

Paine and Delmhorst (2020) identify the concept of the rigour-relevance gap (also referred to as the research-practice gap; Easter et al., 2021) and describe this gap as the palpable tension between the intention and desire of researchers for strong rigorous research to support identifying “generalizable and defensible insights,” with the desire of practitioners for “context-specific” and time-sensitive needs (Sharma & Bansal, 2020, p. 386). An engaged scholar approach acknowledges this complexity and leverages the perspectives of practitioners, to help support the producing knowledge that advances both theory and practice (Van de Ven et al., 2018) As discussed above, engaged scholarship emphasizes actionable learning outputs for practitioners or those who “intend to influence the system,” however, engaged scholarship must also be “scientifically relevant and useful” to further develop the relevant academic field (Pasmore et al., 2008, p. 13). This tension is an important element that has pushed researchers and academics applying action research methods (community-based research, participatory action research, etc.) to ensure rigorous transparency and clarity of methodological processes and decision-making (Nyden, 2003).

Research transparency seeks to mitigate bias concerns in engaged scholarship. Engaged scholars would propose that engaging the community in the research design process and subsequent activities adds complexity to the research as various perspectives and knowledge help inform the research (van Marreqijk & Dessing, 2019). This complexity helps support the practical application of research findings while pushing researchers to engage with the phenomena under review and relevant literature at a deeper, more informed level (Simba & Ojong, 2017; Andrée et al., 2014). Paine and Delmhorst (2020) describe that engaged scholarship must recognize the differences between the contexts of the collaborating researchers and practitioners: “The tension created by the different approaches within these groups of contributors facilitates learning and enhances the likelihood for outputs that exhibit both rigor and relevance” (p. 446). Engaged scholars must understand and acknowledge this tension to ensure both credible and rigorous research design, with an emphasis on the practical application of the findings (Easter et al., 2021). As explained in Chapter Five, this research, while striving for strong community engagement, was limited in how this occurred, and it represents an area of both weakness and possible future research. Regardless, the axiological values and principles of engaged scholarship articulated above, which were embedded within the philosophical framework of critical realism (CR), were integral in understanding how decisions and research activities were formed. The following section reviews and articulates several important tenets of CR, further clarifying the underlying philosophical assumptions that informed and shaped research design and activities.

Philosophical Framework: Critical Realism

Where engaged scholarship provides an approach to guide the ethics and intention of this research (axiology), CR frames the philosophical assumptions about the nature of reality (ontology), how we understand and know that reality (epistemology) (Hasting, 2021), and

informs how FR methods are applied. Pawson and Tilley (1997) posture that “...realism has sought to position itself as a model of scientific explanation which avoids the traditional epistemological poles of positivism and relativism” (p. 55). CR adopts a positivist ontology (reality exists independent of humanity and individuals) with a constructivist epistemological perspective (knowledge that reality is socially constructed) (de Bernardi, 2022; Sayer, 2000). Stutchbury (2022) writes that the appeal of CR is its ability to offer deep and rich descriptions recognizing the complexity of the social world and draws in explanatory prowess through consideration and engagement with different social theories: “...That it goes beyond rich descriptions in order to seek explanations and recognizes that, in the complexity of everyday life, those explanations may draw on different social theories” (p. 113). Fundamentally, CR-framed research affirms the complexity of social programs and adopts an open system perspective while seeking to penetrate deep levels of reality to help surface knowledge, which helps explain mechanisms within societal phenomena commonly identified as the ‘black box’ of social programs (Brown et al., 2000; Scott, 2010). Initially conceptualized and proposed by Roy Bhaskar in the 1970s, CR has experienced the emergence of various offshoots and approaches over the past 50 years. Other key philosophers, sociologists, and economists who have developed Bhaskar’s work include Archer (1995; 2003), Collier (1994), Danermark et al. (2002), Sayer (2000, 2011), Tilly (1993), Pawson (1993, 2013) (Hastings, 2021). Pawson and Tilly (1993) emphasize the ways in which realism has morphed and adapted. They scrutinized how Bhaskar’s later work frames CR researchers to hold political, religious, and moral high ground (Pawson, 2006). This criticism has led to terms such as scientific realism, which orient themselves away from Bhaskar's later work. There are two notable critiques of CR that scholars engaging in this approach must consider.

The first is the perceived ‘lukewarm’ middle ground position between the perspectives of positivism and constructivism which CR holds (Sayer, 2000). This critique is important as it forces CR researchers to articulate the ontological and epistemological positioning of CR with clarity and addresses the ‘fuzziness’ which can be present within CR research. The second notable critique is that the ontological perspective of CR elevates CR researchers to the level of Socrates’ ‘Philosopher King’ and the importance of the researcher. This criticism postulates that, since CR proposes an independent reality (de Bernardi, 2022), that CR researchers are the holders of ‘absolute’ knowledge and that individuals are powerless to these hidden causal forces. This criticism reflects a lack of understanding of CR, as realist research strongly maintains that individuals, while being shaped by structures and entities, also hold the agency to shape them (Archer, 1995). Therefore, insights and experiences of individuals are valid and important considerations in CR research. Additionally, theoretical pluralism and the fallibility of knowledge are pivotal to CR (Thapa & Omland, 2018), meaning that realist-informed researchers must view their knowledge as incomplete and emerging. CR research is often an exploratory theoretical journey; therefore, CR researchers employ reflexive practices to understand how their perspectives and lived experiences shape their data and findings.

CR is a philosophical perspective that supports meaningful inquiry into complex phenomena such as the future of youth career development. The complexity of this philosophical paradigm must be fully acknowledged to meaningfully engage with it (Hastings, 2021). There is not only an elephantine amount of extraneous and dense philosophical writings, but also a myriad of approaches, opinions, and applications of CR (Cochran-Smith et al., 2014). Despite the variations and complexity of CR, there are some consistent elements that can be observed across various applications and approaches. As noted above, it is important to articulate and recognize the philosophical perspective that influences how research is conducted. The following

section highlights foundational philosophical premises of CR. The explicit nature of the CR paradigm employed in this study is explained in chapter five. However, for now, the key premises being reviewed are: (a) ontology & epistemology perspective, (b) stratified reality and domain, (c) causality, outcomes, and generative mechanisms, (d) agency and contextual layers, and (e) theory-explanation, abductive & retroductive reasoning. The first premise is to articulate the ontological and epistemological positioning of CR.

Ontology & Epistemology Perspective

The basic tenet of CR is that a reality exists independent of humanity. Oliver (2012) writes: “It (critical realism) marries the positivist’s search for evidence of a reality external to human consciousness with the insistence that all meaning to be made of that reality is socially constructed” (p. 372). Bhaskar's initial critique of both constructivism and positivism was what he coined as the ‘epistemic fallacy’. According to Bhaskar (1998), this critique is grounded in how both philosophical perspectives reduce ontology to epistemology statements. From a positivist perspective, our understanding of reality is limited by the need to demonstrate an empirical understanding of reality, which reduces ontology to empirically refined epistemological statements (Fletcher, 2016; Mingers, 2004). In constructivism, reality is entirely constructed through and within human experience and understanding, which again reduces reality to epistemological statements. Fletcher (2016) writes: “Despite the seeming opposition between the constructivist and positivist perspectives, each reduces reality to human knowledge, whether that knowledge acts as lens or container for reality” (p. 183). As such, a critical realist’s ontological perspective (view of reality) acknowledges that reality exists beyond their senses and that it is possible to conceptualize and develop theories that describe portions of reality (Eastwood, Mukumbang, & De Souza, 2021; Sayer, 2000; Haigh et al., 2019). This is a positivist ontological perspective; however, CR aligns this perspective of reality with an epistemological

perspective that all description and understanding of reality is, “mediated through the filters of language, meaning-making and social context” (Oliver, 2012, p. 372). The incorporation of positivist ontology with constructivist epistemology is the foundational philosophical premise that informs this research (Hastings, 2021).

The ontological and epistemological perspectives of CR are related to the distinction between ‘intransitive’ and ‘transitive’ dimensions of knowledge put forward by Bhaskar (1975, 2008). The intransitive dimension of knowledge refers to the knowledge that exists regardless of humanities knowing it (Scott, 2010), is relatively unchanging, and is ‘invariant’ of our knowledge (Richards, 2018). Transitive refers to the domain of knowledge as socially constructed or the ‘objects of science’ (Sayer, 2000) and can change based on new research or understanding. Haigh et al. (2019) writes: “Knowledge is transitive— our understanding of a phenomenon can change. While entities exist independent of our ability to perceive and conceive that they exist, we do use our minds to construct knowledge about them” (p. 3). Fundamentally, CR views that something real exists independently from humanity, and that research strives to reflect and illuminate it (Richards, 2018). This is best understood through critical realism's ontological assumption of stratified reality.

Stratified Reality and Domain

The concept of a stratified reality, which CR divides reality into three levels, differs from the ‘flatter’ ontologies of positivism or constructivism (Radulescu & Vessey, 2009). These levels are known as real, actual, and empirical levels. The empirical level is the level at which our experiences occur and are observable. Fletcher (2017) describes it as: “level of reality, where social ideas, meanings, decisions, and actions occur” (p. 183). The actual level, which comprises events, occurs independently of human experience and can be observable or unobservable. Events occurring within the actual level are the result of causal mechanisms, which are activated

structures and entities from the final level (Haigh et al., 2019). The final level is the real level. This is the deepest level of reality, where structures and entities reside, which, when activated by causal mechanisms, result in events at the actual and empirical levels (Eastwood, Mukumbang, & De Souza, 2021; Fletcher, 2017). Mingers (2004) simply states: “The real contains mechanisms, events, and experiences—i.e., the whole of reality; the actual consists of events that do (or do not) occur and includes the empirical, those events that are observed or experienced” (p. 93). This stratified reality demonstrates and acknowledges that there are levels of reality that exist independently of humanity (intransitive); however, the production of knowledge and sensemaking of this reality is generated and conditioned through individuals' history, social location, and experiences (transitive). An understanding of stratified reality helps to further articulate and deepen one's understanding of the ontological and epistemological assumptions articulated above (Radulescu & Vessey, 2009; Mingers, 2004). CR research moves from the empirical domain (observed events) to identifying the structures and mechanisms in the real domain. The foundational intention of CR researchers is to explain emergent social phenomena (causation) by identifying generative mechanisms, how they work (subsequent theories), and understanding the context and conditions that support their occurrence (Wilson & McCormack, 2006; Sayer, 2000; Fletcher, 2017). The application of this concept is explained in the following section.

Causality, Outcomes and Causal Mechanisms

CR offers a research perspective that draws heavily on social theories to explore and explain social phenomena (Stutchbury, 2022; Pawson, 2006). Critical realists acknowledge the complexity of social programs and adopt a perspective of causation which is grounded in explanatory theory building and endeavors to illuminate the ‘deeper’ levels of reality and revokes the successionalist approach to causation (Pawson & Tilly, 1997). In CR research,

“researchers attempt to explain how and why the phenomenon of interest occurred in terms of the ontological entities that caused them. This differs from merely identifying causality as a constant conjunction of events, focusing instead on a thick explanation of the entities and tendencies underlying the events” (Wynn & Williams, 2020, p. 52). Within the stratified perspective of reality, events occur within the empirical and actual levels of reality because structures or entities are activated (de Bernardi, 2022) at the real level. Therefore, critical realist researchers understand and seek to explore outcomes occurring (causation) within social programs by considering the realist inquiries of ‘what works for whom in what circumstances’ (Pawson, 2006). Pawson and Tilley (1997) define social programs (career development programs) as: programs that attempt to address social problems and consequently enable social change (positive changes in behavior). Critical realists' understanding of causality is informed by their stratified perspective of reality and the existence of a causal mechanism (Hastings, 2021). To support this complex approach to exploratory theory development, realist researchers leverage the hermeneutics of the configuration of Context, Mechanism, and Outcome pattern (CMO). As emphasized above, this CMO configuration is a prominent CR method that supports explanation building for research studies focusing on phenomena occurring within complex social programs, and is an important tool in realist evaluation (Pawson, 2006).

Identifying and illuminating causal mechanisms requires CR researchers to move beyond empirical observations and into actual and real levels of reality (Raduescu & Vessey, 2009; Pawson & Tilley, 1997; Wong, 2013). Pawson (2006) emphasizes that when researchers are seeking to understand social programs that they must “...break with the lazy linguistic habit of supposing that it is programs that work, and resting content with counting how often they work. The prerequisite is to look beneath the surface in order to inspect how they work” (p. 24). This is a direct and honest quote that highlights the causal perspective of CR researchers and the

explanatory strength of CR. A causal mechanism (also referred to as generative mechanism) is a proposed explanation (theory) of how different conditions and causal forces trigger or hinder an outcome (event or effect) within a specific structure or entity (Sayer, 2000; Thapa & Omland, 2018). According to Williams and Karahanna (2013), an event is a: “specific happening resulting from causal mechanisms being enacted in some social and physical structure within a particular organizational context” (p. 939). Events can also be understood as outcomes or ‘outcome patterns’ as described in the CMO configuration. Social programs' outcomes are, therefore, dependent on the action of causal mechanisms, which are shaped by the reason/agency of participants and program resources (Pawson & Tilly, 1997). Mechanisms do exist outside of individuals' awareness; however, individuals have agency and can influence their context and related mechanisms, thereby influencing the resulting outcomes (Jogesh, 2020). Realist explanation can also support social programs to identify possible mechanisms and then use the respective resources “impinged on the stakeholder” (Pawson, 2013, p. 26) resulting in the outcome (‘O’) of the program. For example, a career development organization working with youth struggling to attach to the labour market (context), develops a mentorship program that emphasizes connecting the participating youth with professionals (resources) in the field of their interest, with the intention of creating positive and encouraging experiences (mechanism), resulting in increased confidence and understanding of job prospects (outcome) on behalf of the young person. Understanding and surfacing causal mechanisms is the primary explanatory tool and focus for many CR researchers seeking to understand social programmes (Westhorp et al., 2016).

To further understand and explain emergent events or various social phenomena, critical realists seek to identify causal mechanisms, explain how they work, and identify necessary contextual contributors (Thapa & Omland, 2018). It is important to note that, while critical

realists seek explanation and illumination of causal mechanisms, the CR perspective of causality acknowledges the resulting events or outcomes of causal mechanisms that occur in a complex open system, meaning that mechanisms are not controlled (Pawson, 2006; Hastings, 2021), unpredictable, and not definitive (Fletcher, 2017). Kahn (2015) offers a helpful explanation stating: “Rather than seeking to propose causal laws, critical realism as a field offers a non-reductive explanatory critique that draws attention to the underlying basis for the actual events that we experience” (p. 443). These tendencies are often referred to as demi-regularities or outcome patterns, and can be categorized as intransitive knowledge; therefore, CR research can never fully predict the outcome of any action (Danermark et al., 2002). This emphasis on the fallibility of knowledge and that our understanding must continue to grow and adapt is an aspect that aligns strongly with the futures research perspective that the future cannot be fully known or predicted (Slaughter, 1999). An outcome pattern is understood as an anticipated or unanticipated change in behaviour resulting from a combination of the right mechanisms within the right context. Wilson and McCormack (2006) succinctly validate this as they emphasise that CR research is dependent on surfacing causal mechanisms, how they work, and discovering how and why they have been activated (conditions) (p.47). The concept of mechanisms within social programs is intimately connected to the context in which the program is occurring, as the context that is composed of various elements determines whether a mechanism fires (Westhorp et al., 2016). This leads to the next necessary premise regarding the importance of context and agency.

Agency and Contextual Structures

As noted by Nielsen et al. (2022), there is a lack of clarity regarding the concept of context in the CR literature. Pawson (2006) notes that within every social program a mass of various and complex contextual constraints exist within the institution, relationships, and structures. As mentioned above, Pawson and Tilly (1997) adopt the mantra of ‘what works for

whom in what circumstances?’ This mantra alludes to the important CR premise of acknowledging the role and influence of ‘context’ (social structures) and ‘agency’ (intrapersonal factors) within CR research. Houston (2010) emphasizes that within CR informed research, researchers seek to examine “how human agency (actors’ choices, meanings, understandings, reasons, creative endeavours, intentions and motivations) interact with the enabling and constraining effects of social structures (durable, enduring patterns, social rules, norms and law like configurations)” (p. 75). CR research accounts for and affirms the interplay between contextual factors (structures) and an individual’s agency (situated in the background of family tradition and worldview) and incorporates this into its explanation-seeking (Sayer, 1992). To understand the mechanisms associated with the outcomes of interest, CR researchers must understand and account for contextual factors in which the program is occurring (Mingers, 2004). Social structures have causal power that can potentially constrain or enable actions; however, individuals’ agency can push against or activate these structures (Stutchbury, 2022). Jones (2021) affirms this, emphasizing that CR acknowledges that, while social structures exist and have a strong influence, human actors have the ability to hinder, produce, and encourage them (p. 678). This interplay within this research is understood as contextual factors and includes the four I’s, which are individuals’ capacities (agency), interpersonal relationships, institutional settings, and wider infrastructures (structures) (Pawson & Tilley, 1997), and are explained in greater detail in Chapter Four.

Roberts et al., (2021) writes in explaining the CR perspective of causality within social programs that: "It is not programs that make things change, it is people, embedded in their context who, when exposed to programs, do something to activate both given mechanisms and change" (p. 1644). Pawson further supports this, emphasizing that the ‘firing’ of identified mechanisms is enacted or constrained by the context in which they occur; however, as noted

above, the concept of one's agency is also an important consideration for CR research (Stutchbury, 2022). Archer's (1995) morphogenetic approach suggests that organizations and society are shaped by the interplay between existing and imposing social structures and individuals' agency. Individual agency is situated in the background of family traditions and worldviews. Conceptually, social structures and agency can be understood as the context in which programs are occurring; therefore, understanding and consideration of the role and impact of agency within contextual factors supporting the 'firing' of causal mechanisms is one of the most compelling aspects of CR research (Scott, 2005; Wynn & Williams, 2020). When considering contextual factors, differing outcomes may occur based on changes to contextual factors (Radulescu & Vessey, 2009), or contextual factors may constrain or enable causal mechanisms to be activated (Kahn, 2015). Astbury (2013) defines context as: "...social, historical, political conditions that are likely to enable or constrain programme mechanisms" (p. 386). This demonstrates the epistemological assumption of CR that the experience of individuals of these social structures is a vital and integral aspect to understanding and identifying the causal mechanism, and is paramount to rigorous CR research.

Theory-Explanatory, Abductive & Retroductive Reasoning

The final CR tenet was framed by Pawson and Tilly (2004), who argued that realist research and evaluation "begin and end with theory" (p.19). As noted, CR views knowledge as fallible and ever-changing. This is strongly influenced by the ontological perspective of CR (reality existing independent of humanity) (Wheelahan, 2007). Therefore, CR research is explanatory and seeks to understand and illuminate the 'black box' of social programmes and interventions (Fernee et al., 2017). The term 'black box' is a common research term that refers to how particular outcomes are stimulated and created (Astbury & Leeuw, 2010). CR research seeks to 'open' the black box through identifying contextual structures and mechanisms at the

real and actual levels of reality and then, using abductive and retroductive reasoning, propose theories based on understanding of contextual layers and resulting outcomes and events (Wynn & Williams, 2020).

Within CR research, abductive and retroductive approaches to analysis are well-documented and established (Stutchbury, 2022; Houston, 2010). Jagosh (2020) writes: “abduction is the inventive thinking required to imagine the existence of such mechanisms” (p. 122). Retroductive theorizing aims to identify generative mechanisms to explain outcomes or phenomena (Stutchbury, 2022). This requires researchers to probe into the domain of real in the causal explanation process (Fletcher, 2017). Abduction and retroduction are two unique forms of reasoning within the CR approach that are often used simultaneously (Brönnimann, 2022). In this dissertation, various analytical approaches were used to analyze and synthesize various sources of data. Abduction and retroduction were applied to illuminate future contextual layers and the resulting identified middle-range theories (O’Rourke et al., 2019), the process of which was intentionally explained to ensure the clarity of research activities. Vincent and O’Mahoney (2018) describe this process as involving the review of various data sources (interview, literature) in tandem with theory “to produce the most plausible explanation of the mechanisms that caused the events” (p. 13). Abductive and retroductive theorizing support and recognize the complexity of this research inquiry and support theoretical pluralism (Vincent and O’Mahoney, 2018). Abductive and retroductive reasoning supported both the identification of future contextual layers and the surfacing of middle-range theories (causal mechanism).

A Critical Realist Informed Engaged Scholar Approach

This study embedded an engaged scholarship approach within the philosophical framework of critical realism. This philosophical approach was intentionally developed through the ongoing process of reflexivity and engagement with relevant literature, as both a PhD student

and an active member of communities that support youth career development. Adopting CR principles supports the ability to surface and investigate future conditions, contexts, and circumstances (structures, entities, and causal powers) that influence and are connected to career education interventions and programs (Cochran-Smith et al., 2014). As noted previously and explained further in Chapter Five, this research adopts realist principles to identify broad CMO configurations (Pawson & Tilly, 1997), resulting in the development of a theoretical framework that integrates middle-range theories, which are hypothesized to be important considerations to support meaningful career education programs occurring in a broadly defined future contextual layer using a modified version of Pawson's (2004) 4 I's Framework.

This philosophical framework supports this research's intention to engage in a complex area of inquiry both humbly and boldly. Engaged scholarship provides an axiological framework that aligns the research context, purpose, and my positionality as a researcher. The values and principles of engaged scholarship shift the intention and focus of research to both "resolving and blending intellectual assets and academic questions with expertise and public-related issues that include the community, social, cultural, human and economic development" (Simba & Ojong, 2017, p. 1011). The approach of engaged scholarship helps to articulate and situate this research from the perspective of academic research, which pushes against the extractive and self-propelling nature of academic research and offers principles to guide this research to engage in credible and rigorous research activities that not only seek the expertise and insights of practitioners but also pursue and view the knowledge and experience of these individuals (Nyden, 2003). Critical realism offers a scientific and intentional process to guide researchers through a cyclical theory-driven process with the intention of considering, developing, and amending program theories (mechanisms) present within complex social programs (contexts) (Westhorp et al., 2016). Alderson (2016) validates this, writing: "CR helps researchers to reduce

and avoid confusions, to clarify their chosen theories and methods and to justify, validate and strengthen their research findings in order to inform policymakers, practitioners and the general public” (p. 199).

As stated, the focus of this dissertation was to develop a Futures-Oriented Theoretical Framework for Informing Youth Employment Practices. The framework is composed of middle-theories, models, and approaches intended to help support positive outcomes when considering the future context of youth career development. CR supports the ability to foster an understanding of the interactions between context and individuals, and while every context differs, the resulting framework aims to be widely applicable and support innovative program design across contexts (Westhorp et al., 2016). Adopting an engaged scholar approach situated within a CR paradigm shaped the methodology (Chapter Four) and resulting methods and activities (Chapter Five). This philosophical framework acknowledges the agency of both career development educators and youth participants while also seeking to illuminate relevant structures and entities that influence the outcome of career education programs and interventions. Coupling these principles with CR principles allows this research to deeply engage and understand the phenomena of the future of youth career development. As will be articulated in Chapter Five, this philosophical framework allows for deep epistemological future-oriented research (Slaughter, 1999), which ultimately supports the relevance and applicability of this research (again aligning with engaged scholarship).

Conclusion

This chapter articulates and highlights the philosophical assumptions in which this research is situated. It began by reviewing the original purpose and context in which this research emerged, followed by a review of engaged scholarship that offers a strong framework of principles and values that help to inform the axiological perspective. This was followed by a

review of Critical Realism, the main philosophical framework in which this research is grounded and informed. This study embeds the values and principles of engaged scholarship within the philosophical framework of critical realism, representing an realist-informed approach. As stated, the purpose of this research was to develop a Futures-Oriented Theoretical Framework for Informing Youth Employment Practices, which is composed of multiple middle-range theories informed by the CR perspective of social programs and identified to be directly applicable to the future context (consisting of identified societal structures) of youth career development professionals. The next chapter provides insights into the current literature on the field of youth career development.

CHAPTER 3: LITERATURE REVIEW

The following chapter provides a broad literature review of several relevant fields of inquiry. Specifically, a review of literature pertaining to career development, namely futures of education, youth development, and future of work. These areas of literature represent three key domains that are highly relevant and intersect with the possible futures of youth career development. Understanding the current literature in these areas further articulates the space in which this research situates itself in existing literature, demonstrates the complexity of the research phenomena, and demonstrates the depth of insight that has shaped this research. Before transitioning into a broader review of the field of theories and models that shape career development, it is important to pause and emphasize the human element of this field. For many individuals utilizing career development services, their fundamental intention is to secure financial stability for themselves and their loved ones. This desire can be exacerbated by life circumstances (loss of employment, mental health challenges, increasing economic challenges, etc.) and transcends well intentioned program design, pedagogical approaches, and doctoral research.

The importance of this statement is meant to acknowledge that amidst the academic bluster and discussion of the importance of well-designed career development interventions and their contribution to human thriving, ultimately career development interventions are provided in real contexts, to real humans, with real needs. Therefore, any innovative program design must not add additional stress, burden, or barriers to individuals to achieve their purpose. This means that for some individuals seeking services, based on their current life situation, that ‘meaningful work’ may not represent their dream job, or their desire for employment will not significantly contribute to their self-image/identity formation; instead, they may ‘simply’ want to find a safe place of work which pays a reasonable salary, allowing them to achieve some level of financial

stability. This understanding acknowledges the human nature of career development, which recognizes that individual's needs and motivations will influence their ability to engage with career development services, regardless of the best intentioned, well researched, and designed interventions. Career-development services must ultimately understand and respond to individuals seeking these services. Again, this emphasis centers on real people in this research and aligns with the axiological perspective of engaged scholarship. With this understanding established and situated within the critical and nuanced perspective of what employment and meaningful work represents for various populations, this chapter begins with a review of the field of career development and specific nature of youth career development. The focus then shifts to articulating relevant literature within the field of education futures, and concludes with literature pertaining to the future of work. The first area of focus is understanding the concept of employment and meaningful work.

Career Development

A brief historical overview of career development clarifies the current context. The field of career counselling and career development emerged in the 1930s as a response to the changing skills needed by the workforce, and was predominantly informed by psychological assessments (IQ tests) and skill development. Following World War II, Canadian society experienced a significant shift, moving from an agrarian rural, low-educated, mono-religious, white-European Canadian society to a more industrial urban, diverse, educated, and pluralistic Canadian society. This shift had clear implications and refinement for the career development field (Counselling Foundation of Canada, 2002). Education was identified as integral for Canadians, and school counselors began to enhance their practices as early as the 1940s. However, many Canadian job seekers lacked formal education. Throughout the Great Depression and into the 1960's, career development continued to strive to address the changing and ongoing challenges faced by

Canadian job seekers, both within schools and externally. The Canadian government recognized the importance of career counselling and career development and asked Gerald P. Cosgrave (director of The Counselling Foundation of Canada) in 1965, to author a report on the state of career counselling within the education system. The document "...Recommended the development of initiatives to enhance a student's understanding of their own skills, interests and competencies, and the development of a personal plan to gain the further education and training the student required" (Counselling Foundation of Canada, 2002, p. 73). Career educators and the field of career development writ large, because of labour market demands of the 1960s, with federal government support, increased professionalism and variety of services offered. An example of this was the opening of the first youth employment counselling centre in Canada, Youth Employment Services (YES), in 1968 in Toronto. Centres such as YES increased in popularity as they represented community-based organizations that could quickly respond to the changing labour market needs and were sensitive to barriers faced by the communities in which they were located. In addition, the concept of career education grew in popularity during the 1980s as post-secondary institutes considered the implications of this within their educational centres (Counselling Foundation of Canada, 2002). Transitioning to 2025, the function and importance of career development as noted in the 2024 report 'Hidden Sector, Hidden Talent: Mapping Canada's Career Development Sector' is (despite its history) often misunderstood or simply not recognized by the general population. In this report, Blanchard and Taylor (2024) emphasize this, writing: "Much of Canada's career development sector is hidden from the people it serves. It is also largely invisible to policymakers, employers, and other interest holders who influence labour markets, workforces, Canadians' career and employment pathways, and the Future of Work" (p. 1). Despite this, there is an increasing awareness and understanding of the importance of career development services as they, in times of economic instability, support

individuals in finding, securing, and attaching to the workforce (Spindle-Jackson et al., 2023). As noted, career development services are situated at the complex intersection of economics, politics, and human wellness. With increased professionalism and attention to career counselling and development, approaches, theories, and concepts have grown in complexity and robustness.

Researchers and practitioners in the field of career development have noted that as the rate of change within the labour market has increased, the complexity of career development in the modern age has increased (Donald et al., 2018). Varma et al., 2022 describe the field of career development as a highly complex and intricate field which sits at the intersection of management, human resources, organizational behaviour, performance management, and education (p. 113). Career development supports individuals in understanding and traversing the rapidly changing labour market and achieving meaningful workforce attachment, with an expanding emphasis on working directly with employers to attract and retain employees (Autin et al., 2020). Programs such as mentoring, upskilling, employee resource groups, interview skills, how to write resumes, and personalized learning and development are all examples of services and interventions offered within career development. Career development is offered in many different types of spaces, such as educational settings and community organizations. However, as mentioned above, this research focuses on formal community organizations that provide career development interventions. Various community organizations offer career development services across Nova Scotia, serving various specific populations (youth, youth at risk, immigrants and newcomers, African Nova Scotian, Indigenous people, and individuals with neurodivergence) and regions. For example, Nova Scotia Works is a network of over 50 provincially funded organizations serving communities across Nova Scotia (<https://novascotiaworks.ca/nsdc/about-us>). While specific numbers of individuals engaged in career development services are difficult to find, a 2021 report by Futures Skills Canada and the

Labour Market Information Council noted that, at the national level, the use of career guidance services by adults in Canada was 17% (LMIC, 2021), which compares to an average of 44% across six surveyed OECD countries (OECD, 2021). The Futures Skills report further identified that among Canadian adults who did not use career guidance services, 24% cited that they did not know services existed, and 17% noted a lack of time to access services due to additional work and family responsibilities (LMIC, 2021). In the same report, it was noted that about 50% of youth aged 18 to 24 received some form of career development service (LMIC, 2021), which most likely comes in the form of career development within educational institutions. This report further demonstrates that career development services are underutilized by Canadians despite being often provided as a free social service within educational institutions or community organizations. This understanding further compounds the complexity of the career development field, as it sits at the intersection of various sectors, intentions, and motivations held by relevant actors and entities.

Based on the functions and purposes of career development, various stakeholders have differing interests in the outcomes of career development services. A simple breakdown of these stakeholders are the individuals utilizing career development services, employers seeking skilled workers, and government officials. Whether it is the individuals seeking services, government, or employers/industry, understanding the differing motivations helps to deepen understanding of what career development is and further establishes it as a complex but highly important psychosocial educational intervention (Irving & Malik, 2004). For example, consider the economic motivations of various stakeholders connected to career development services. Individuals engaged in services desire employment to support their economic stability and upward social mobility (Donald et al., 2018). The government is economically invested in career development services as employed individuals contribute to the provincial economy by

providing services (working), paying taxes, and purchasing goods and services. Additionally, the government is motivated to support individuals who may be receiving various forms of social service support, transitioning to being employed, and therefore no longer financially supporting them. Employers have a clear economic motivation to support career development as industries continually seek qualified employees to support their business and financial gains. Career development sits at the intersection of these multiple and sometimes contradictory motivations.

Career development organizations must strive to meet the needs of various stakeholders with possibly conflicting intentions and motivations. For example, career development organizations are supported largely by government funding and grants and receive minimal financial contributions from those they serve. This represents a common tension for many human service organizations, as they must navigate possible conflicting motivations and needs between individuals seeking services and funder expectations (e.g., individuals wanting a living wage compared to the government's fundamental desire to have individuals employed). Furthermore, as emphasized in Chapter One, the importance and complexity of career development are established, as employment is considered a social determinant of health (Benach et al., 2014). There has been increased discussion regarding both the health implications for under-or precariously employed individuals and the direct health implications of negative workplace dynamics (Jaydarifard et al., 2023). The nature of these conversations is directly relevant to the field of career development, as it not only affirms the importance of career development services but also expands the career development discussion into areas of well-being, employee rights, and self-care. This broader perspective on the meaning of employment/career has a direct influence on how career development should be perceived. According to the 2021 LMIC report, individuals engage with career development services to receive labour market information (LMI), develop skills, identify job vacancies, and learn work search strategies (LMIC, 2021).

This highlights the practical skills and explicit learning (job loss, skill development, etc.) provided by career development services, which help to support, equip, and prepare individuals to find employment for the fundamental purpose of economic survival and stability (Donald et al., 2018). However, adopting a more holistic perspective and further establishing the complexity of career development services, employment/career/meaningful work expands beyond economic elements and intersects with sense of self, identity, and values (Esters & Retallick, 2013).

Career development services seek to educate and equip individuals to navigate and be successful in the workforce. However, the term ‘work’ is a highly dense and complex concept that is furthered when considering individual motivations and personal expectations of their work. Brown and Lent (2020) refer to a variety of motivations for individuals to pursue work and, leveraging Maslow's hierarchy of needs (1943), highlight several key motivations for individuals seeking employment.

1. Work as a need fulfillment
2. Work as personal identity or self-construction
3. Work as normative expectation, group identity, and social construction.
4. Work as existential response and aid to mental health

Seeking, finding, and retaining meaningful employment are external and practical activities; however, these activities are strongly informed and shaped by internal motivations and beliefs, and are connected to self-worth and positive identity formation (Esters & Retallick, 2013; Laughland-Booÿ et al., 2017). The concept of meaningful work is challenging to define as what makes work ‘meaningful’ is highly subjective (Baily et al., 2018; Laaser & Karlsson, 2023). Lepisto and Pratt (2017) propose that individuals’ perspectives on whether their work is meaningful or meaningless are informed by their personal beliefs regarding whether their work has a wider value beyond the self. It is important to acknowledge that many populations, both

historically and presently, have had to overcome intentionally created barriers and systems, such as discriminatory hiring practices and insufficient workplace accommodations, so that they can pursue, or even imagine, satisfactory and quality employment (Covico et al., 2012; Goddard et al., 2024; O’Keefe et al., 2023).

Career development programs have been designed to help remove barriers to employment for marginalized populations and contribute to dismantling systemic inequity (Spindle-Jackson et al., 2023); however, it is paramount to acknowledge the way in which employment has been a system of control and colonization (Irving & Malik, 2004). Irving and Malik (2004) validate this stating:

Career education and guidance is part of a wider political arena through which participants explore and examine multiple possibilities concerning their potential pathways through life. However, these pathways cannot be regarded as free, unfettered and equally available to all, as access to opportunity is subject to individual desires, social expectations and structural constraints. It is influenced by a range of particular discourses of power relations, and saturated by competing conceptions of social and economic reality (p. 4).

A clear example was captured by Zhong and Shetty (2021), who analyzed Canadian census information and identified a pay discrepancy between the annual income of non-racialized male workers and non-racialized women, racialized males, and racialized female workers. They noted that for every dollar earned by a non-racialized male, racialized men earned an average of 78 cents, non-racialized female workers earned 67 cents, and racialized female workers earned 59 cents. These statistics illustrate patterns of labour market marginalization related to race and gender and their intersection (Block et al., 2019). Understanding employment and meaningful work from this holistic and critical lens is necessary, as it establishes a nuanced

and informed perspective of the complexity and importance of career development services. Irving and Malik (2004) examined the political nature of career development, emphasizing that interventions and educational spaces should empower individuals and push against larger economic forces. Understanding employment from an equity, justice, and health perspective can support CDPs in intentionally designing and developing services, which acknowledges the larger systemic barriers and issues within the workforce and is sensitive to equipping and empowering individuals in relevant and informed ways (Spindle-Jackson et al., 2023). This same intention and consideration are also required when considering youth-focused career development services, which presents another contributing complex dynamic.

Youth Career Development

With increased professionalism within the career development field, career development professionals' understanding of how to best support young people seeking services has also expanded. The structured learning environments provided by these organizations are intentionally designed and offered to support positive youth development specific to helping young people consider their careers and develop the necessary competencies to pursue said careers (Gallard Martínez et al., 2020).

As noted above, the life stages of adolescence and emerging adulthood represent a significant developmental period in individuals' lives, and career development is an integral part of this stage (Cardosa et al., 2022). The positive effects of career development for participating youth, such as increased self-confidence, understanding of the labour market, and networking on youth, have been reported and documented (Levine et al., 2018). Spindle-Jackson et al., (2023) emphasizes further stating that:

As a field, workforce development supports and serves individuals at the intersections of multiple marginalized identities. The youth population is

particularly important. Critical domains are impacted when youth are not provided adequate opportunity to engage in the workforce including education, housing and interaction with the criminal justice system; this poses great costs to young people and to society (p. 2).

Considering the connection between career and employment and self-identity formation (Creed et al., 2007), youth career development professionals are not only contributing to the development of practical skills and competencies of career literacy and readiness, but the very ‘personhood’ of the youth they support. The life stage of adolescence (and earlier) represents a vital point in time where CDPs are valuable and highly relevant (Schoon & Parsons, 2002). As individuals enter the life stage of adolescence and emerging adulthood and begin to consider their future, the connection to employment and possible careers emerges (Kohútová et al., 2021). The increased rates of mental health struggles, economic instability, geopolitical tension, globalization, and the rapidly changing labour market validate the unique need for career development interventions designed specifically for youth (Cebulla, 2009; Kara, 2024; Wang et al., 2024). Additionally, practitioners and researchers have noted the importance of a holistic perspective of career development that acknowledges practical (interview skills, job searching) and personal development (confidence, self-awareness), both of which shape youth career development interventions and services. Theories such as self-concept theory (Super, 1957), social cognitive career theory (SCCT; Hackett & Betz, 1981), circumscription and compromise (Gottfredson, 1981), lifespan developmental models (Lerner, 1986), and social cognitive theory (Bandura, 1977) offer career development professionals with deeper insight into the intersection between youth development and career development (Guindon & Richmond, 2005).

Many youth face significant external pressures within their schooling and families to identify and pursue a career path (Chen & Doherty, 2021). These external pressures are coupled

with internal pressures present during a life stage characterized as a period of instability, identity exploration, self-discovery, and concern about future possibilities (Kohútová et al., 2021).

Within this extended and dynamic period of personal exploration and discovery, CDPs strive to provide meaningful and relevant services (Shulman, 2023). Many career development services focus on students (high school or post-secondary) who are rapidly maturing toward adulthood and approaching graduation. Specifically, high school (ages 14-18) represents the life stage of adolescence and is viewed by career development professionals as a critical stage for skill development, career exploration, self-discovery, and self-realization (Neiad et al., 2021; Yu, 2019). Many scholars have proposed the importance of career development as early as the elementary age (Cardosa et al., 2022). This research focuses specifically on the developmental stage of adolescence and emerging adulthood, as it is a period of significant transition (graduation, moving outside the home, or entering the workforce) (Donald et al., 2018), which brings an additional layer of contextual complexity. CDPs strive to support youth populations who often face significant employment barriers such as limited workplace experience, employer bias, transportation challenges, and a competitive job market (Melak & Derbe, 2022; Irving & Malik, 2004; Spindle-Jackson et al., 2023). Despite the increased professionalism of CDP, research still affirms that "...Parental supports, peer relationships, and school factors such as academic engagement, teacher relationships and support, and sense of school belonging affect career development through a number of pathways" (Levine et al., 2018, p. 27). This means that while CDPs and career development services are important for supporting meaningful career attachment, there are significant external factors contributing to this educational and development process.

The influence of external factors on career readiness and career literacy of youth represents a layer of complexities that are often outside the control of CDP's, but still require

attention and consideration. CDPs are faced with the need for the continued adaption and refinement of their approaches and services to provide the best possible support to an increasingly lonely and pessimistic youth population (Chinmai et al., 2021), recognizing significant influential factors, such as changing familiar structures and the increasingly complex labour market (Godden, 2015; Kolbert et al., 2021). Schelsinger et al., (2021) affirm this stating: “Student career planning and decision-making have only increased in complexity because of multiple factors, including increased uncertainty of the work environment, a rapidly changing job market, the changing nature of work, and the changing social contract with employers as evidenced by the lack of a permanent relationship between employer and employee” (p. 145). Youth career development services provide opportunities for young people to not only engage in practical areas of career development (resume writing, interview practice, etc.) but also create opportunities for youth to critically reflect on and consider their passions, traits, and educational aspirations, which helps them explore and review labour market needs and corresponding career options (Kalini, 2021). Completion of high school is a significant life event and represents a transition for young people as they move toward further education or enter the workforce (Chen & Doherty, 2021). Career development services help support young people in this transition (Levine et al., 2018; Kalini, 2021) and prepare them to enter a demanding intergenerational workforce (Gabrielova & Buchko, 2021). Guan et al., (2017) emphasize that career development is a dynamic and iterative process whereby youth explore and construct self- and career-awareness, which can have long term implications for youth involved as significant amounts of literature connecting long-term career satisfaction with personal purpose and internal motivation. Therefore, career development represents psychosocial learning environments, in which CDP’s not only navigate the complexity of evoking meaningful learning related to employability skills

but also support positive personal development, which contributes to long-term career satisfaction (Sharma et al., 2021).

This literature review sought to demonstrate the complexity and unique intersection in which career educators are located (Counselling Foundation of Canada, 2002). CDP's not only need to be responsive to changing labour market needs but also recognize the uniqueness of individual students and their contexts (Levine et al., 2018). The approaches, programs, and educational models used to catalyze learning in career readiness and planning must be adapted not only to the changing demands of the labour market, but also for a new generation of learners. This is the focus of the next section of literature review, the future of education.

Future of Education

Whether it is the learning disruption and systemic educational inequities surfaced by the Covid-19 pandemic or forces of change such as globalization, digitalization, the rise of artificial intelligence, immense social reform, or the decentralization of education (Shar, 2023; Cook, 2019; Facer, 2016), the future of education is uncertain and compelling. The educational futurist Keri Facer masterfully proposes that education and the future are implicitly connected, as the very act of learning represents an intentional act in the present for a future purpose or promise (Facer, 2011). Future of education research takes this further as researchers and organizations, through intentional futures research activities, strive to propose images of the future that are informed by various signals of the future (trends, emerging possibilities/risks, and weak signals) (Dator, 2009). Often, these possible futures result in recommendations for changes in policy, curriculum, assessment strategies, and educational approaches and are developed in response to future signals of change, which are present within the discipline of education and beyond (technology, politics, and economics) (Makeo, 2023). Daanen and Facer (2007) commented: "It is not possible to make decisions about the future of education in a vacuum" (p. 29), and as

education systems around the world face a period of unprecedented disruption and tumult (UNESCO, 2021), dialogue and discussion are occurring. This vacillating landscape is a ripe ground on which to consider possible futures. Educational futurist Robinson (2022) writes:

Struggles over which future is to be imagined, represented and potentially materialised tend to be episodic, and emerge at moments of crisis and deep rupture (the Great Depression in the 1930s; the civil rights movement in the USA in the 1960s; the economic crisis of the 1970s). Such ruptures trigger debates about the current state of a society and its social order, and possible or better futures. Those engaged in advancing alternatives to dominant visions of the future are often well positioned to influence the shape of the debates and the sequence of events that follow (p. 190).

As emphasized above, the intention of future of education research is to support the development of new policies and strategies that will enable educational systems to anticipate and respond effectively when possible futures emerge (Makoe, 2023). However, when considering the future of education, Facer (2016) wisely describes the dangers of optimizing, colonizing, and protecting fantastical possible futures related to educational practices and intentions, stating that these approaches can "treat the future variously as something that can be known, something that should be brought into being, and as something against which we need to defend ourselves" (p. 64). Considering possible futures of education, as with all futures, must be done with imagination and anticipation for novelty, and should disrupt and expand perspectives and assumptions about the future (Ketonen-Oksi & Vigren, 2024). This approach to the future of education leads to the adaptation of actions and approaches in the present, which then evokes and opens up more transformative possible futures. There are historical examples of individuals proposing transformative educational futures within the field of education, whether it is the work

of Nel Noddings (1984), Paulo Freire (1970), and John Dewey (1938), or expanded perspectives considering non-European ways of knowing and teaching, such as Indigenous pedagogies (Battiste, 2013). While there is robustness within educational systems that supports adaptation and innovation (Shar, 2023), as is the case in many large historical systems, some institutions, educators, administrators, and policymakers struggle to embrace or encourage change. This struggle can perpetuate antiquated and oppressive approaches, which do not accommodate changes in technology, shifting students' needs/expectations, or new student demographics (Shar, 2023). Researchers focusing on the future of education strive to interpret, analyze, and propose possible educational strategies for possible futures.

Industry and education have a complex and sometimes tumultuous connection (Singh & Neeraja, 2022); however, industry leaders and educators are beginning to realize that the way in which people learn is changing (Shorey et al., 2021). This is compounded by the Covid-19 pandemics accelerating the use of technology and online educational spaces (Harari et al., 2023). One clear driver of changes in education is online learning and technology-enhanced learning (TEL). These drivers of change do and will have a significant influence on all aspects of the educational space, whether individuals' approach to learning, delivery methods of educational content, or administrative and organizational structure of educational institutions (Morris, et al., 2022). Youth career development professionals sit at the crossroads of changing educational approaches and practices and a changing labour market demanding new skills. The emergence of new skills is the transition to the broad topic of future of work, which provides a broad area of research on which CDPs leverage to remain informed on how the workforce is changing.

Future of Work

The topical area, known as the future of work, refers to an interdisciplinary phenomenon of interest that draws data and insights from various disciplines (economics, policy, sociology,

business, etc.). Research within this space supports various stakeholders (employers, governments, and employees) to better understand and anticipate possible future challenges within the field of employment/workforce development (Howcroft & Taylor, 2022). The implications of the field of future of work vary depending on the population seeking understanding and insights. For employers, it offers foresight into industry trends, innovative technology, and changes in employee expectations. Researchers and industry leaders have spent significant resources on understanding the changes brought into the workforce by the millennial generation (Bogosian & Rousseau, 2017). Future of work research affirms these challenges and notes that organizations will need to be responsive and adapt to the new expectations of Generation Z employees (He & Janney, 2022). As noted, millennials represent the most diverse, connected, educated, and value-driven employees to enter the workforce, and they are being surpassed by Generation Z (Atkins, 2020). This reality is significant for employers to attract, train, and retain talented young employees. Another important implication for employers, identified by future of work researchers, is the impending ‘skill gap.’ Dorsey (2022) writes: “Experts predict that by 2030, more than 30 percent of the U.S. workforce would need to be retrained or change jobs to stay employed as technology and automation change the nature of work” (p. 215). This projection highlights important considerations for the education system and career development sector relating to how to prepare and educate individuals for this type of workforce.

There are various implications for future workers when considering their future work. For example, the gig economy represents the rise of ‘side hustles’, which represent individuals being ‘self-employed’ and holding various part time positions, many of which are platform based (Uber, Amazon delivery, etc.) (Islam, 2022). While there are identified benefits of the gig economy (workplace flexibility), it represents precarious work and can result in the exploitation

of workers. Another important consideration for workers being emphasized in the future of work literature is the changing labour needs of employers with the increase in AI and automation.

Acemolu and Restrepo (2020) state:

The employment effects of robots are most pronounced in manufacturing and particularly in industries most exposed to robots. They are also concentrated in routine manual, blue-collar, assembly, and related occupations. Consistent with the presence of spillovers on non-tradables, we estimate negative effects on construction and retail as well as personal services (p. 2192).

The implication of this disruptive technology can inform which sectors individuals hope to build a career and the types of skills and education that they will need to work alongside AI technology (Mitchell et al., 2021). Bailey et al., 2019 write: “Human–machine interactions and technological surveillance are growing, with un-known consequences for meaningful work” (p. 484). Additionally, areas of emphasis within relevant literature are ‘green’ industries and emerging spaces of employment (Wallo et al., 2024). An important caution in the future of work discourse is the critique of the perspective that technological advancement will dictate and shape social change regardless of human influence (Howcroft & Taylor, 2022). This perspective is known as technological determinism, and must be scrutinized along with other important ethical implications of the possible futures proposed by various actors within the field.

The future of work field can catalyze ethical considerations for industry and government leaders. Scholars note the potential negative impact of technological advancements (robots, artificial intelligence) on individuals already economically vulnerable, specifically regarding their ability to receive and have access to training and skills relevant to the future (Dorsey, 2022). Future of work researchers have identified the elevated importance of equity and diversity in the workplace, raising concerns about the overrepresentation of equity-seeking groups in jobs

at risk of automation and being under-represented in professions that are less susceptible to major disruptions. Renski et al., (2020) write that: “understanding the possibilities for emergent technologies to impact human work and how these technologies might be designed with equity in mind” (p. 18). This is an important consideration when engaging in any form of futures research and is an important element of this research, as it aligns with the philosophical principles outlined in Chapter Four. Future of work is an important area of literature that affirms the complexity of preparing people for the labour market.

Conclusion

As emphasized in the introduction, while the critical and academic examination of employment and meaningful work is important, and supports a more holistic, political, and critical perspective toward what career development interventions are, the ‘human’ element cannot be lost within the pontificating and jargon. This emphasis aligns with the engaged scholar approach, which emphasizes slowing and reflexivity (Payne & Wattachow, 2008; Mountz et al., 2015) and the importance of being accountable to the communities in which this research is connected. Additionally, this emphasis aligns with the critical realism of centering and emphasizing the ‘human condition’ (Meyer & Lunnay, 2013). Archer (1995) affirms this, stating that a critical realist views society as, “inseparable from its human components because the very existence of society depends in some way upon our activities” (p.1). This chapter provides a literature review on career development, youth career development, future of education, and future of work. The purpose of this chapter is to clarify the space in which this research is situated, and to further establish and demonstrate the complexity of this area of research (futures of youth career development). To understand the complexity of career development, the next chapter outlines the methodological approach of critical realist-informed engaged scholarship that informed the research design.

CHAPTER 4: METHODOLOGY

As articulated in Chapter Three, career development sits at the intersection of larger societal systems (education, social services, employment, health) and, as noted, has grown in popularity as public recognition of the importance of this sector has dramatically increased over the past 20 years (Chen & Doherty, 2021). With this increased awareness and the rapidly changing nature of the current context, career development practitioners (CDPs) must consider how to best adjust their educational approach to provide relevant programs, services, and interventions that meet both workforce needs and recognize the changing values, expectations, and diverse population of students they serve. The focus of this research was to engage with youth-focused career development service providers working in Nova Scotia, to explore and develop a Futures-Oriented Theoretical Framework for Informing Youth Employment Practices. The primary research question that this study sought to answer was: *What theories and education models, surfaced through literature and community voice, might best be considered to support positive outcomes from youth career development in the years 2030?* While some research approaches embed critical realist (CR) and engaged scholarship (Van de Ven, 2007; Mukumbang et al., 2018; Paine & Delmhorst, 2020), even fewer studies leverage futures research (FR) methods. Therefore, intentional consideration was given to the implications of approaching futures thinking from a CR-informed engaged scholar perspective. The result is the development of a methodological framework adopting important features and methods from FR while being strongly informed by a CR perspective (Haigh et al., 2019; Kicheloe, 2005). The result of this study is that, in addition to engaging in the primary area of inquiry, it also provides an example of an innovative methodological approach situated at the intersection of futures research, critical realism, and educational research. The following chapter provides an overview of the methodological framework by articulating and identifying how tenets and features of FR align

with the core philosophical perspective of critical realism and engaged scholarship, and concludes with a philosophical principles' roadmap.

Futures Research

The field of futures research (FR) has been growing and adapting for over 100 years (Sardar, 2010), and spans across disciplines and methodological approaches. Bell (1997) traces its roots back to the 16th century and to the book *Utopia* written by Thomas Moore (Blass, 2003). Holding various titles (future fields, future studies, futurology, futurism) (Sardar, 2010), FR focuses on the systematic and intentional exploration of probable, potential, or preferred futures through the analysis of signals of changes (trends, emerging issues, weak signals), with the intention of understanding how to prepare, prevent, or create these futures (Slaughter, 1999; Puglisi, 2001). This is done while recognizing that the future is uncertain and cannot be fully known or created (Guana et al., 2023). Bibri (2020) articulates three ways of approaching or thinking about FR, which inform the activities and intention of said activities. They are: possible futures (what might happen?); probable futures (what is most likely to happen?); preferable futures (what would we prefer to happen?) (p. 4-5). A misconception of FR is that the result of research activities is the identification of a singular known future. Educational futurist Facer (2016) addresses this, stating: “By admitting the possibility of radical novelty, we can give permission to explore and disclose possibilities that we hitherto may not have recognised or acknowledged either as realities or desires in the present” (p. 70). A common guide is Voros’ (2003) ‘3 laws’ of futures research which state plainly that the future is not predetermined, rather, the future is unpredictable, and we can influence possible futures in the present. In this research, a transformative foresight approach will be used to identify prominent future trends that will impact youth career education within the next five to ten years. Foresight research in the field of FR seeks to explore and illuminate imagined futures (Polak, 1973) by identifying trends

and weak signals (Rowe et al., 2017). Riel Miller et al., (2018) differentiates forecasting from foresight research, stating: “Foresight as a practice, when distinguishing from forecasting, is formally premised on the unknowability of the future and hence attempts to be more systemic in imaging futures that are not constrained by projecting the past” (p. 22). FR projects do not predict or dictate possible actions or activities but instead support intentional exploration and reflection on the past, present, and possible futures. Voros (2003) affirms this writing: “Foresight, then, in an organisational context, is an aspect of strategic thinking, which is meant to open up an expanded range of perceptions of the strategic options available, so that strategy-making is potentially wiser” (p. 12). Drawing from complexity theory and systems thinking (Ahlqvist, 2022), a strong emphasis in FR is that the future is open and cannot be fully predicted, and that individuals have personal agency and responsibility for how actions in the present shape the future. Futurist Voros (2001) writes: “Our choices (in the present) and the passage of time reduce the infinite field of potentialities to a single experienced actuality, which then passes into history and cannot be changed” (p.1). This alludes to the shift within FR toward a transformative critical approach that, while supporting strategic innovation, challenges an individual's assumptions of the future (Inayatullah, 2013). The alignment between CR and FR is highly compelling and is further deepened by the critical question about the intended ‘use of the future’ (Miller, 2018, p.4).

Sentinel futurist Richard Slaughter (1999, 2003) and Sohial Inayatullah (1998, 2008) (along with others) emphasize the importance of this personal reflexivity and futures research activities that support deeper levels of analysis and interpretation. This has been a push within FR, which emphasizes the complexity of the future and how our perspectives on possible futures are strongly informed by the researcher's worldview and history. Therefore, reflexivity and collective analysis are increasingly important in the field of FR (Inayatullah, 2013). Beyond the

importance of understanding one's location and personal bias, there has been strong emphasis on considering possible futures across various levels of interpretation and analysis. Slaughter (1999) lamented that the field of FR needed to escape from the 'empiricist prison' that he perceived the field to be in during the 1990s. He stated that FS research and activities occur at distinct levels and called for a deeper level of thought and consideration regarding futures research.

To resolve this, Slaughter (2003) highlighted four layers of intention/purpose at which many FR occur. These layers are pop futurism (superficial and surface level), problem-oriented futures work (practical focusing on ways that society and organizations are responding or should respond to a near future), critical futures studies (looks below the surface to understand worldviews and meaning-making), and epistemological futures work (goes even deeper than critical futures into understanding the philosophical underpinning). Inayatullah (1998) divided FR into empirical/predictive, interpretive, and critical, which represent different assumptions of reality truth, values, and the role of humanity (Inayatullah, 2013). Both Inayatullah and Slaughter articulate that ideally, futuring work has elements from all levels, which supports a deeper transformational approach to futures research (Bowden, 2021). Many consultants will emphasize the surface or empirical nature of trends or weak signals and do not consider the deeper implications or underlying forces (worldview, bias, myths, and social values) that shape the relevant futures research findings (Facer, 2016). These deeper implications and forces are present within a broader society and the area of inquiry, but also within the futurists themselves. Therefore, this research aligns with the problem-oriented and critical future studies 'level' of FR as it seeks to probe deeply under the surface of the field of career education to surface deeper driving forces which will influence career education in the future (Slaughter, 1999). The application of FR methods is common across various industries; however, criticism and an advantage within FR are the lack of a consistent philosophical and methodological approach

(Scott, 2018). The diverse application and context of futures studies methods and approaches has led to criticism of FR as lacking consistent philosophical and methodological approaches (Scott, 2018).

Recognizing the dynamic nature of futures studies, futurist Bibri (2020) articulates that approaches within futures studies are informed by the way futurists engage and perceive the future. This study leveraged FR methods and thinking to support the identification of future contextual layers of career development programs, as understood through a CR perspective. The future orientation of this research required intentional consideration of how CR is applied, as there are minimal examples of academic thought or models on realist-informed approaches to futures research, despite several areas of strong methodological alignment (fallibility of knowledge, exploratory in nature, highly adaptable, etc.). Based on the broad applicability of CR, both methodologically and philosophically, it is important to explicitly name how CR was applied within this research, while the specifics of the approaches to research design and resulting methods are described in chapter five, the four key methodological tenets of CR influencing the FR approach require more explicit focus.

Critical Realist Approach to Futures Thinking

As noted, a criticism and advantage of FR is the lack of a prescribed methodological approach (Scott, 2018). The advantage of this for futurists is the freedom and flexibility within the field; however, as Voros (2007) states, "Knowledge inquiry cannot be properly or even competently undertaken in the absence of an understanding of the philosophical foundation underpinning it" (p. 70). Applying CR to FR methods supports the exploration of deeper aspects of the identified trends and drivers of change that influence career development (Collins & Hines, 2010). FR and CR align in acknowledging that knowledge is emergent, that futures are unpredictable (Hines, 2003; Heikki, 2006), and that despite this, the investigation and

sensemaking of possible futures is a useful endeavour. Situating this FR approach within a CR paradigm supports a structured and rigorous approach to identifying clear and meaningful future contextual layers. A realist-informed approach to futuring is a secondary output of this research, which warrants further investigation.

While there are examples of futurists adding depth of approach to the field of FR such as, critical futures (Inayatullah, 1998), integral futures (Collins & Hines, 2010), creative futures (Donnelly & Montuori, 2023), and transformative futures (Sardar & Sweeney, 2016), CR presented an intriguing and useful philosophical paradigm for this futures-oriented research project. Especially as realist methods are adaptable and are uniquely useful in "...Explicating and developing program theory in large, "messy" interventions"(Shearn et al., 2017, p. 3), which provides a nuanced structured process for deepening the inquiry process. There are limited examples of applying CR tenets to FR, however, sentinel futurist Wendell Bell did validates CR usefulness within the field (1997). One of the most clear examples is presented by Heikki (2006), who states that it is impossible to predict events or their outcomes with specific well-defined processes in open systems, but that if researchers can surface "knowledge of at least some of the relevant mechanisms and tendencies, it is possible to paint, using broad strokes of the brush, a profile of both possible and likely developments" (p. 23). While representing the broad philosophical paradigm of this research, the CR perspective toward social program design and evaluation was its primary application, specifically the Context, Mechanism, and Outcome Pattern configuration (CMO) (Pawson & Tilley, 1997). Further research is required to engage in greater depths in the broad implications of a realist futures approach; however, for the purpose of this research, the key CR methodological informing features of contextual complexity, abductive and retroductive analysis, leveraging CMO configuration, and middle-range theories are

highlighted. Beginning with contextual complexity, these features and their influence on the application and use of FR methods were explained.

Future Contextual Factors

As noted in Chapter Two, an important element in identifying causal mechanisms is identifying the social structures that are present and activated, causing a specific outcome (Elonga Mboyo, 2019). Griffiths et al., (2022) define mechanism as: "the ways in which a programme's resources interact with the reasoning and unconscious reactions of the people using the intervention" (p. 2). The causal power of mechanism is potentially hindered or enabled by the 'context' they are occurring within. The Realist and Meta-narrative Evidence Synthesis: Evolving Standards II (RAMESES) project (2017) describes the realist understanding of context as (1) pre-existing conditions for an intervention, (2) consisting of multiple layers, (3) comprising multiple factors, and (4) encouraging or hindering mechanisms. This aligns with futures thinking, as it seeks to uncover the underlying causal influences to gain conceptual clarity and situational insight (Voros, 2005). Approaches such as Voros' (2005) Generalized Layer Methodology (GLM) and Causal Layer Analysis (CLA; Inayatullah, 1998) acknowledge that futures research data are complex and influenced by various aspects of individuals, organizations, and society. Pawson and Tilley (1997) refer to the various contextual components encompassing current and pre-existing social context, the dominant social environment, and "the prior set of social rules, norms, values and interrelationships . . . which sets limits on the efficacy of program mechanisms" (p. 70). Therefore, to ensure to capture the various future contextual layers, Pawson's (2006) 4 'I's' contextual layers framework was used to help guide the abductive analysis. These layers are:

1. *Individual*: This is specific to the capacities of key actors and their interests, knowledge, and skills. For this research, the individual layer refers to youth participants

and trends relevant to their educational programs and career education perspectives. This is the space in which considerations regarding agency reside (De Souza, 2016).

2. *Interpersonal and Institutional*: Pawson separates these two layers; however, for the purpose of this research, they are combined and pertain to future contextual layers (trends) relating to the educational approaches of career educators and the physical learning environments in which programs are being delivered.

3. *Infrastructural System*: The final contextual layer is related to trends within larger systems that influence career education. Often, in CR research, this layer reflects potential funding changes. For this research purpose, the more relevant trends were changing workforce demands and technological advancements. While the budget and funding of career development organizations is an important consideration within the field, it was not the focus of this study.

These contextual layers were the framework in which identified trends were extrapolated into possible future contextual layers influencing career development in 2030. This process is explained further in chapter five, however, the importance of this CR approach to FR methods cannot be understated. By adopting the CR perspective of understanding possible futures, greater detail and understanding of the possible future surfaced through the various research activities was possible (Robinson, 2022). The identification and surfacing of possible future contextual layers were supported using abductive and retroductive reasoning and analysis throughout the research process, which is the second significant methodological CR influencing FR methods and thinking.

Abductive and Retroductive Analysis

Similar to the FR methods CLA or Emerging Issue Analysis (EIA) (Dator, 2018), this study aimed to probe beneath the surface of identified trends to develop a more comprehensive

and complex understanding of the possible future context related to career development in Nova Scotia. As noted in Chapter Two, abductive and retroductive reasoning are prominent within CR work and are the second primary CR tenets in this study. Abductive and retroductive reasoning and analysis supported the level of scrutiny required to identify trends in a manner that provided a depth of understanding of possible future contexts (Slaughter, 1998; Voros, 2001). The way in which abduction and retroduction is applied throughout this study is described in full in Chapter Five. The third key area of CR influence on futures thinking is the application and leveraging of the CMO configuration in the research design process.

Leveraging CMO Configuration

Researchers within both fields (CR and FR) emphasize that research findings are not predictive but are explanations of possible futures or reasons for a particular phenomenon to occur (Wynn & Williams, 2012; Voros, 2003). As emphasized above, the intention of realist research is to provide explanations of causal processes (causation) that lead to outcomes triggered within social programs. Realist researchers have used the CMO configuration to support their investigation of causal explanations (De Weger et al., 2020). A brief example of how this CMO configuration provides this can be seen in this fictional example. Assuming that the future labor market is heavily influenced by automation (context), which then elevates concerns among youth regarding their ability to find meaningful employment (context). Through intentional programming, one career development organization focuses on developing youths' abilities in life-long learning (mechanism). The result is that youth develop the necessary skills (outcome) and hope (mechanism and outcome) in their abilities to find work and remain attached to the workforce. However, as noted by Pawson and Tilley (1997) and other realist researchers (Archer, 2007), mechanisms are not static; they can interact dynamically with the context, producing outcomes that can become mechanisms in subsequent interactions. This dynamic and

interactive nature demonstrates the brilliance and complexity of CR research. For example, ‘hope’ could function as a structural mechanism, as it provides cognitive and emotional support for career adaptability (Danermark, 2019). This could also be considered an important outcome of any youth career development intervention.

Understanding this complex dynamic, coupled with the ultimate intention of developing a broad generalizable futures-oriented theoretical framework for CDPs in 2030, this research required an adapted approach to the CMO configuration that warrants further clarity and explanation. As noted above, the identification of the various contextual layers is integral within CR-informed research and program design (Pawson, 2006). The context of programs and intervention empowers or restrains mechanisms that directly influence the outcomes of programs, and therefore is vital in program theory development and evaluation (Nielsen et al., 2022). Recognizing the dynamic nature of the CMO configuration, understanding that the future is unpredictable, and that mechanisms only generate effects when activated under certain conditions (Sayer, 2000), specific CMO configurations were not developed in this research. Specific CMO configurations were viewed as too definitive, descriptive, and not fully accounting for the complexity of the future, contextual layers along with the respective outcomes, and dynamic relationships between outcomes and mechanisms (Bibri, 2020). To develop the futures-oriented theoretical framework, an adaptive approach to the CMO configuration was leveraged. It should be noted that specific research activities were used to surface outcomes and contextual layers; however, mechanisms surfaced within the explanatory power of middle-range theories, ensuring that their role is theorized rather than rigidly defined. FR methods identify possible future contextual layers (C), short-medium term outcomes (O), and using retroductive reasoning middle-range theories were identified, incorporating the surfacing of causal mechanism (M). This adapted approach to the CMO configuration, with its emphasis on identifying middle-range

theories that explain how career development outcomes interact with future contextual layers, meant that cataloging isolated mechanisms was unnecessary. This aligned with the intention of this research, which was to develop an explanatory framework that allows for mechanism transferability across diverse contexts (Pawson & Manzano-Santaella, 2012). Listing mechanisms independently risks oversimplification and reductive thinking (Maxwell, 2012). Unlike studies that isolate mechanisms as independent variables, this research theorizes mechanisms within the identification of middle-range theories (phase seven of the research design), allowing for mechanisms to be inferred through theoretical reasoning, ensuring a deeper, more robust explanatory model. Ultimately, the data and insights of each element of the CMO configuration supported and led to the development of the futures-oriented theoretical framework. This adapted approach to the CMO configuration led to the intentional language of this research being ‘realist-informed’, as many CR researchers would emphasize that the approach does not truly represent the depth required of a ‘true’ realist evaluation, as specific and detailed CMO configurations are not provided. This is identified as an area for future research.

Middle-Range Theories

The use of middle-range theories is prominent within CR and is highly useful for this research. Pawson and Tilley (1997) strongly lean on Robert K. Merton’s concept of middle-range theories. They described middle-range theories as explanatory models that bridge abstract grand theories and context-specific hypotheses, allowing for transferability across contexts. It should be noted that the ‘boundaries’ between these categories are permeable, but that middle-range theories can act as a helpful bridge (Kislov et al., 2019). Merton (1968) himself describes middle-range theories as those that “lie between the minor but necessary working hypotheses that evolve in abundance during day-to-day research and the all-inclusive systematic efforts to develop a unified theory that will explain all the observed uniformities of social behavior, social

organization and social change” (p. 39). Kaidesoja (2018), in reference to Merton’s (1968) work, emphasized that middle-range theories guide empirical research and generate theoretical problems for researchers to study (p. 2). This approach of using middle-range theories supports the development of a broadly applicable theoretical framework, which is grounded in identified future contextual layers and inferred mechanisms and is oriented toward identified outcomes (Kaidesoja, 2019). Some realist researchers would describe the theoretical framework as a ‘program theory’, although as Shearn et al. (2017) articulate, the term ‘program theory’ varies widely within realist-informed research. Pawson (2010, 2013) uses middle-range theory and program theory interchangeably, emphasizing their roles in high-level abstraction and generalization. Shearn et al. (2017) take a narrower approach, defining program theory as explaining how a specific intervention is theorized to lead to a goal (p. 3), although they acknowledge that program theories interact with broader middle-range theories.

Despite this complexity, this study aligns with Pawson’s broader interpretation of program theory, as the theoretical framework presented here is intended to be a broad and generalized framework rather than a rigidly defined intervention model. The term framework was chosen over program theory to ensure accessibility and conceptual openness, allowing for adaptation and refinement based on emerging career development interventions.

These four CR methodological tenets shaping the application of FR methods are unique and important for understanding the design and approach of this research. Foundationally, this approach supported the development of a broad and generalizable theoretical framework informed by the CMO configuration and composed of middle-range theories. This allowed the effective accounting of causal elements, addressing or transcending the inherent complexity and tensions involved in considering possible future outcomes and mechanisms while also accounting for possible future contextual layers. The remainder of this chapter is a philosophical

roadmap (Wilson & McCormack, 2006) providing further transparency of the values and principles shaping this research. While adopting tenets and approaches from various research approaches, all research activities were developed through the lens of CR, with the influence of the values and principles of engaged scholarship.

Philosophical Principles Roadmap

As emphasized in Chapter Three, this research embeds the principles and values of engaged scholarship within the philosophical paradigm of CR. Engaged scholarship offers a coherent and robust set of values and principles that represent my positionality as a researcher, research context, and purpose, while CR represents a philosophical framework that provides a credible and robust paradigm to explain how these values and principles are applied. To ensure clarity of the way in which these two areas of scholarship have informed the methodological design, a ‘roadmap’ of philosophical principles was developed (Wilson and McCormack, 2006). The importance of this is validated by realist researchers Withell and Haigh (2018), who wrote:

Critical realists take a pragmatic position in relation to research methodology, types of data and data gathering and analysis methods. They contend that a mix of data types (including quantitative and qualitative) and forms of methodology and methods may well be required to address particular research questions. However, decisions about these design considerations must align with CR perspectives on the overall purposes of research – the theorising of causal explanations for experienced events and outcomes (p. 322).

Wilson and McCormack (2006) showed that this activity is important in demonstrating a conceptual alignment from a philosophical paradigm to design, to analysis, and then to conclusions. McClintock (2003) emphasizes that identifying principles within an engaged scholar project will help maintain “a middle ground between general theoretical orientations and

profession-specific techniques” (p. 395). This roadmap is intended to illuminate the principles that have informed decision making and highlight the various philosophical assumptions that informed the proposed study design. The specific influence of this paradigm on research design is discussed in detail in the following chapter. The following principles and criteria provide clarity to philosophical assumptions that informed the rationale and reasoning for decision-making throughout this work. It should be noted that the following philosophical principles do not include principles regarding ethical research practices and activities (as stipulated by Tri-Council requirements and guidelines). The alignment and adoption of these ethical principles were assumed and diligently followed. The first guiding principle is the importance and validation of various forms of knowledge (data) that inform research conclusions.

Recognition and Value of Diverse Sources of Knowledge

As articulated above, this dissertation strove to move beyond isolated academic activity to support meaningful and intentional enhancement of practice. While foundationally this research is an academic exercise, the ultimate intention is to generate knowledge that is relevant and useful to scholars and practitioners (Morrison, 2020). The principles of engaged scholarship and CR propose that reality is composed of various structures and forces and that researchers must strive to engage with these unseen forces. These principles clarify the importance of various viewpoints and data sources (Wynn & Williams, 2012) and validate engagement with the relevant community members. It is important to not only receive insights from community, but also to both affirm its credibility and incorporate their perspectives, experiences, and understandings into the entire research process (McNiff, 2013). As articulated in Chapter Two, by connecting academic research with practitioners’ lived experiences and perspectives, co-created knowledge strengthens the links between practice and theory (Franz, 2009). From an epistemological perspective, CR emphasizes that, while ‘reality’ exists outside one's perspective,

individuals have agency and make sense of their world through their lived experience and worldview, and that this is valid and an important consideration in research activities (Oliver, 2012). “Critical realism is based on the premise that research centered on understanding human experiences should concentrate on human cultural norms, values, symbols, and social processes viewed from a subjective perspective” (Meyer & Lunnay, 2013, p. 1). This is the foundational principle that shaped and informed the design of this research. The next shaping principles are agency and intersectionality.

Agency and Intersectionality

The focus of this research is to develop a future-oriented theoretical framework for career education with the goal of supporting career development practitioners to develop new or enhance their current practices and interventions. As noted above, foundational for this research was the identification of future contextual layers, hoping for outcomes and relevant causal mechanisms, which will support the surfacing of meaningful and effective futures-oriented middle-range theory to support CDP program design in the year 2030 (Clegg, 2005). However, an inherent challenge within this broad perspective of context is the possibility of developing a framework that does not account for the agency and intersectionality of youth participants. A significant area of focus in education research is the importance of inclusion and anti-oppressive approaches and considerations (Kajner, 2013). Broad contextual layers related to the trends within Generation Z were identified. However, to ensure that the resulting framework supports inclusive and anti-oppressive intervention development and design, an emphasis on identifying relevant middle-range theories that evoke and empower CDPs to consider the uniqueness and relevance of youth participants’ intersecting identities was paramount.

This principle is grounded in the acknowledgement of complex systems thinking within CR and the emphasis on positive social transformation within both CR and engaged scholarship

literature (Haigh et al., 2019; Wilson & McCormack, 2006). Gallard Martínez et al., (2020) emphasize this as they note that many intervention-research designs do not account for the underlying complex social factors of social inequity, racism, prejudice or gender bias. Haigh et al., (2019) further reinforce the ‘emancipatory worldview’ of the realist paradigm stating it’s “inherent focus on ‘what to do’ to improve people’s human rights situation” (p. 4). Therefore, this principle acknowledges and affirms the existence and negative impact of these complex societal structures on youth participants and prioritizes the identification and integration of relevant middle-range theory, which contributes to supporting all youths to thrive. An example of such a theory is the Feminist Standpoint Theory (FST), which Kuk and Holst (2018) used to critique the experiential learning model and specifically the operational definition of the learning concept of reflection. They identify that FST emphasizes and challenges the assumption that all knowers are the same, and that “...one should consider “who” is engaging in reflection” (p. 151), and not assume that all individuals’ experiences are similar or compatible. FST is a helpful example of how a theory can support CDPs in considering inclusive practices when designing career education interventions. The next principle emphasizes the importance of accountability and reciprocity.

Reciprocity & Accountability

As discussed earlier, an important shift in the approach to research is pushing academics to ensure that their research activities move away from the historical extractive approach and toward a scholarship involving practitioners and relevant stakeholder in mutually beneficial research activities and that the resulting ‘knowledge’ leads benefiting, improving, and supporting society and relevant systems (McNiff, 2013). Reciprocity within a research project can be a challenge (Hutton & Heath, 2020), and a regular routine for evaluating and reviewing partnerships is a vital part of any project that adopts an engaged scholar approach (Easter et al.,

2021). Attention must be paid to maintaining the relational core of any engaged scholar approach (van Marrewijk & Dessing, 2019). Kajner (2013) emphasizes that reciprocity represents a particular way of being together, which is grounded in mutual respect and relationship and that: “Without this attention to how we are co-constituted, subjectively positioned by our interactions with one another, engagement can lead to knowledge that seems to be co-created, but in reality, is a relationship of exploitation and oppression” (p. 15). When researchers adopt this principle of reciprocal relationships, they are accountable to ensure that research activities not only result in knowledge creation but also in knowledge that is co-created and relevant to community partners (Simba & Ojong, 2017). Easter et al., (2021), identified five general approaches that engaged scholars can employ to navigate research-practice divides and support reciprocal relationships. The five approaches are (a) remembering the purpose of the research, (b) emphasizing relationships, (c) engaging in self-learning, (d) practicing reflexivity, and (e) framing results. Reflexivity and flexibility are identified as core methodological principles that further reinforce the reciprocity of this research approach.

Reflexivity and Flexibility

Reflexivity, as outlined above, is an important driving force behind the design and development of this research (Chapter Two). Foundationally, reflexivity is an important activity for researchers to perform throughout research projects as it helps illuminate the rationale, bias, and philosophical assumptions behind decisions and offers clarity for readers (Sun & Trent, 2022; Mesel, 2013). Within an engaged scholar approach, reflexivity is highly important, as researchers and community members must constantly consider the power dynamics between themselves and critiquing the various research activities and processes. Researcher van Marrewijk & Dressing (2019) affirm this, plainly stating: “Project scholars and practitioners need to be reflexive of their roles in the development of scientific knowledge and avoid

developing dysfunctional relationships” (p. 885). Reflexivity was an ongoing practice embedded within all research activities and was paramount in ensuring that I remained somewhat aware of how my worldview and previous experiences influenced research design and knowledge creation. Easter et al., (2021) emphasizes that researchers need to consider how they “may affect the involved stakeholders and their view on the topic under study (and vice versa)” (p. 19) and work to identify and illuminate this. This effect is not inherently negative; however, researchers must be reflexive about this ever-evolving dynamic. The act of reflexivity can also result in identifying new ways of approaching research activities or identifying previously unexplored areas of research. The importance of flexibility and adaptability aligns with the CR tenet that the process of discovery is ongoing and changes as new learning and approaches emerge (de Bernardi, 2022). A CR perspective maintains that knowledge should continually be critiqued, challenged and revised (Eastwood, Mukumbang, and De Souza, 2021). This strongly aligns with Boyer’s (1990) conceptualization of scholarship, as follows:

A broader, more capacious meaning, one that brings legitimacy to the full scope of academic work. Surely, scholarship means engaging in original research. But the work of the scholar also means stepping back from one’s investigation, looking for connections, building bridges between theory and practice, and communicating one’s knowledge effectively (p. 16).

This quote highlights that reflexivity should result in flexibility and can help individuals understand their perspective and bias more (Levy, 2003). Gallard Martínez et al., (2020) describe this type of reflexivity as ‘radical doubt’ and is foundational to their contextual mitigating factors (CMF) analysis approach. The emphasis of ‘radical doubt’ is that researchers must dig deeper into the complex systems that make the space of inquiry. This strongly aligns with CR and leads to the next methodological principle of acknowledging and embracing complexity.

Acknowledging and Embracing Complexity

Pawson (2006) emphasizes that social programs (example: career development programs and interventions) are complex systems amidst complex systems. CR recognizes the complexity of open systems in which social phenomena occur and recognizes the complexity of context and programs (Fletcher, 2017). The acknowledgement of the complexity inherent within social phenomena and programs is grounded in CR ontology and provides a useful framework for understanding and describing said complexity. Haigh et al., (2019) wrote: “The social world is a layered, complex and open system. Within this system, multiple entities are present, the types of entities are wide ranging, each entity may subsume other entities or be subsumed within other entities, and a vast array of these entities’ mechanisms may be activated and in play moment by moment” (p. 4). Within the context of career development, complexity (as demonstrated in chapter three) can be found in human participants, the diverse stakeholders of said programs, various connected social systems (education, employment sectors, economics, social services, etc.), and the psychosocial educational context in which the social programs are situated (Pawson, 2013; Gallard Martínez et al., 2020). Youth career education programmes are inherently complex.

Educational researchers Ndaruhutse, Jones, and Riggall (2019) write: “...when looking at education with systems thinking, there is an acknowledgement that the different components of the system interact including formal and informal institutions, processes, people, and social norms and behaviours” (p. 21). As the intention of this study was to help support large system changes within the career development system, it was important to adopt a research methodology that engages individuals within the system of focus to better understand and engage with the complexity of system dynamics. The final guiding principle was the development of exploratory theory.

Explanatory Theory-Development

Critical realist inquiry is a theory-driven, explanation-seeking research approach that intentionally focuses on engaging with the black box of social programs (Pawson, 2006). This is a foundational concept of CR that shapes its focus on causation, theory development, structures, and mechanisms (Stutchbury, 2022). A CR-informed research approach allows for a diverse cross-section of methods to be used to identify and develop embryonic program theories, which allows for diverse research voices (feminist researchers, critical theory researchers, etc.). This supports hidden mechanisms and theories that can support meaningful career development. Using strong critical realist language, Fletcher (2017) writes: “The theories that help us get closer to reality, i.e. that help us identify causal mechanisms driving social events, activities, or phenomena, are selected and formed using rational judgment of these social events” (p. 182). As noted above, it is important to consider the rigour-relevance gap (Easter et al., 2021) when adopting an engaged scholar approach. The rate of change within society has accelerated (Eliazar & Shlesinger, 2018; Thillaivasan et al., 2020), and youth career development educators are faced with a highly complex and rapidly changing educational context. Therefore, the emphasis on explanation seeking and theory development helped to develop a Futures-Oriented Theoretical Framework for Informing Youth Employment Practices.

Conclusion

In conclusion, there is little supporting literature on how to approach the development of a CR-informed futures-oriented theoretical program framework, making the articulation of the many methodological influences and principles that shape this research imperative. This chapter establishes the foundational context and methodological considerations that underpin this research. While firmly embedded within a critical realist paradigm and adopting an engaged scholar approach, this chapter presents the contributions of participatory action research and

futures research. This was followed by the development of a philosophical principles roadmap (Wilson & McCormack, 2006), which was intended to ensure transparency of how the larger philosophical paradigm shaped the investigator's approach. Building on this, chapter five describes the specific research design and methods used to answer the research questions.

CHAPTER 5: RESEARCH DESIGN AND METHODS

This study employed an iterative and exploratory process to guide the development of a Futures-Oriented Theoretical Framework for Informing Youth Employment Practices. Grounded in a critical realist (CR) paradigm, this research not only conceptualizes a framework that is theoretically robust but also ensures its practical applicability for career development practitioners (CDPs) working with youth in the year 2030. As emphasized above, the intention of the research is to empower educators with a futures-oriented theoretical framework that supports program design specific to their organization's unique context but is generalizable enough to be applied across Nova Scotia. The primary question of this research is: What theories and education models, surfaced through literature and community voice, might best be combined to support positive outcomes from youth career development programs in 2030? Three sub-questions were asked to inform the primary question as aligned to the Context, Mechanism, and Outcome Patterns (CMO) configuration. These questions are:

1. *Outcomes: What are the perceived desired outcomes of career education held by career development professionals and Generation Z industry stakeholders?*
2. *Contexts: What important trends and emerging considerations relevant to the educational design, creation, and implementation of meaningful youth career interventions/programs are anticipated in the next 5 to 10 years?*
3. *Mechanisms: What middle-range theories, models, and approaches could help support positive career education outcomes considering the future context shaped by the identified trends and emerging considerations?*

The chapter begins by outlining the overarching research design and articulating the way in which the design was formed and shaped by the philosophical paradigm. It then delves into the specific research methods used, with detailed procedures and activities taken in each step.

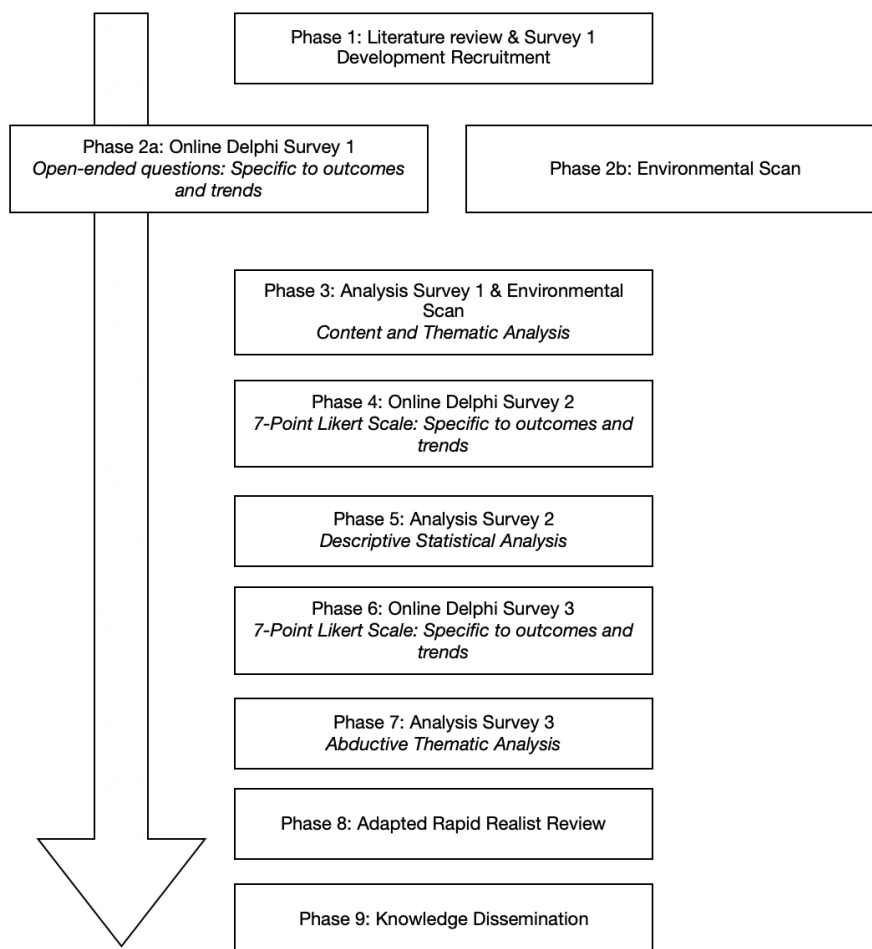
This chapter describes how data were collected, analyzed, and synthesized to construct a futures-oriented theoretical framework. As emphasized, the complexity of this research phenomenon requires various data collection methods to develop a robust, rigorous, and valid theoretical framework. An adaptive and iterative approach was adopted to ensure the transparency and cohesiveness of this process.

Research Design

This study used an emergent scaffolded research design composed of nine phases. Engaged scholars, such as Aguinis et al. (2014), Bansal et al. (2018), and King and Learmonth (2015) encourage academics to establish trusting relationships with organizations to ensure a strong engaged scholarship. Therefore, while this research resulted in the completion of my doctoral research, it was done in partnership with the Centre for Employment Innovation (CEI), which was part of the Coady Institute located at St. Francis Xavier University. It should be noted that at the completion of this research (2025), the CEI was no longer operating. However, in this study, CEI leadership was active and supportive. The CEI was a provincially funded centre that was part of the Nova Scotia Works provincial system and works alongside provincial partners and career development organizations to help support innovation within the career development sector across the province. This is an important part of this research project, as it grounded the research within a community partner who was intended to support the application and ongoing engagement with this research, further aligning with the intention and purpose of engaged scholarship (Easter et al., 2021). Despite this, the research design, while being predominantly researcher-led, was intentional about multiple points of contact for career development professionals to share their expertise and shape the research. See figure 2.

Three primary data collection methods were used: (1) a modified participatory Delphi method (Geist, 2009), (2) environmental scanning (Saritas & Smith, 2011), and (3) futures-

oriented adapted rapid realist review (Vasey et al., 2022). Integrating results from the three methods across the nine phases was needed to collect the depth of data required to answer this complex research question within a CMO framework (Brush et al., 2022; Suto et al., 2019). These methods were chosen based on the goal of centering voice and expertise of career development practitioners in the resulting theoretical framework (Brush et al., 2022; Suto et al., 2019). A description of the modified Delphi panel, environmental scan, and adapted rapid realist review is followed by the nine procedural phases in this study.

Figure 2*Research Design***Modified Delphi Panel**

Delphi panels are a popular method in FR. The term Delphi is based on the ancient Greek oracle at Delphi, which, according to Greek mythology, offered visions of the future to those who sought advice (Giest, 2009). The Delphi method was first introduced by the RAND Corporation with the support of the United States Air Force (Kennedy, 2004). In the 1960s, the Delphi method increased in popularity and was adopted across numerous sectors such as nursing, business, and health services (Suto et al., 2019; Hasson, Keeney, & McKenna, 2000). The

purpose of the Delphi method is to obtain and understand expert opinions to inform the long-term forecasting of abstract topics and areas of inquiry (Landeta, 2006; Rowe & Wright, 1999). Foundational to an individual survey-response online Delphi method is its confidential nature, which is intended to pre-emptively address the negative effect of political conflict, ‘group think’, or silencing of voices due to power structures at play which are connected to in person gatherings (Geist, 2009; Dari et al., 2019; Rowe & Write, 1999). The strategy of multiple rounds of questionnaires incorporating feedback from previous rounds supports an effective and efficient way of gathering insights and most importantly, consensus from an expert panel (Brush et al., 2022; Ismail & Taliep, 2020).

Since its conception, many varieties of Delphi methods have been developed, such as the Policy Delphi Panel, Modified Delphi Panel, Real-Time Delphi Panel, and EDelphi Panel (Suto et al., 2019). The adaptive nature of the Delphi method increased the necessity of researchers to ensure transparent methods to allow reviewers and readers to assess the rigour and trustworthiness of the approach each time it is reported (Hasson, Keeney, & McKenna, 2000). The internal credibility supporting the validity of the Delphi method is highly reliant on both the design and application of the method but is ultimately grounded in the knowledge and insights of the expert panel (Dari et al., 2019). Community experts' opinions and focus on forecasting are two key well-supported and developed tenets of Delphi methods (Brush et al., 2022).

The modified Delphi process can be categorized into three main actions. The first is planning, which included phase one. The second action was data collection, which occurred in phases two, four, and six. The final action, analysis, and interpretation occurred in phases three, five, and seven, respectively. This study leveraged a three-round Delphi process that consisted of gathering meaningful data while interweaving data from other collection activities

(environmental scan and rapid realist review). The next primary data collection method was an environmental scan.

Environmental Scan

Environmental scans (ES) are FR methods that systemically identify forces of change, trends, and emerging issues (signals) that are relevant to an area of inquiry (Jethra et al., 2021) and are a favorable method for offering flexible planning tools for complex contexts facing uncertainty (Rohrbeck & Bade, 2012). ES are highly adaptable and focused on not ‘foretelling’ or dictating the future but instead seeking to give ‘broad brushstrokes’ of trends that are extrapolated from relevant data sources (Slaughter, 1998). Morrison and Mecca (1988) identified the usefulness of environmental scans in higher education, noting the rapidly changing landscape of education and the importance of strategic thinking and planning. As articulated above, the field of career development is situated at the intersection of various complex systems (Varma et al., 2022), and with increased turbulence and complexity, practitioners can struggle to anticipate changing demands to support positive educational outcomes (Autin et al., 2020).

The ES conducted in this study helped to identify trends and signals of change relevant to the near future (2030) across various themes of youth career education (individuals, educators, broader society, etc.). The timeframe of 2030 is important, as it framed and focused on the scanning process in identifying trends that were more mature and established, which supports the potential of their actual impact on the field of youth career development. This differs from other futures research which seeks to identify ‘weak signals’ which represent signals of change which could lead to possible futures currently unknown or not yet established (Saritas & Smith, 2011). Trends are described as recognizable, historical, and visible paths and impact on the respective area of inquiry (Hines et al., 2018). Trends represent changes that are known and that have or are shaping the respective contexts or phenomena. Emerging considerations, while holding some

similarity to trends, differ, as they represent a potential emerging change but are not yet established. Acknowledging the limitations of generational theory, some insights were drawn from the literature relating to Generation Alpha (2013-ongoing); however, at the point of this research, minimal research has been conducted on this generation. Generation Z was the primary focus of the study.

Leveraging an adapted version of the six steps outlined by Hines et al., (2018) (input, criteria, combining, analysis, interpretation, and output), this ES was done in four steps (input/scanning, criteria, analysis/interpreting, and finally output), and created a ‘map’ of trends shaping and influencing possible 2030 futures of youth career development (Inayatullah, 2008). Scanning activities within FS have been criticized for their lack of rigour and transparency. Hines et al., (2018) describe the scanning process and resulting analysis as more of an ‘art’ than a specific science, however, to ensure transparency, the process, data gathered, and analysis process occurring across the four steps are provided in chapter six. The primary function of ES was to triangulate the findings from the first step of the Delphi method, as described above. The final source of data was a futures-oriented, adapted, and rapid realist review.

Futures-Oriented Adapted Rapid Realist Review

Ray Pawson pioneered and outlined the process and function of realist review (sometimes referred to as a realist synthesis) in his 2006 book *Evidence-based Policy: A Realist Perspective*. Realist reviews seek to unpack the realist mantra of ‘what works for whom, in what circumstances, and in what respect’ (Pawson et al., 2005). This is accomplished through reviewing, critiquing, and synthesizing data gathered from primary data, academic articles, reports, and other sources to illuminate contextual factors and causal mechanisms (and relevant theories) that encourage or hinder the desired outcomes of the social program or intervention being reviewed (Graham & McAleer, 2018; Fernee et al., 2017). Pawson and Tilley (1997) write:

“Programs work [outcome] only in so far they introduce appropriate ideas and opportunities [mechanisms] to groups in the appropriate social and cultural conditions [context]” (p. 57). This directly references the realist perspective of causation and, specifically, the CMO configuration described in chapter four. Differing from standard systematic reviews that summarize existing literature/evidence and often focus on effectiveness, a realist review focuses on a nuanced examination and search for data relevant to uncovering mechanisms (often understood as theories), the context that supports their activation, and the outcomes to which they lead (Vasey, 2022). Pawson (2006) emphasizes that the realist reviews process is adaptable and iterative which, while having a formed process, provides researchers flexibility to pursue new areas of interest and relevant theories during the review. Wong et al., (2013) state that realist reviews support researchers to elicit: “from the literature the main ideas that went into the making of a class of interventions (the program theory). This program theory sets out how and why a class of intervention is thought to ‘work’ to generate the outcome(s) of interest” (p. 2). This iterative approach emphasizes the importance of abstraction and supports its compatibility with complex programs (e.g., career development) (Fernee et al., 2017).

Realist and Meta-narrative Evidence Synthesis: Evolving Standards (RAMESES) (Wong et al., 2013) and RAMESES II (Wong et al., 2016) provide a strong guiding voice supporting the development of quality standards related to publication and review practices (Shearn et al., 2017) but do not necessarily provide a step-by-step method or process. This is consistent with the adaptive and emergent nature of realist reviews, as emphasized by Pawson (2006). This iterative nature has led to various adaptations of the realist review process, first proposed by Pawson (2006), one of which is the rapid realist review (RRR) method developed by Saul et al. (2013). Saul et al., (2013) first proposed RRR as a “tool for applying a realist approach to a knowledge synthesis process and producing a product that is useful to policy makers in responding to time-

sensitive and/or emerging issues where there is limited time and resources” (p. 2). Where Pawson (2006) outlines six stages: Identifying the review question; Searching primary studies; Quality Appraisal; Extracting the data; Synthesizing the data; Dissemination findings, all with differing tasks and activities, Saul et al., (2013), highlight 10 steps in their process: Development of the project scope; Develop specific research questions; Identification of how the findings and recommendations will be used; Development of search terms; Identification of articles and documents for inclusion in review (published and grey); Quality review; Extraction of data from literature; Validation of findings with content experts; Synthesis of the findings in final report and finally; and, dissemination of results. Succinctly, RRR adapts Pawson’s ‘traditional’ realist review to maintain and provide the theory-driven, explanation-seeking review approach, with the refined focus of a scoping review and an explicit intention of identifying interventions as opposed to theories (Saul et al., 2013, p. 3). While many elements of the RRR process aligned with this research, the focus on interventions was a significant departure from the researcher’s intention to identify and develop a theoretical framework that can then be used to develop and identify possible interventions. The result was an adapted six-step process, which is explained further in this chapter.

Research Design Phases

This study is an explanatory critical realist-informed project that, with the use of FR methods, identified future contextual factors relating to youth career education (context), desired short-term and long-term outcomes, and surfaced mechanisms that support these outcomes in future layers for the purpose of identifying middle-range theories that would support CDP’s to intentionally and critically consider how to design career development programs in 2030. By incorporating realist principles into program and service development, this research supports a deeper questioning and considering, and hopes to move CDP’s questions and consideration from

simply ‘does it work’ to ‘for whom, in what context, in what respect, to what extent, and how does or did it work?’ (Westhorp et al., 2016). The remainder of this chapter describes the research process and activities undertaken.

Phase 1 – Research Planning

This phase was composed of a preliminary literature review that helped shape and inform the development of survey one (Suto et al., 2019), with the simultaneous recruitment of participants for the research. A purposeful sampling approach was used to identify and recruit participants for the Delphi panel. As noted above, the CEI was embedded within the Nova Scotia career development system and had strong connections with individuals who fit the criteria for the panel. The inclusion criteria for participation within the Delphi panel were individuals that provided direct career educational services to Generation Z participants or were working within the career development field and were themselves part of Generation Z (1997-2012). The inclusion criteria were broad to ensure that the panelist would have firsthand experience and expertise to draw upon, or have firsthand experience as a young person, with an added level of familiarity with the field of career development (Dari et al., 2019).

Additional efforts were made to ensure representation of various intersections of identity (gender, race, ethnicity, sexual orientation, gender identity, disability, class, etc.) and the context in which they work (urban and rural). This was done by intentional snowball sampling and invitation to individuals, ensuring that the insights and data gathered represent a diverse cross-section of perspectives and experiences, which aligns with the guiding principle of intersectionality (Ismail & Taliep, 2020).

Consistent with the engaged scholarship approach, through my work with the CEI, I was a part of this community. Therefore, I had pre-existing relationships with relevant individuals and potential organizations. Therefore, it was ethically appropriate to communicate with and

contact individuals directly. During the initial communication, intentional language was used to ensure that participation was voluntary and that there would be no repercussions if they chose not to be involved. There is lack of consensus regarding the number of participants to include in a Delphi panel; however, for the purpose of this research, the intention was to have between 15-25 Delphi panelists who represented the diverse population and context of Nova Scotia. This sample size allowed for potential panelist attrition, but was also not so large that it represented an unmanageable number (Ismail & Taliep, 2020).

Phase 2a- Delphi Panel Survey 1

After panelists were recruited, The Explore Survey (Appendix F) was made available online on November 16, 2023, and was open until November 24, 2023. This survey was composed of two open-ended questions:

1. Based on your experiences, what are some of the best possible short & medium-term outcomes which can result from youth (ages 11-17) engaging in career development services, programs, or interventions, which will support that long-term outcome of meaningful workforce attachment?
2. Have you noticed any changes, emerging trends, or patterns surfacing in the context of youth career development or/and in the needs and preferences of the youth (ages 11-17) you support? If yes, what changes, emerging trends, or patterns are you most curious, excited, intrigued by, or nervous about?

The Explore Survey was sent to each panelist using secure Qualtrics survey software. As noted, the survey was developed in phase one, the purpose of this survey was to gather data relevant to the short-medium term positive outcomes of youth career education and emerging changes and trends which career education professionals have noticed in their work or are concerned about (future context). Survey one was highly exploratory and focused on developing a foundation of

community insights. Panelists were given two weeks to complete the online survey. After week one, I followed up with each panelist to either thank them for completing the survey or remind them to please complete the survey.

Phase 2b- Environmental Scan

Drawing on established frameworks, this environmental scan was structured around a four-step process (Morrison & Mecca, 1988; Hines et al., 2018; Voros, 2003). The first step, input/scanning, involved collecting data from diverse sources to identify potential signals, trends, and emerging issues (Hines et al., 2018). In the second step (criteria), a set of evaluative standards were applied to filter and assess the relevance, credibility, and potential impact of the gathered data. The third step, analyzing/interpreting, entailed an examination of the signals and their relevance to career education in Nova Scotia. The final step, output, resulted in a list of trends relevant to career education in Nova Scotia focused on the near future of 2030. In addition, emerging issues analysis (EIA; Dator, 2018) was used to help enhance the rigour of the process. EIA is composed of similar steps (Scanning; Filtering, Analyzing, Prioritizing, Communicating) to the scanning process put forward by Hines et al., (2018). The specific actions taken in each step were as follows:

ES Step 1 – Inputs/Scanning. Specific domains of interest were identified to focus the scanning process. The domains shaping the scanning work were future of work, future of education, future of career development, and emerging generational values. During this step, a search was conducted across various sources (academic articles, books, videos, news articles, organizational reports, and other online content), to identify ‘signals’ (trends and signal of change) related to the four domains (Hines et al., 2018). Trends within these domains were captured and tracked using an Excel spreadsheet to ensure that their sources were recorded. As noted, the process of ES is fluid and emergent, and the purpose of this ES was to contribute a

broad set of possible trends, recognizing that any trends resulting from the ES would be scrutinized and assessed by the panelist. Therefore, while ES was an important source of data, a robust search protocol was not captured, as it was not necessary, knowing that the results would be rigorously analyzed at a later point. The databases, domains, and search terms used are listed in Table 1.

ES Step 2 – Criteria. All the resulting scanning hits were reviewed using consistent inclusion and exclusion criteria (Appendix A). Sources produced before 2019 were removed, along with duplicates and broken links. Each identified trend was critiqued using the following three criteria: credibility, relevance, and impact. Credibility refers to the sources of the identified trend and whether the trend is validated by additional sources. The criterion of relevance ensures that the trend is relevant to the specific timeline (5–10 years) and the focus of this study. Finally, the impact criteria focused on how much the trend may change the field of career education and the scope of the impact (Hines et al., 2018). After the emerging trends had been screened, they were compiled into a list. The scanning hit (trend) was put into a Microsoft Excel document, along with key quotes and resource citations. New trends were added throughout the scanning process, and additional quotes and citations were added to existing trends.

Table 1

Environmental Search Terms

Database	Domain	Search Terms
MSVU Novanet	Career Development	Career development; Career education; Youth; Generation Z
MSVU Novanet	Future of Education	Future of Education; Generation Z; Generation Alpha

MSVU Novanet	Future of Work	Future of work; Generation Z; Generation Alpha; Workforce development
Google Search	Future of Work	Future of work; Youth; Trends; Canada
Google Search	Future of Education	Education; Youth; Trends; Future of Education; Canada
Google Search	Career development	Career development; Youth; Trends; Canada

ES Step 3 – Analysis/Interpreting. This was an iterative process throughout the first three steps of the ES. Following the conclusion of the primary scanning process, the trend list was scrutinized using the 4I framework (Pawson, 2006) and further assessed for trends that supported the illumination of possible future contextual layers. This ensured that this research activity identified trends below just the ‘pop/empirical’ level, and probed under the surface into worldviews, expectations, and values (Inayatullah, 2008). This was done using abductive reasoning, with the examples given in chapter six. This analysis and interpretation helped refine the list of trends that were most relevant connected to the intention of articulation possible future contextual layers.

ES Step 4 – Output. The output from the ES was a list of trends, as informed by the scanning process, and resembled trends relevant to the future contextual layer of youth career development in Nova Scotia by 2030. The trends were organized into a 4I framework, with clear definitions developed for them (Appendix B). The ES results were then leveraged and assessed further in phase three.

Phase 3- Analysis 1

Within this phase, the open-ended responses from survey one were reviewed using thematic analysis (Braun & Clarke, 2006), which resulted in two key outputs. Thematic analysis

was chosen because it is highly applicable to different theoretical and epistemological approaches (Schelsinger, 2021). One output was the development of a comprehensive list of positive short-medium term outcomes connected to youth career development services, with the other output being a list of changes and trends within the field of career development. Using Braun and Clarke's (2006) six-step thematic analysis process, I familiarized myself with the data and generated initial codes, which were grouped into themes, reviewed again, and defined, resulting in a final list of short-to medium-term outcomes and trends. The process of analysis for both outcomes and trends was similar; however, a more abductive approach was used for trend data, specifically during the initial familiarization and coding steps. This was important for achieving an in-depth analysis, which resulted in the identification of a relevant, expansive, and coherent trend list. In addition, the framework of 4I's (Pawson, 2006) was employed to further add depth of insight. This resembled a similar interpretative approach used within the ES, however, instead of external resources being analyzed for respective 'signals' (trends), participants' responses were the resources under review.

An example of this interpretive process is the trend of an increased number of youths participating in career development activities being newcomers to Canada. Using abductive reasoning, this trend, while perhaps not explicitly mentioned, would be drawn from the trend of increased immigration to Nova Scotia, meaning that there would be more immigrant youth in the NS population. Further abductive reasoning could inspire deeper insights regarding this future trend and identified additional trends (future contextual layers), such as cultural differences between educators and youth and potential for language barriers. This CR perspective supported a deeper level of analysis and interpretation, as realist inquiries seek to move below the surface of the empirical and actual level of reality and seek to help surface social and causal forces at the

real level of reality (Mukumbang et al., 2018). Within this process, duplicates were removed, along with similar trends across multiple domains (Voros, 2003; Hines et al., 2018).

The language used by panelists describing the trends and outcomes was maintained as much as possible; however, any changes made attempted to remain as close to the original as possible (Egffjord & Sund, 2020). Following this thematic analysis of trends and changes, data from the ES were entered into the analysis process. The resulting list of trends from survey one was combined with the ES trend list. This combined list was analyzed using the same abductive reasoning and 4I framework as above. Practical steps such as removing duplicates and combining trends with similarities occurred. Again, when trends from the environmental scan and survey one were combined, intentional effort was made to maintain the language used by participants. If a trend resulting from the ES was not identified by the Delphi panel, it was noted and communicated in the Getting Serious- Survey 1 (ensuring transparency of the data source). Resulting from this research phase was an initial list of outcomes and trends.

Phase 4- Delphi Panel: Getting Serious- Survey 1

In this phase, the panelists received two comprehensive lists of all identified outcomes and emerging trends using an online survey format (Appendix H). A brief description of each item was provided, and any rewording or trends drawn from the ES were noted. The panelists were then asked to score each item on a 7-point Likert scale. Panelists rated the identified career development outcomes using a single indicator of importance. Importance was defined as the significance of the outcomes resulting in contributing to catalyzing long term attachment to the workforce in youth participants, using the scale 1 - 'not important at all' and 7 -'extremely important.' When considering the emerging trend list, the panelists were asked to review each trend and provide a rank based on their perspective of two equally weighted indicators: the potential impact and relevance of the emerging trends. Impact was defined as influencing or

causing a change in the way they offer and provide services, and used a rating scale of 1 (no impact at all) and 7 (extremely high impact). To rank the relevance of a trend, the scale of 7- 'Extremely Relevant' to 1- 'Not at all Irrelevant' was used, and was defined as the level of importance or connection to the career educator's organization and the youth they currently support. Panelists were encouraged to provide commentary on each of their rankings (Revez et al, 2020). A timeline similar to that of the Explore Survey was used to collect the survey data.

Phase 5- Analysis 2

Within this phase, panelist responses were analyzed using a descriptive statistical analysis method, using SPSS 29.1 software. The mean, median, and mode for each outcome and trend were calculated. Outcomes were analyzed based on a single criterion (importance), whereas trends were evaluated using the combined median scores of both impact and relevance. To assess the distribution or response patterns, skewness was calculated for each variable by measuring the asymmetry of the data distribution around the mean. Minimal skewness across the responses indicated a balanced dataset, supporting the appropriateness of central tendency as an indicator of the most frequent response (Sun & Trent, 2022). With minimal skewness, it was observed that the mean and median were equal for these data (the exact center point was the most frequent score and arithmetic mean).

The median score of each outcome was identified, which then produced a ranked list of the most important outcomes in youth career education (Dari et al., 2019). To develop the emerging trend list, the median scores of both the relevance and impact indicators (each indicator was weighted equally) for each emerging trend were calculated. These scores were then added, resulting in a ranked list of emerging trends. If items were tied, they were ranked equally on the list. The intention of this process was to identify the outcomes and trends considered the most important by Nova Scotia career development professionals. This was the first step toward the

goal of a resulting framework relevant to Nova Scotia career educators' perspectives and experiences (Sun & Trent, 2022). The outcome and emerging trends that obtained a median score lower than the mean of all medians (bottom 50%) were removed from the list (Ismail & Taliep, 2020). The revised list of outcomes and emerging trends was then developed and used to create Getting Serious- Survey 3.

Phase 6- Delphi Panel: Getting Serious - Survey 3

In this phase, the panelists received an online survey comprising a revised list of outcomes and emerging trends (Appendix I). The survey leveraged the same 7-point Likert scales as used in phase four, ranking the remaining items on the two lists. In addition to ranking trends and emerging issue lists, panelists were invited to list and share strategies or approaches that they thought would be relevant to help engage with the trends using an open-ended response section. The intention of this step was to ensure that practitioners' voices strongly influenced the emerging trend and outcome lists. It is impossible for researchers to engage fully with all the complexity of context when engaging in CR research; however, this final survey was vital to ensure that the future contextual layers identified later represented trends that they considered most important.

Phase 7- Analysis 3

The same descriptive statistical analysis process used in phase five was used in this phase. Once again, the outcome and emerging trends that obtained a median score lower than the mean of all medians were removed from the list (Ismail & Taliep, 2020). This final list represented the trends and outcomes viewed by the CDPs as the most important, impactful, and relevant trends and outcomes. This phase represented a shift of focus from primary data collection and futures research methods to a more researcher-centric and realist inquiry, with a focus on identifying the components of the CMO configuration. The outcomes were relatively

easy to identify; however, identification of future contextual layers was slightly more complex. To accomplish this, the 4I's framework (individual, interpersonal relationships, institutional, and infra-structural) (Pawson et al., 2004) was used as the taxonomy for contextual factors. To further support this process, the analysis was framed by the guiding interpretive question: What does this trend allude to, describe, and suggest about possible future contextual layers (as understood using the 4I's framework) relevant to youth career development in 2030? As previously identified, context within a realist perspective is complex and integral for the identification of possible causal mechanisms (Nielsen et al., 2022). Retroductive reasoning was used in this process with the intention of surfacing possible future contextual layers, as informed by the 4I framework (Derbyshire & Wright, 2016). Resulting from this was the development of future narratives (Erdmann & Schirrmeyer, 2016) which are shown in Appendix I. This approach of trend interpretation and analysis helped to look beneath the surface and helped to surface "deeper structures and insights" (Voros, 2003, p. 15). Based on this phase, the analysis answered the secondary research questions:

1. What are the perceived desired outcomes of career education held by career development professionals and Generation Z industry stakeholders?
2. What are important trends and drivers of change anticipated to directly impact the field of career education in the next 5 to 10 years?

The result of this phase of analysis was a list of the most important outcomes resulting from career development programs, as identified by CDPs, and a robust set of relevant future contextual layers that will influence career development programs over the next five to ten years.

Phase 8 – Adapted Rapid Realist Review

This adapted rapid realist review involved six steps. Step one defined the objectives through precise research questions and intended applications. Step two then scoped and refined

the development of structured search terms based on the developed list of outcomes, trends, and previous research. Step three involved conducting an initial literature search while applying quality assessment criteria. Step four focused on systematically extracting data. Step five synthesized the data and scrutinized the relevance and usefulness of the identified theories. Finally, in step six, the final set of theories were proposed. This process supported this study to engage in exploratory, critical, realist-informed research, leveraging FR methods. The review process was highly iterative and emergent; however, all steps were taken with intention and careful consideration. The following section provides insight into the process of each step.

Step 1: Clarity on objectives of review. This step incorporated activities such as the development of the project scope, development of specific research questions, and identification of how the findings and recommendations will be used. This step was also informed by the larger intention and purpose of the research project and with the specific output desired from the review itself. As stated, the intention of the review was to build upon previously collected data (future contextual layers and outcomes) to identify causal mechanisms and middle-range theories relevant to career development in 2030, which can support the design and development of futures-oriented interventions.

Step 2: Clarifying the scope of the review. The scope of the review was informed by theories that emerged through the Delphi panel, environmental scan, and future contextual layer and outcome lists. This was an emergent process; however, identification of search terms was required to help focus the review and align with realist review methods (Kastner, et al., 2011, Pawson, 2006). These two boundaries (emergent theories from the environmental scan and Delphi panel) and the future contextual layers and outcomes helped to create a flexible but focused scope for the review (described in greater detail in Chapter 6). The initial scope of this research was focused on ensuring the usefulness and completion of this study. Shaping (scope)

of resulting theories helped to focus this step on finding relevant middle-range theories (and causal mechanisms) relevant to the unique future contextual layers and outcomes

Step 3: Search Stage & Quality Assessment. The futures-orientation made engaging in the review process a complex activity. Following the model of Kastner et al., 2011, there were two stages in the search process. This stage was composed of reviewing literature relevant to the theories identified within the environmental scan and Delphi panel. As noted, the theories and areas of interest that emerged from the ES and Delphi panel helped shape the borders of the literature search, with the addition of the term youth career development, to ensure relevance. Purposeful searches within discipline-specific databases were performed, and additional articles were identified using the Related Articles feature of Novanet (Kastner et al., 2011). The search strategy and protocols used are listed in Table 2.

Table 2

Search Strategy & Protocol

Search Terms	Text Limiters	No. of Results
Self-Conception		
“career counseling or career development or vocational guidance or vocational counseling or occupational guidance” (AND)	Full text; peer reviewed; 2015-2024	49
“adolescents or teenagers or young adults or teen or youth or student or adolescence” (AND) “identity development or identity formation or identity construction or identity exploration” (AND)		
“theory or theories or model or framework or concept”		
Career Literacy and Reflection		

Search Terms	Text Limiters	No. of Results
<p>“youth or adolescents or young people or teen or young adults”</p> <p>(AND)</p> <p>career awareness or career path or career journey or career understanding or career reflection or career literacy or career awareness” (AND) “theory or theories or model or framework or concept” (AND) “career counseling or career development or vocational guidance or vocational counseling or occupational guidance” (AND) career education</p>	(Full text; peer reviewed)	100
Career decision-making self-efficacy		
<p>“career decision making self-efficacy or career decision self-efficacy" (AND)</p> <p>“career counseling or career development or vocational guidance or vocational counseling or occupational guidance” (AND) “youth or adolescents or young people or teen or young adults”</p>	(Full text; peer reviewed)	72
Attachment Theory		
<p>Attachment Theory (AND) “career counseling or career development or vocational guidance or vocational counseling or occupational guidance”</p> <p>(AND) “youth or adolescents or young people or teen or young adults”</p>	(Full text; peer reviewed)	88
Positive Youth Development		

Search Terms	Text Limiters	No. of Results
positive youth development (AND) “career counseling or career development or vocational guidance or vocational counseling or occupational guidance (AND) “youth or adolescents or young people or teen or young adults”	(Full text; peer reviewed)	92
Ability to engage in self-directed learning		
“self-directed learning or self-directed learning or lifelong learning or life-long learning” (AND) youth or adolescents or young people or teen or young adults (AND) “theory or theories or model or framework or concept” (AND) “careers or jobs or employment”	(Full text; peer reviewed; 2015-2024)	53
Relational Approach		
“relational approach or educational approaches or teaching methods or teaching styles or program design” (AND)	(Full text; peer reviewed; 2015-2024)	194
“theory or theories or model or framework or concept” (AND) “youth or adolescents or young people or teen or young adults” (AND) “career development or professional development or career pathway or career planning” (AND) “career exploration or career development or career planning”		
Digital Literacy		
“career development or work” (AND) “theory or theories or model or framework or concept” (AND) “youth or adolescents or young	(Full text; peer reviewed)	179

Search Terms	Text Limiters	No. of Results
people or teen or young adults” (AND) “digital literacy or digital skills” (AND) “Education or youth development”		
Racial Equity and Inclusive Strategies		
“racial equity in education “AND) “theory or theories or model or framework or concept” (AND) “youth or adolescents or young people or teen or young adults” (AND) “career counseling or career development or vocational guidance or vocational counseling or occupational guidance” (AND) “inclusive education or inclusive classroom or inclusive pedagogy”	(Full text; peer reviewed; 2015-2024)	115

Sources were initially assessed for relevance (is the research connected to youth career development?) and focus (is the research focused on a theory of interest?) (Kastner et al., 2011; Pawson et al., 2005). Approved sources were then read in full and assessed for their relevance to the future contextual layers, outcomes, and theoretical rigour (Does the research offer a strong and coherent explanation of relevant conceptual approaches, causal mechanisms, and/or middle-range theories?). Sources and the respective middle-range theories’ relevance to specific contextual layers and outcomes were noted and helped inform the process of step four.

Step 4: Extracting the Data. The purpose and intention of this adapted rapid realist review was to build upon the data gathered related to outcomes and future contextual layers to surface relevant and applicable middle-range theory (and subsequently causal mechanism) (Elonga Mboyo, 2019). Within this step, the identified theories and reviewed articles were scrutinized using the review process emphasized by Patton (1997) with an additional lens and framing of the previously identified outcomes and future contextual layers. As previously

mentioned, there are limited examples of scholars engaging with futures research methods within a critical realist-informed paradigm. Therefore, while the findings of the realist-informed review were useful and academically rigorous, it was challenging to capture every decision and thought that informed this review. Priority was given to ensure transparency of the process; however, as emphasized by realist researchers, the process is highly iterative and emergent (Pawson, 2006). Each article was considered for its theoretical contributions and for any proposed models, approaches, or frameworks. The identification and recording of educational models, approaches, and frameworks are not a common practice within realist reviews; however, they were captured to support the possibility of gaps in identified theories. Theories, models, approaches, and frameworks were also critiqued for their applicability and relevance to the outcomes and future contextual layers. The result of this step was a list of theories, models, approaches, and frameworks broadly relevant to youth career development (Appendix K).

Step 5: Synthesizing the Data & Relevance Assessment. After completing step four, the identified theories, models, and frameworks were critically reviewed using specific criteria to ensure their relevance to the program and intervention design (Table 12). Exclusion criteria were divided into three broad categories. The first was grand theories, which were excluded because they were too broad to support the refinement and innovation of current career development practices. The second category was models and frameworks that lacked originality, failed to present new insights, or lacked theoretical foundations; these were also removed. Finally, career development-specific theories were excluded, based on the assumption that CDPs are already familiar with them. At this point, a gap in the theoretical insight was identified, resulting in a return to the original theory, model, and approach list (Figure 4). This resulted in the addition of possible theories to the final list.

The final list of theories was then assessed using retroductive reasoning for its relevance and applicability to the identified future contextual layers, causal mechanisms, and outcomes. The results of the final assessment are the development of the proposed theoretical framework. Following the model of Kastner et al. (2011), an additional search and review of the literature relevant to the proposed theories was conducted. While not representing the level of rigour as demonstrated in step four, this short literature review employed a form of ‘berry picking’ search method as outlined by Bates (1989) and snowball technique (Parker et al., 2019) to ensure the depth of analysis and understanding of the identified theories. This approach was iterative, providing structure but flexibility in the search process (Kastner et al., 2011). Any additional sources identified within this search stage were appraised using the same quality assessment for full text as that used in search stage one.

Step 6: Drawing Conclusions. The result of this final step was a finalized Futures-Oriented Theoretical Framework for Youth Career Development, leading to the final phase of this research design, which is fully articulated in Chapter Seven and discussed in Chapter Eight.

Phase 9- Knowledge Dissemination

Worton et al. (2017) writes that the power imbalance between researcher and community or knowledge user can result in: “Researchers selecting knowledge-to-action strategies based on assumptions that do not necessarily hold true in community settings” (p. 123). During the data analysis phase, I worked for the CEI and intended to support the dissemination of findings through their communication channels. At the conclusion of this research, the CEI has ceased to operate (loss of funding), resulting in an additional barrier to communicating findings. Despite this, all individuals who participated in the panel were sent the findings and invited to a follow-up conversation with me to answer any questions or support possible follow-up actions. This was an attempt to address the historical power imbalance between researchers and the community

(Jull et al., 2017). At this point, several participants responded. Any resulting activities and resources that extend beyond the requirements of the doctoral program will be conducted in partnership with these individuals and their organizations.

Conclusion

This chapter articulates the methods and research activities, demonstrating the alignment of said iterative activities with the greater intention, principles, and philosophical framework of this research. Jackson et al., (2022) writes:

There are challenges related to qualitative data analysis using a realist approach given the complex nature of distinguishing CMOs and their connections. These linked CMOs form the basis of developing hypotheses that underpin the design and implementation of an intervention or program. Despite these challenges, using a realist approach in community-based research is valuable because it can address the community members' questions of what works for whom under what circumstances (p. 92).

The intention of this study was, through an engaged scholar and critical realist philosophical perspective, to adopt approaches from the field of futures studies and community-based participatory research to develop a Futures-Oriented Theoretical Framework for Informing Youth Employment Practices. This is a complex area of inquiry; therefore, the research design and methods are complex. This chapter provides an overview of the research design, followed by a thorough review of the three primary data collection methods (Delphi panel, environmental scan, and rapid realist review). Subsequently, the processes and activities of the nine research phases were reviewed and articulated. The methods and activities used in this research were identified and chosen based on their rigour, relevance, and alignment to this research. To support the assessment of the internal and external validity of this research, heightened attention was

paid to transparently articulating the reasoning and decision-making processes used throughout. The following chapter focuses on the research findings from each of the data-collection phases.

CHAPTER 6 - FINDINGS

The following chapter provides the results of all the research phases and articulates how these data were leveraged and built upon to support the research process. The nature of this research design resulted in an iterative data collection process. Each phase of data collection and analysis, whether from the panelists, environmental scan, or realist review, intentionally contributed to resolving the primary research question of: *What theories and education models, surfaced through literature and community voice, might best be combined to support positive outcomes from youth career development programs in 2030?* The iterative nature of this research design supported the ongoing reflexivity and connection to community values of engaged scholarship, and contributed to the ongoing refinement and rigour of the collection, analysis, and synthesis of data.

Environmental Scan

Over four months (July to October 2023), 92 resources were reviewed for the environmental scan (see Appendix A for the list). These resources were highly diverse, representing non-profit sites, program documents, gray literature, business reports, and peer-reviewed literature. The scan resulted in 156 trends and sub-trends drawn from across the four domains of future of work, the future of education, career development, and generation Z/Alpha (see Appendix B). This initial trend list represents a broad set of trends emerging from the resources. To ensure alignment between the focus of this research and the sheer amount of content, similar trends were combined and critiqued for their importance in relating the focus of this research inquiry. For example, similar trends that were combined included experiential learning and workplace learning and the removal of duplicate trends across multiple domains (e.g., lifelong learning and the importance of soft skills) (Voros, 2003; Hines et al., 2018). This process of combining and removing trends was challenging to capture. Despite this, an example

was the consideration of identified trends, such as the increased use of gamification and augmented reality. These are prominent trends within the future of education literature, which are interesting and important when considering how to deliver career development services; however, they were excluded as they did not contribute to identifying future contextual layers and relevant middle-range theories. However, through abductive analysis, these trends point to an important interpersonal/institutional contextual layer related to the importance of the educational strategy to meet the needs of youth, resulting in the identification of the trend of a youth-centric approach. The trend was defined as: Focusing on the needs, preferences, and interests of students, this trend advocates tailoring educational experiences to individual learners, fostering engagement and relevance in the learning process. The result of this process was a refined list of 46 trends (see Table 3) that were considered most relevant to this research, specifically to the secondary question: *What important trends and emerging considerations relevant to the educational design, creation, and implementation of meaningful youth career interventions/programs are anticipated in the next five to ten years?*

Table 3*Final Trend List from Environmental Scan*

Individual Trends	Interpersonal and Institutional Trends	Infra-Structure Systems Trends
Delayed Adulthood	Personalized Approach	Skills Economy
Mental Wellbeing & Health	(Intersectionality)	Rise of Gig Economy
Changing Expectations of Employers	Racial equity and Inclusion Strategies	Significant Technological Disruption
Decline in Interpersonal Skills	Relational Approach	Rise of Green Economy
Culturally Diverse Generation	Support Personal Development	Economic Crisis
Importance of lifelong learning	Youth Centric Approach	Increased Immigration Rates
Adaptability & Flexibility	Competency Based Education	AI
'Tech Proof' Skills	Bespoke Educational Approach	Automation
Digital Literacy	Importance of connection to educational institutions	On Job Training
Ability to engage in Self-Directed Learning	Importance of Soft Skills	Hybrid/Online Work
Importance of Technological/Digital Skills	Intercultural Skills	Rapidly changing labour market
Upskilling	Integrative Learning	Skill Gap
Technologically Embedded Generation	Collaborative Learning	Globalization
Social Justice Oriented	Caring Adults	Content overload
Financially Aware		
Struggle with work readiness		
Entrepreneurship		
Openness to New Career Paths		
Sense of Hope		
Motivation		

Note: Data gathered through the environmental scan was done in tandem with phase 2a

Participatory Delphi Panel Survey 1 (Explore Survey)

Participants

Twenty-six people from across Nova Scotia participated, with five living in Cape Breton (17%), seven in North Shore (30%), ten in Halifax Regional Municipality (HRM) (39%), one in Annapolis Valley (4%), and three in Southern Nova Scotia (9%). Of the 26 panelists, 11 were between the ages of 18 and 26 (42%), seven were between 27 and 40 (27%), six were between 41 and 54 (23%), and two were 55 years or older (8%). They were asked two open-ended questions:

1. Based on your experiences, what are some of the best possible short & medium-term outcomes which can result from youth (ages 11-17) engaging in career development services, programs, or interventions, which will support that long-term outcome of meaningful workforce attachment?
2. Have you noticed any changes, emerging trends, or patterns surfacing in the context of youth career development or/and in the needs and preferences of the youth (ages 11-17) you support? If yes, what changes, emerging trends, or patterns are you most curious, excited, intrigued by, or nervous about?

As stated in chapter five, the process of analysis differed slightly between outcomes and trends, as the process of identifying trends represented a more complex analysis approach. Focusing first on outcomes, Braun and Clarke's (2006) six-step thematic analysis process (familiarization, code, group, review, define, and outcome) was used to analyze the qualitative responses. As a result of this analysis, a list of 35 outcomes and their respective definitions was developed (Table 4).

Table 4*Explore Survey Outcomes, Quotes, and Working Definitions, N = 26*

Outcome and Example Quotes	Working Definition
Career exploration 1. "Early connection to a trusted adult will hopefully foster safe career exploration..." 2. "Self assessment and career exploration" 3. "Career exploration"	The process of learning about career paths, job functions, industries, fields, and roles.
Career planning 1. "Better direction and clarity of desired career goals"	The process of evaluating and choosing the job that best suits your personality, skills, and interests.
Connection with trusted adults 1. "Early connection to a trusted adult will hopefully foster safe career exploration..."; 2. "Access to mentors and role models and developing those relationships" 3. "Feel supported - getting used to asking for help"	Establishing meaningful relationships with supportive career development professionals.
Increased self-awareness 1. "Early connection to a trusted adult will hopefully foster safe career exploration..." 2. "Awareness of personal strengths" 3. "Self-assessment and career exploration"	Develop a deeper understanding of personal strengths, values, and identity.
Understanding of labour market information 1. "Understanding LMI" 2. "Understanding of a stepping stone approach to employment - that you need to start gaining skills and experience before you get to the most desirable job for you"	Gain insights into current job trends, demand, and skills required in the job market.

Outcome and Example Quotes	Working Definition
3. "Knowledge of career opportunities, what is available in different locations as well as their own, nature of the work..."	
Understand professional workplace expectations 1. "Getting familiar with professional setting" 2. "Understanding the language used in a professional setting"	Acquire knowledge of the norms, expectations, and conduct within a professional work environment.
Exposure to professional workplace 1. "Successful work placements either as a student at a co-op placement or with part-time student employment" 2. "Work-based learning like gaining practical skills and knowledge through internships and work placements" 3. "Opportunity to learn in a safe environment"	Gain firsthand experience in a professional setting.
Received academic support 1. "Return to or begin school (high school, GED)" 2. "Reduced dropout rates in high school" 3. "Possible increased academic performance in school"	Receive assistance with academic challenges to foster overall development and future career success.
Life skills 1. "Hard and soft skill development"	Development of practical life skills such as time management, how to open a bank account, etc.

Starting of business

Outcome and Example Quotes	Working Definition
<ol style="list-style-type: none"> 1. "Development of small businesses to long-term businesses for youth Entrepreneurs" 2. "Youth Entrepreneurs open their business successfully" 	<p>The initiating of entrepreneurial ventures (new businesses) may be a viable outcome for some.</p>
<hr/>	
<p>Increased confidence</p> <ol style="list-style-type: none"> 1. "Increase in Confidence among Youth Entrepreneurs" 2. "Increase in confidence" 3. "Build confidence" 4. "Increased confidence in themselves and their ability to find and maintain work" 	<p>Develop a strong sense of self-confidence and assurance in personal abilities.</p>
<hr/>	
<p>Identification of personal strengths and skills</p> <ol style="list-style-type: none"> 1. "Have a sense of their own skills and interests" 2. "Intangible success such as first bank account, first resume, confidence, etc." 3. "Awareness of personal strengths" 	<p>Youth recognize their individual strengths and skills and relate this to suitable career opportunities.</p>
<hr/>	
<p>Ability to write resume & cover letter</p> <ol style="list-style-type: none"> 1. "Knowledge on importance of having a resume and cover letter and how to prepare them" 2. "Resume and cover letter writing" 3. "Practicing mock Interviews, writing Resume and Cover Letter" 	<p>Development of effective communication tools for job applications, showcasing qualifications and experiences.</p>
<hr/>	
<p>Goal setting skills</p> <ol style="list-style-type: none"> 1. "Better direction and clarity of desired career goals" 	<p>Cultivate the ability to set realistic and achievable career goals for continuous personal and professional growth.</p>

Outcome and Example Quotes	Working Definition
2. "Ability to set effective goals" 3. "Improved goal setting"	
Sense of hope 1. "Feel a sense of meaning or importance"	Foster a positive outlook on future career prospects and personal development.
Motivation 1. "Have something to look forward to/work towards which helps develop good work ethic in future"	Cultivate the drive and determination to pursue and achieve career aspirations.
Development of workplace/professional skills 1. "Practicing mock Interviews, writing Resume and Cover Letter" 2. "Successful work placements either as a student at a co-op placement or with part-time student employment" 3. "Developing essential soft and hard skills that are transferrable to the workplace"	Enhancing specific skills relevant to the chosen profession or industry (Example: Email etiquette).
Financial literacy 1. "Financial literacy" 2. "Understanding intimidating topics such as Financial Literacy, Employability Skills, Public Speaking"	Gain knowledge and skills to manage personal finances and make informed financial decisions.
Positive peer relationships 1. "Feel supported - getting used to asking for help" "Building peer-to-peer relationships" 2. "Increase in engagement within a group setting"	Cultivate supportive and constructive relationships with peers to enhance collaboration and mutual growth.
Increased understanding of job seeking process 1. "Understand the in-and-out of effective Job Search" 2. "Knowledge of job search - where to look and how to look"	Developing insights into effective job search strategies and application processes (including interview skills).

Outcome and Example Quotes	Working Definition
<p>Understanding and identification of transferable skills</p> <ol style="list-style-type: none"> 1. "References and reputation are important for achieving employment" 2. "How to identify transferrable skills and use them for self-promotion" 	<p>Youth recognize that they have skills that can be applied across various roles and industries.</p>
<p>Exposure to relevant resources</p> <ol style="list-style-type: none"> 1. "Supportive and Resourceful environment for Youth Entrepreneurs" 	<p>Engagement with tools, networks, and information pertinent to career development.</p>
<p>Entrepreneurship skills</p> <ol style="list-style-type: none"> 1. "Development of small businesses to long-term businesses for Youth Entrepreneurs" 2. "Development of entrepreneurial mindset and skills" 3. "Youth Entrepreneurs open their business successfully" 	<p>If desired, youth will have developed the mindset and skills necessary for entrepreneurial endeavors and innovation.</p>
<p>Connection with employers and relevant industry leaders</p> <ol style="list-style-type: none"> 1. "Aligning with Employers that understand the values and needs of Youth" 2. "Access to mentors and role models and developing those relationships" 3. "Connections to people in fields they're interested in" 	<p>Establish valuable connections with professionals in the desired field.</p>
<p>Increased awareness of cultural identity</p> <ol style="list-style-type: none"> 1. "Closer ties to Indigenous culture and community" 	<p>Youth will grow in understanding and appreciation with their cultural background.</p>
<p>Openness to new career paths</p> <ol style="list-style-type: none"> 1. "Willingness to explore different career paths and matching their skills, interests, and values to their desired career" 	<p>Youth will be receptive to exploring diverse career opportunities and adapting to changing circumstances.</p>

Outcome and Example Quotes	Working Definition
<p>Mitigate stressful career questions</p> <ol style="list-style-type: none"> 1. "Gaining the ability to make more informed decisions" 	<p>Youth's stress and concerns regarding their career decision-making will be lessened.</p>
<p>Understanding of training and education options</p> <ol style="list-style-type: none"> 1. "Highlighting the skills learned with their experience in Training Sessions and past work experience" 	<p>An understanding of various educational pathways and training options available which will support youth in their career aspirations.</p>
<p>Increased understanding of the type of workplace they want to be connected to</p> <ol style="list-style-type: none"> 1. "Career exploration" 2. "Professional skills and how to work in the workforce" 	<p>Youth will grow in awareness of their preferences for workplace culture and what they need to be successful.</p>
<p>Understanding of what employers are looking for</p> <ol style="list-style-type: none"> 1. "Successful work placements either as a student at a co-op placement or with part time student employment" 	<p>Recognize and appropriately adapt to expectations and requirements of potential employers.</p>
<p>Critical thinking</p> <ol style="list-style-type: none"> 1. "Helps them make more informed small decisions that have long term effects on their future" 	<p>Develop analytical and problem-solving skills.</p>
<p>Resilience</p> <ol style="list-style-type: none"> 1. "Increased confidence in themselves and their ability to find and maintain work" 	<p>Ability to bounce back from setbacks and persist in the face of challenges.</p>
<p>Understanding of lifelong learning</p> <ol style="list-style-type: none"> 1. "Helps them make more informed small decisions that have long term effects on their future" 	<p>Embrace a continuous learning mindset for ongoing personal and professional development.</p>
<p>Insights to personal passions</p> <ol style="list-style-type: none"> 1. "Awareness of passion and what opportunities there are associated" 	<p>Development of insights regarding personal passions and interests related to employment.</p>

Outcome and Example Quotes	Working Definition
Exposure to diverse career options	
1. "An expanded view of what career possibilities exist within their field of interest"	Youth will have an increased awareness of potential careers
2. "Awareness of passion and what opportunities there are associated"	outside of their personal experience or worldview.
3. "Increased awareness of career options"	

Note. These outcomes were then used to help develop survey 2 (Getting Serious-Part 1).

In reviewing the responses to the second question, a six-step thematic analysis was followed, with the addition of retroductive reasoning during the familiarization and coding phases. The function of this CR approach to analysis helped surface underlying worldviews or considerations offered in participant responses (Parra et al., 2021). The result of this process was the identification of 48 trends (see Appendix C). To demonstrate this retroductive process transparently, several examples are offered. Consider the quote: “youth are seeking employment at a younger age out of need versus want,” which led to the trend titled Youth Working Younger. However, probing deeper, retroductive reasoning led to the surfacing of the trend of Anxiety Around Finances, as the comment of ‘out of need vs want’ highlights a sense of anxiety and concern, and when considered with other statements made by the respondent “the divide between the well to do and struggling is widening” affirmed a financial nature of the ‘need’ for young people to work. Another example of this process is demonstrated within this response: “A lot of kids aren't looking to go into large amounts of debt going to post-secondary, so some kids are looking for work after high school to save money for post-secondary or looking for a quicker/less costly way to achieve a career.” This comment resulted in the individual trends of Cost-Effective Career Development and affirmed the trend of Anxiety about Finances.

The final step in analysis of phase three, was the amalgamation of the ES and the Explore Survey trend list. As noted in Chapter Five, this combined list was analyzed using the same abductive reasoning and 4I framework as used in the initial thematic analysis process. When trends from the environmental scan and the Explore Survey were combined, intentional effort was made to maintain the language used by participants. If a trend resulting from the ES was not identified by the Delphi panel, they noted and communicated in Delphi Getting Serious–Survey 1 (ensuring transparency of data source). The rationale for which trends were combined or removed is provided in Appendix G. This process resulted in a final list of 51 trends, representing 27 trends identified by participant responses (20 of which were also identified in the environmental scan) and 24 solely surfaced from the environmental scan. Definitions were then developed using the participants' wording and relevant literature as required. The final list is presented in Table 5, for a combined list with definitions please see Appendix D.

Table 5

Combined Trend List- Explore Survey & Environmental Scan

Individual Layer	Interpersonal and Institutional Layer	Infrastructural Layer
Interest in trades	Lack of connection between career development and educational institutions	Increasing economic divide
Youth working younger	Honest and transparent conversations	Hybrid/Online/Remote work
Anxiety about career options	Transportation as a barrier	Rapidly changing labour market

Individual Layer	Interpersonal and Institutional Layer	Infrastructural Layer
Anxiety about finances	Information overload	AI impact on labour market
Cost effective career development	Safe space	Skilled labourers shortage
Struggle with social skills	Personalized approach (intersectionality) (ES)	Misinformation
Changing expectations for employers	Racial equity and inclusion strategies (ES)	Skill economy (ES)
Struggle to apply technology to career development	Relational approach (ES)	Rise of gig economy (ES)
Mental health struggles	Importance of lifelong learning (ES)	Significant technological disruption (ES)
Struggle with critical thinking	Youth centric approach (ES)	Rise of green economy (ES)
Digital living	Competency based education (ES)	Importance of technological/digital skills (ES)
Struggles with workplace skills	Bespoke education approach (ES)	Increased immigration rates (ES)
Lack of understanding of the concept of career planning and trajectory	globalization (ES)	Adaptability & flexibility (ES)

Individual Layer	Interpersonal and Institutional Layer	Infrastructural Layer
Technologically embedded	Importance of soft skills (ES)	Importance of 'tech proof' skills (ES)
Interest in entrepreneurship	Intercultural skills (ES)	Digital literacy (ES)
Willing to disclose required accommodations	Integrative learning (ES)	Ability to engage in self-directed learning (ES)
Delayed adulthood (ES)	Collaborative learning (ES)	
Highly diverse generation (ES)		

Getting Serious (Part 1): Participatory Delphi Panel Survey 2

The second Delphi panel survey, Getting Serious (Part 1), comprised 51 trends and 34 outcomes that were identified through the environmental scan and results of the Explore Survey (as described above). It was emailed to the participants on January 5, 2024, with data collection concluded on January 21, 2024. Nineteen of the initial 26 participants completed Survey 2. Using SPSS 29.1 software, the mean, median, and mode of each outcome and trend were calculated. The outcomes included one assessment criterion (level of importance). Trends were assessed using two equally weighted criteria (impact and relevance) and both criteria were used to calculate their average. The skewness of each item's response distribution was calculated. Skewness refers to the degree of asymmetry in the distribution of data around its mean (Joanes & Gill, 1998). Most social science research considers a skewness value between -1 and +1 (and consistently less than +/- 1.96) as indicative of an approximately normal distribution (George & Mallery, 2019), the minimal amount of skew in the dataset confirmed that central tendency, specifically mean, was an appropriate descriptive statistic (see Tables 6 and 7).

Table 6*Survey Two Outcomes Descriptive Statistics, N = 19*

Item	Mean	Median	Mode	Skewness
These outcomes were kept and developed the outcome list for survey 3				
Career Exploration	6.05	6	6	-0.09
Career Planning	5.73	6	6	-0.99
Connection with Trusted Adults	5.66	6	5	0.18
Increased Self-Awareness	5.68	6	6	-0.27
Increased Confidence	5.52	5	5	0.98
Identification of Personal Strengths and Skills	5.63	6	6	-1.99
Goal Setting Skills	5.36	5	5	-0.23
Understanding and identification of Transferable Skills	5.57	6	5	0.11
Exposure to relevant resources	5.31	5	5	-0.08
Mitigate Stressful Career Questions	5.31	5	6	0.01
Understanding of training and Education options	5.63	6	6	-0.18
Increased understanding of the type of workplace they want to be connected to	5.36	5	5	-0.49
Understanding of what employers are looking for	5.57	5	5	-0.44
Critical thinking	5.36	6	7	-0.58
Resilience	5.52	6	5	-0.62
Insights to Personal passions	5.36	5	5	-0.85

Item	Mean	Median	Mode	Skewness
Exposure to diverse career options	5.47	5	5	-0.32
Openness to New Career Paths	5.47	5	5	0.33
Sense of Hope	5.52	5	5	-0.49
Motivation	5.52	6	5	-0.76
Understanding of Labour Market Information*	4.89	5	6	-0.41
Entrepreneurship Skills*	4.63	5	5	-1.27
Connection with employers and relevant industry leaders*	5	5	4	0.27
Increased awareness of cultural identity*	5.10	5	5	0.05
Development of Workplace/Professional Skills*	5.10	5	5	-0.41
Financial Literacy*	5.15	5	5	0.18
Increased understanding of Job Seeking Process*	5.15	5	5	-0.33
Positive Peer Relationships*	5.26	5	5	0.17
Ability to write Resume & Cover Letter*	4.73	5	5	-0.19
Development of Life Skills*	4.47	5	5	0.59
Starting of Business*	4.47	4	4	0.91
Understanding of Labour Market Information*	4.89	5	6	-0.41
Understanding of Professional Workplace Expectations*	5.10	5	4	0.22
Exposure to Professional Workplace*	5.15	5	4	0.36

Item	Mean	Median	Mode	Skewness
Received Academic Support*	5	5	5	-0.48

Note. Items indicated with * were removed as their score was below mean score of 5.27

Table 7

Survey Two Trend Descriptive Statistics, N = 19

Item	Q2 M	Q2 Mdn	Q2 Mo	Q2 Skew	Q3 M	Q3 Mdn	Q3 Mo	Q3 Skew	Mean of Mean
These Trends were kept and developed the Trend list for survey 3									
Interest in Trades	5.75	6.5	7	-1.78	5.75	6.5	7	-1.87	5.75
Anxiety about Career Options	5.75	6	6	-0.52	5.83	6	6	-0.41	5.79
Anxiety about Finances	6.42	7	7	-1.04	5.75	6	7	-0.30	6.08
Cost Effective Career Development	5.67	6	6	-0.25	5.75	6	6	-0.97	5.71
Mental Health Struggles	6.42	6	6	0.38	6.17	6.5	7	-0.98	6.29
Interest in Entrepreneurship	5.58	6	6	-0.27	5.67	5.5	5	-0.63	5.62
Lack of connection between career development and educational institutions	5.92	6	6	-1.53	6.33	6.5	7	-0.71	6.12
Racial equity and inclusion strategies (ES)	5.83	6	6	-1.16	6	6	6	-0.75	5.91
Relational Approach (ES)	5.67	6	6	-0.25	5.83	6	7	-1.00	5.75
Importance of Lifelong Learning (ES)	6.17	6	6	-0.26	6.08	6	7	-0.18	6.12
Youth Centric Approach (ES)	5.83	6	5	0.35	5.75	6	5	-0.13	5.79
Competency Based Education (ES)	5.83	6	6	0.26	5.58	5.5	5	0.15	5.70

Item	Q2 M	Q2 Mdn	Q2 Mo	Q2 Skew	Q3 M	Q3 Mdn	Q3 Mo	Q3 Skew	Mean of Mean
Importance of Soft Skills (ES)	6.25	6.5	7	-1.31	6.42	6.5	7	-0.73	6.33
Intercultural Skills (ES)	5.5	5	5	0.25	5.92	6	7	-0.64	5.71
Collaborative Learning (ES)	5.75	6	6	-0.52	5.5	6	6	-0.82	5.62
Increasing Economic Divide	6.58	7	7	-1.45	6.17	6.5	7	-0.98	6.37
Hybrid/Online/Remote Work	5.83	6	6	-0.41	5.83	6	6	-0.77	5.83
Rapidly Changing Labour Market	5.5	5	5	0.65	5.67	6	7	-0.73	5.58
AI Impact on Labour Market	5.75	6	6	-0.52	5.75	6	6	-1.74	5.75
Skilled Labourers Shortage	6	6	6	-1.05	5.83	7	7	-1.40	5.91
Skill Economy (ES)	5.5	5.5	5	0	5.75	5.5	5	0.03	5.62
Rise of Gig Economy (ES)	5.67	6	6	-0.48	5.58	5.5	5	0.15	5.62
Increased Immigration Rates (ES)	5.83	6	6	-1.50	5.75	6	5	-0.13	5.79
Digital Literacy (ES)	5.67	6	6	-0.81	6	6	6	-1.05	5.83
Ability to engage in Self- Directed Learning (ES)	5.92	6	6	-0.83	6.25	7	7	-1.14	6.08
These trends were removed as their score was below median score of 5.55									
Youth Working Younger	5.17	5	4	0.56	5.08	5.5	4	-0.43	5.12
Struggle with Social Skills	5.67	6	6	-0.98	4.92	5	5	-0.98	5.29
Changing Expectations for Employers	5.42	5.5	4	0.05	5.25	6	6	-1.62	5.33

Item	Q2 M	Q2 Mdn	Q2 Mo	Q2 Skew	Q3 M	Q3 Mdn	Q3 Mo	Q3 Skew	Mean of Mean
Struggle to apply technology to career development	4.33	4	4	0.48	5.08	5	5	-1.22	4.70
Struggle with critical thinking	5.5	6	7	-0.66	4.83	5.5	6	-1.12	5.16
Digital Living	5.17	5	5	-0.36	5.33	5.5	5	-1.62	5.25
Struggles with Workplace Skills	5.08	5.5	6	-1.26	5.08	5	4	-1.03	5.08
Technologically Embedded	5.08	5	5	-1.40	5.17	5.5	4	-0.08	5.12
Lack of understanding of the concept of career planning and trajectory	5.42	6	6	-0.91	5.5	6	6	-0.85	5.46
Willing to Disclose Required Accommodations	5.75	6	6	-1.25	5.42	6	6	-0.63	5.53
Delayed Adulthood (ES)	5.08	5.5	6	-0.47	4.92	5.5	6	-1.23	5
Highly Diverse Generation (ES)	5.42	6	6	-2.20	5.5	5	5	0.44	5.46
Honest and Transparent Conversations	5.5	5.5	5	0	5.5	6	5	-2.06	5.5
Transportation as a barrier	5.5	5.5	4	0	5.58	5.5	5	0	5.54
Information Overload	5.08	4	4	0.57	4.58	5	6	-0.73	4.83
Safe Space	5.33	5.5	6	-0.12	5.5	6	6	-1.61	5.41
Personalized Approach (intersectionality) (ES)	5.42	5.5	5	-1.10	5.58	6	6	-1.59	5.5
Bespoke Education Approach (ES)	5.5	5.5	5	0	5.58	5.5	5	0.15	5.54
Globalization (ES)	4.83	5	4	1.17	5.5	5	5	-0.28	5.16
Integrative Learning (ES)	5.42	5	5	0.38	5.42	5	5	0.27	5.42

Item	Q2 M	Q2 Mdn	Q2 Mo	Q2 Skew	Q3 M	Q3 Mdn	Q3 Mo	Q3 Skew	Mean of Mean
Misinformation	5.17	5.5	6	-0.75	4.25	5	5	-0.77	4.71
Ongoing Technological Disruption (ES)	5.17	5.5	6	-0.37	4.42	4.5	4	-0.62	4.79
Rise of Green Economy (ES)	5.58	6	6	-0.74	5.25	5	5	-0.61	5.41
Importance of technological/digital skills (ES)	5.67	5.5	5	0.12	5.42	5.5	5	-1.10	5.54
Adaptability & Flexibility (ES)	5.67	6	6	-0.66	5.25	5	5	-0.20	5.46
Importance of 'Tech Proof' Skills (ES)	5.08	5	6	-0.18	5	5	5	-0.60	5.04

Note. Q2 refers to the assessment criteria of potential impact and Q3 is the criteria of relevance.

The statistical references used are as follows: *M* = mean, *Mdn* = median, *Mo* = mode, *Skew* = skewness.

To identify which outcomes and trends would compose Getting Serious – Part 2, the median for each outcome and trend was added together and then divided by the number of outcomes (34) and trends (51) which led to identifying the overall outcome (5.2735) and trend (5.5531) mean. This number was then used to remove outcomes and trends whose median was lower than the grand mean. This approach is common within Delphi panel methods (Revez et al., 2020) and supports the movement toward greater consensus, relating to which outcomes and trends were perceived by participants as either the most important or impactful and relevant. After removing 25 trends and 14 outcomes, Getting Serious (Part 2) was developed as the final stage of the modified Delphi (Appendix I).

Getting Serious (Part 2): Participatory Delphi Panel Survey 3

The third Delphi panel survey, Getting Serious – Part 2 dissemination was delayed because of a faculty strike at Mount Saint Vincent University, which influenced the time needed to receive ethics approval to circulate this final survey. This resulted in Getting Serious – Part 2 being sent to participants on March 26, 2024, with the data collection process concluded on April 16, 2024. Twelve of the participants completed the survey. This represented a substantial drop in response rates from the Explore Survey (n = 24) and the Getting Serious Survey 1 (n = 19). However, despite this decline, the data gathered were viewed as valid for several reasons. One reason for this is that attrition in research with multiple surveys is common, as individuals often experience fatigue, shift priorities, or simply lose interest (Menard, 2002). Additionally, at this point in the research, the emphasis shifted from broad data gathering to refined input, which can be drawn from highly committed individuals (represented by the 12 remaining panelists). The 12 respondents provided nuanced, high-quality contributions that helped this research remain relevant and applicable to CDPs in Nova Scotia. Replicating the analysis approach used for Getting Serious – Part 1, the central tendency of all outcomes (5.18) and trends (5.2622) was calculated to remove those that fell within the lower 50% (see Tables 8 and 9 below).

Table 8.*Survey Three Outcome Descriptive Statistics, N = 12*

Item	Mean	Median	Mode	Skewness
These outcomes were kept and developed the outcome list for survey 3				
Career Exploration	5.45	5	5	0.14
Connection with Trusted Adults	5.36	6	6	-0.88
Increased Self-Awareness	5.45	6	6	-0.69
Increased Confidence	5.64	6	6	-0.44
Identification of Personal Strengths and Skills	5.27	6	6	-0.58
Understanding and identification of Transferable Skills	5.45	6	6	-0.29
Exposure to relevant resources	5.64	6	5	-0.02
Understanding of training and Education options	5.27	5	5	-0.10
Insights to Personal passions	5.18	5	6	-1.20
Exposure to diverse career options	5.36	5	5	-0.53
These outcomes were removed as their score was below median score of 5.18				
Career Planning	5.09	5	5	-0.74
Goal Setting Skills	5.09	5	5	-0.82
Sense of Hope	5.09	5	5	-0.21
Motivation	4.73	5	5	-0.43
Openness to New Career Paths	5.09	5	4	0.13
Mitigate Stressful Career Questions	4.82	5	4	0.08
Increased understanding of the type of workplace they want to be connected to	4.82	5	5	-0.35
Understanding of what employers are looking for	5.09	6	6	-0.67
Critical thinking	5	5	5	-0.62
Resilience	4.82	6	6	-0.71

Table 9*Survey Three Trend Descriptive Statistics, N = 12*

Item	Q2 M	Q2 Mdn	Q2 Mo	Q2 Skew	Q3 M	Q3 Mdn	Q3 Mo	Q3 Skew	Mean of Mean
These Trends were kept and developed the Trend list for survey 3									
Anxiety about Career Options	5.73	6	6	-1.09	5.27	6	6	-1.35	5.5
Anxiety about Finances	6.09	7	7	-1.53	5.09	5	5	-1.16	5.59
Mental Health Struggles	6.55	7	7	-1.32	5.73	6	6	-1.97	6.13
Racial equity and inclusion strategies (ES)	5.27	5	5	-0.26	5.27	5	5	-1.09	5.27
Relational Approach (ES)	5.45	6	7	-0.32	5.09	5	5	-1.16	5.27
Youth Centric Approach (ES)	5.73	6	7	-1.02	5.45	5	5	0.14	5.59
Importance of Soft Skills (ES)	6.09	6	7	-1.21	5.36	6	6	-1.68	5.72
Intercultural Skills (ES)	5.45	6	6	-0.45	5.18	6	6	-1.17	5.31
Increasing Economic Divide	5.45	5	4	0.12	5.09	5	5	-0.74	5.27
Hybrid/Online/Remote Work	6.09	6	6	-0.19	5.45	5	5	0.17	5.77
Rapidly Changing Labour Market	5.82	6	6	-0.34	4.91	5	5	-1.78	5.36
AI Impact on Labour Market	5.91	6	7	-0.43	5.18	6	6	-1.18	5.54
Digital Literacy (ES)	5.82	6	7	-0.33	4.91	5	5	-0.78	5.36

Item	Q2 M	Q2 Mdn	Q2 Mo	Q2 Skew	Q3 M	Q3 Mdn	Q3 Mo	Q3 Skew	Mean of Mean
Ability to engage in Self-Directed Learning (ES)	6.09	7	7	-0.71	5.27	6	6	-1.01	5.68
These trends were removed as their score was below mean score of 5.26									
Interest in Trades	4.82	5	5	-0.69	5.09	5	5	-2.21	4.95
Cost Effective Career Development	5	5	4	0.73	4.36	4	6	-0.11	4.68
Interest in Entrepreneurship	4.91	5	5	0.12	4.36	4	4	-0.44	4.63
Highly Diverse Generation (ES)	4.64	4	4	0.88	5	5	5	-0.91	4.81
Lack of connection between career development and educational institutions	5.18	6	6	-0.37	4.18	4	4	-0.42	4.68
Importance of Lifelong Learning (ES)	5.64	6	6	-0.97	4.82	5	5	-1.16	5.22
Competency Based Education (ES)	5.45	5	5	0.80	4.73	5	5	-1.09	5.09
Collaborative Learning (ES)	5.36	6	6	-0.49	4.64	5	5	-0.88	5
Skilled Labourers Shortage	5.36	5	4	0.15	4.91	5	5	-0.79	5.13

Item	Q2 M	Q2 Mdn	Q2 Mo	Q2 Skew	Q3 M	Q3 Mdn	Q3 Mo	Q3 Skew	Mean of Mean
Skill Economy (ES)	5.45	5	5	0.14	5	5	5	-0.91	5.22
Rise of Gig Economy (ES)	5.27	5	5	0.76	4.64	5	6	-0.21	4.95
Increased Immigration Rates (ES)	5.55	5	5	0.51	4.45	4	4	0.23	5

This resulted in a list of 14 trends and 10 outcomes, which, after the two Getting Serious surveys, were considered the most important outcomes and impactful and relevant trends to youth career development professionals (Tables 10 and 11).

Table 10*Final Outcome List*

Outcome	Definition
Increased Confidence	Develop a strong sense of self-confidence and assurance in personal abilities.
Exposure to relevant resources	Engagement with tools, networks, and information pertinent to career development.
Increased Self-Awareness	Develop a deeper understanding of personal strengths, values, and identity.
Career Exploration	The process of learning about career paths, job functions, industries, fields, and roles.
Understanding and identification of Transferable Skills	Youth recognize that they have skills that can be applied across various roles and industries.
Exposure to diverse career options	Youth will have an increased awareness of potential careers outside of their personal experience or worldview.
Connection with Trusted Adults	Establishing meaningful relationships with supportive career development professionals.
Identification of Personal Strengths and Skills	Youth recognize their individual strengths and skills and relate this to suitable career opportunities.
Insights to Personal Passions	Development of insights regarding personal passions and interests related to employment.
Understanding of training and Education options	An understanding of various educational pathways and training options available which will support youth in their career aspirations.

Table 11*Final Trend List*

Trend	Definition
Anxiety about Career Options	Youth are concerned about the way things are changing and about finding meaningful employment.
Anxiety about Finances	Youth are concerned about personal finances and therefore what their salary will be.
Mental Health Struggles	Youth are struggling with their mental wellbeing and present with increased anxiety, loneliness, and other mental health elements.
Racial equity and inclusion strategies (ES)	Recognition of the historical and institutional barriers for equity seeking communities and adapting approaches and content to support equitable learning opportunities.
Relational Approach (ES)	Emphasizing the significance of relationships between educators and students, this trend underscores the value of mentorship and personalized guidance to enhance the learning experience.
Youth Centric Approach (ES)	Focusing on the needs, preferences, and interests of students, this trend advocates tailoring educational experiences to individual learners, fostering engagement and relevance in the learning process.
Importance of Soft Skills (ES)	Denotes the growing recognition of the significance of interpersonal, communication, and emotional intelligence skills alongside technical expertise. This trend underscores the understanding that qualities like teamwork, adaptability, and effective communication are integral for success in the modern workplace, emphasizing a holistic approach to professional development
Intercultural Skills (ES)	Recognizing the global movement of talent, this trend emphasizes the importance of diversity and multicultural skills.
Increasing Economic Divide	Youth (and their families) are increasingly struggling to meet basic needs and face financial challenges.

Trend	Definition
Hybrid/Online/Remote Work	Evolution in workplace practices toward hybrid models, incorporating remote and online work arrangements.
Rapidly Changing Labour Market	The increasing rate and scale of change/transformations in the job market.
AI Impact on Labour Market	Artificial intelligence is a technology causing significant disruption in all aspects of the workforce. AI will influence workplace skills and be the catalyst for automation (job loss) and the creation of new career opportunities.
Digital Literacy (ES)	This trend refers to the skill of understanding and navigating digital tools and platforms.
Ability to engage in Self-Directed Learning (ES)	This trend underscores the importance of youth being able to take initiative and responsibility for their own learning journey.

The ultimate intention and purpose of all the research activities until this point (three surveys and an environmental scan) was to identify the outcomes and possible future context. At this point (phase seven) the research design became highly researcher-focused and shaped. Leveraging retroductive reasoning, the resulting trends and outcomes were further scrutinized. The intention of identifying the trends was to help support the development of future contextual layers relevant to youth career development in 2030. An unforeseen emergence from the first six phases of this research was that five of the fourteen trends represented learning theories/approaches (ability to engage in self-directed learning, youth-centric approach, relational approach, digital literacy, racial equity, and inclusive strategies) and alluded to possible middle-range theory and causal mechanisms than future contextual layers. While this was helpful and used to help shape the realist review, future contextual layer narratives were developed to support the translation of the identified trends into contextual layers. The developed narratives are similar to the process of scenario development, which is a prominent element in futures research (Erdmann & Schirrmeister, 2016). The development of these narratives was

intended to help illuminate a possible future context composed of various layers articulated within the 4I framework (Derbyshire & Wright, 2016). The process of translating said trends to possible future contextual narratives was highly creative and, while grounded in evidence and academic research, was a highly intuitive process. Retroductive reasoning is essential in this process, which is shown in Appendix I.

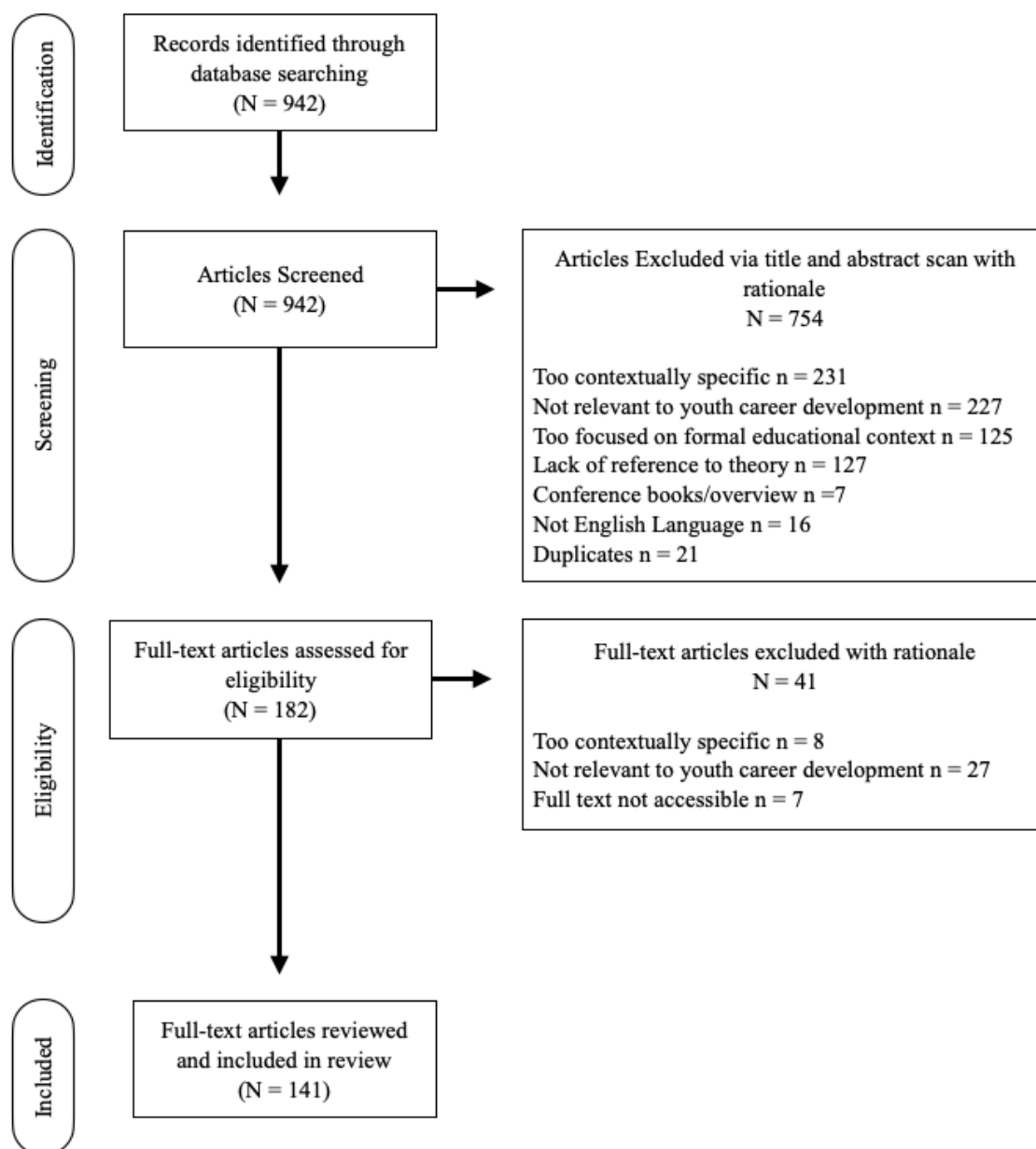
As noted in Chapter Four, the dynamic and complex nature of the research phenomena resulted in a modified approach to the CMO configuration (Nielsen, Lemire, & Tangsig, 2022). To develop a futures-oriented theoretical framework, leveraging the CMO framework, the modified Delphi identified possible future contextual layers (C) and short-to medium-term outcomes (O). A futures-oriented rapid realist review was the next step and conducted with focus on identifying middle-range theories (and their respective causal mechanisms) (M).

Futures-Oriented Adapted Rapid Realist Review

The final data source was collected through a futures-oriented adapted rapid realist review. The review process consisted of six steps. Step one was a formality at this point in the research, as the primary function of this step is typically to clarify the objectives of review. This was well established since the concept of this research design. Step two was also clearly articulated in Chapter Five, as the scope of the review was informed by the nine theories and areas of interest that emerged from the environmental scan (Attachment Theory, positive youth development, self-conception, career decision-making self-efficacy) and the Delphi panel (racial equity and inclusive strategies, career literacy and reflection, ability to engage in self-directed learning, relational approach, digital literacy). These helped focus the literature search. The remaining four steps of the review process helped build upon the previously collected data (future contextual layers and outcomes), ultimately resulting in the identification of middle-range theories and causal mechanisms relevant to career development in 2030, which can support the

design and development of futures-oriented interventions. The findings of the remaining four steps are as follows.

The third step of the review process was the Search & Quality Assessment stage. Figure 3 is a literature review flowchart, tracking the process followed within the review, and 141 articles were reviewed in their entirety. Based on a review of 141 articles, 111 theories, methods, and conceptual frameworks were identified. These theories were identified using abductive analysis and in special consideration of the future contextual layers and outcomes previously identified (see Appendix K for the full list of reviewed articles).

Figure 3*Rapid Realist Review Flowchart*

Step five of the review yielded several key findings. One outcome of this step was that the identified theories, models, and frameworks were reviewed and critiqued for their applicability and relevance to outcomes and future contextual layers. Using three broad categories of exclusion to ensure relevance of the prospective theories, the list of theories was refined

significantly. The first category of exclusion was grand theories, which were excluded because they were too broad to support the refinement and innovation of current career development practices. Grand theories such as ecological systems theory (Bronfenbrenner, 1979) and socio-historical theory (Vygotsky, 1978) were removed as they were too broad to help refine program and intervention design. The following theories were excluded based on the above rationale:

- Capacity Approach
- Developmental Systems Theories
- Ecological Systems Theory
- Generational Theory
- Human Capital
- Lifespan Developmental Models
- Lifespan Psychology
- Psychological Constructivism
- Psychosocial Development Theory
- Relational Development Systems Paradigm
- Self-Determination Theory
- Self-Efficacy Theory
- Social Capital
- Social Learning Theory
- Social Theory of Literacy
- Sociocultural Theory
- Structural Theories (e.g., Theory of Social Structures)
- Technological Determinism
- Theories of Embodied Cognition

The second category removed frameworks and models, such as the life design paradigm (Savickas et al., 2009) and transformative social and emotional learning (Jager et al., 2019), as they were conceptual frameworks, but not theories. The following conceptual models, developmental constructs, and pedagogical frameworks were excluded based on the above reasoning:

- Academic Self-Concept
- Adaptive Readiness
- Agency-Based Model
- Concept of Affordances
- Concept of Critical Life Events
- Contextual Action Theory
- Critical Consciousness Theory
- Critical Digital Literacy
- Critical Race Pedagogy (CRP)
- Critical Thinking
- Culturally Response Pedagogy
- Design Thinking
- Digital Financial Literacy
- Digital Literacy
- Educational Responsibility
- Educational Scaffolding
- Emotional Regulation
- Intentional Self-Regulatory Skills (ISR)
- Iterative Learning Processes

- Leadership Development Process Model
- Life-Span Model of Motivation
- Media Competence
- Mental Health Literacy
- Multifinality
- Multidimensional Acculturation Model
- Multimodal Learning
- Peer-Based Learning
- Person-Centred Approach
- Place-Based Education
- Positive Youth Development (PYD)
- Provisional Self-Identity Model
- Reductionist Digital Education
- Semiotic Participatory Social Practice / Multimodal Crafting
- Social and Emotional Learning (SEL)
- Strategies and Skills Learning and Development (SSLD) Approach
- Student-Centered Learning
- System Models
- System of Subjective Identity Forms
- Transformative SEL
- Transmedial Ecologies
- Work-Based Learning

Finally, while several career development theories such as Social Cognitive Career Theory (SCCT; Hackett and Betz, 1981; Lent et al., 1994; Lent & Brown, 2008) or Career Construction

Theory (Savickas, 2013) are highly applicable and relevant to the current and future context, they were also excluded in the framework, as CDPs are already applying and leveraging these theories and including them would be redundant to established practices. The following theories were excluded based on this criterion:

- Big Five Trait Theory
- Career Adaptability
- Career Choice and Attainment Model
- Career Construction Theory
- Career Decision Making
- Career Development Theory
- Career Exploration
- Career Learning
- Career Readiness
- Career Self-Management
- Group Career Counseling Model
- Happenstance Learning Theory
- Hope Theory
- Lack of Fit Model
- Life Designing Paradigm
- Life-Span Theory
- Psychology of Working Theory
- Relational Theory of Working
- Role Congruity Theory
- Self-Concept Theory of Career Development

- Social Cognitive Career Theory
- Theory of Circumscription and Compromise
- Theory of Vocational Personalities
- Vocational Anticipatory Socialization (VAS)
- Vocational Identity

It is important to note that these theories are still important and highly relevant and should continue to inform career development program design (this is articulated further in Chapter Eight). This left twenty-six theories which warranted further review, which are listed here:

- Attachment Theory
- Basic Psychological Needs Theory (BPNT)
- Broaden-and-Build Theory
- Critical Race Theory (CRT)
- Decision Theory
- Emotional Intelligence Theory
- Epistemologies of Ignorance
- Experiential Learning Theory
- Expectancy-Value Theory
- Four Identities
- Identity Control Theory
- Identity Style
- Intersectionality Theory
- Motivational Theory of Life-Span Development
- Possible Self Theory
- Process Theory of Future Orientation

- Queer Theory
- Regulatory Focus Theory
- Self-Directedness (self-directed learning)
- Social Justice Theory
- Social Semiotic Theory of Multimodality
- Stage-Environment Fit Theory
- Theories of Translanguaging
- Theory of Practice
- Theory of Social Support
- Unified Theory of Acceptance and Use of Technology (UTAUT)

The review process involved critiquing the original article(s) they were identified in and, if required, engaging with supplemental reading for more clarification of the theory. Again, each theory was assessed for its relevance and applicability to the outcomes and future contextual layers, along with considering the similarities between the trends (Table 12).

Table 12

Theory Selection Rationale

Theory	Assessment Considerations
Process theory of Future Orientation (Nurmi, 1991; Seginer, 2009)	Relevant for future-oriented thinking but lacks robust applicability to the dynamic and systemic changes in future career contexts.

Theory	Assessment Considerations
Basic Psychological Needs Theory (BPNT; Deci & Ryan, 2000)	Highly relevant and applicable based on its foundational focus on motivation, well-being, and adaptability across diverse future career challenges.
Motivational Theory of Life-Span Development (Heckhausen et al., 2010, 2019)	Addresses motivational dynamics but lacks the systems-level applicability needed for addressing future career complexities.
Possible Self Theory (Markus & Nurius, 1986)	Highly relevant and applicable for envisioning future goals, motivation, and career adaptability in uncertain and rapidly changing environments.
Attachment Theory (Ketterson & Blustein 1997)	Limited relevance and applicability to the future contextual layers as its focus is on early life engagement with parents or guardians.
Broaden-and-Build Theory (Fredrickson, 2001, 2003)	Relevant for fostering positive emotions and resilience but lacks direct career-oriented applicability to systemic and future-focused challenges.
Critical Race Theory (CRT) (Briggs, 2018)	Highly relevant for addressing systemic inequities.

Theory	Assessment Considerations
Decision Theory (Cardoso, et al., 2022)	Relevant for understanding decision-making processes but lacks depth for addressing systemic and contextual career development complexities.
Emotional Intelligence Theory (Darmayanti & Salim 2020)	Highly relevant and applicable for managing emotions, fostering collaboration, and adapting to human-AI workplace interactions. Strongly related to anything related to mental wellbeing and anxiety.
Epistemologies of Ignorance (Bhatt & MacKenzie, 2019)	Relevant for understanding systemic barriers to knowledge but less directly applicable to actionable career development frameworks.
Expectancy-Value Theory (Eccles et al., 1983)	Useful for linking motivation to goal outcomes but lacks comprehensive adaptability to systemic and contextual future challenges.
Experiential learning theory (Kolb, 1984)	Highly relevant for career training and approach but isn't overly related to the identified outcomes and contextual layers.
Four Identities (Marcia, 1966, 1980)	Relevant for identity formation, isn't as applicable to the outcomes of career development.

Theory	Assessment Considerations
Identity Control Theory (Kerpelman, Pittman, & Lamke, 1997)	Addresses identity dynamics but lacks comprehensive relevance to systemic and future-focused career challenges.
Identity style (Berzonsky, 1989; 1992; 1993)	Relevant for understanding identity development but less applicable to the future contextual layers.
Intersectionality Theory (Tynes et al., 2016)	Highly relevant and applicable for addressing diversity, equity, and inclusion in increasingly diverse and globalized career contexts.
Queer Theory (van Leent & Mills, 2018)	Relevant for addressing inclusivity but less directly applicable as a standalone career development framework.
Regulatory Focus Theory (Napolitano et al., 2020)	Useful for understanding motivational styles but lacks broad applicability to complex, systemic career challenges.
Self-Directedness (self- directed learning) (Kim & Kim, 2018)	Relevant for fostering autonomy in career development but lacked strong theoretical framing.
Social Justice Theory (Fraser, 2007, 2008)	Highly relevant for equity, supports similar thinking as critical race theory and intersectionality theory.

Theory	Assessment Considerations
Social Semiotic Theory of Multimodality (Kress, 2010)	Relevant for understanding communication but lacks applicability to systemic career challenges.
Stage-Environment Fit Theory (Eccles, Midgley et al., 1993)	Relevant for developmental transitions but lacks comprehensive adaptability to the rapid rate of change.
Theories of Translanguaging (Kim, 2018)	Relevant for linguistic inclusivity but limited in application to broader career development frameworks.
Theory of Practice (Bourdieu, 1977)	Relevant for addressing systemic structures but lacks direct applicability as a practical career development framework.
Theory of Social Support (Wittrup & Hurd, 2022)	Relevant for career transitions but lacks robust adaptability to systemic career challenges in future contexts.
Unified theory of acceptance and use of technology (UTAUT; Matli, & Ngoepe, 2021)	Relevant for understanding technology adoption but lacks applicability to broader career development frameworks in diverse and dynamic contexts.

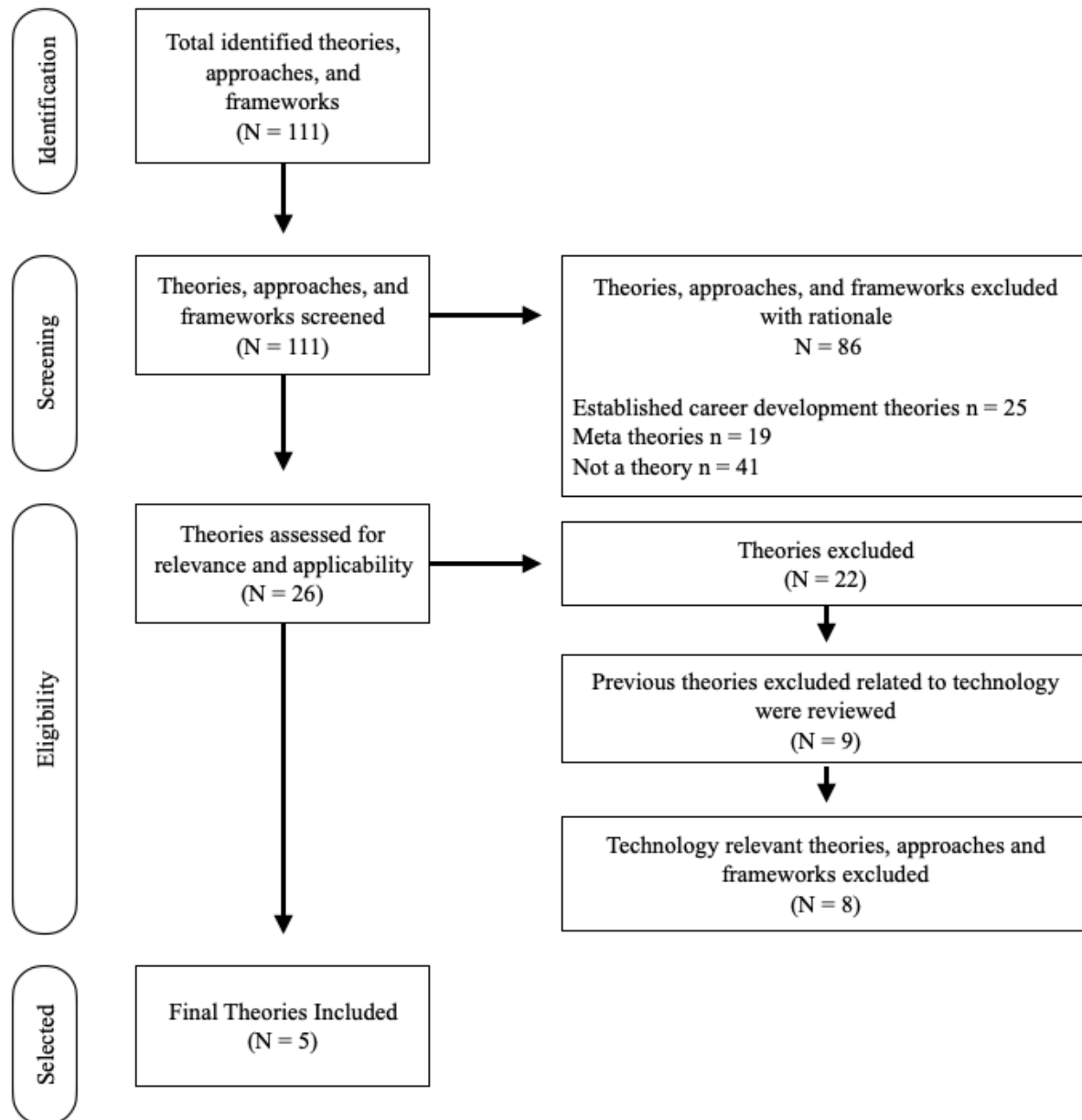
As a result of this process, four theories emerged as being the most relevant and applicable to the outcomes and future context: Basic Psychological Needs Theory (BPNT; Deci & Ryan, 2000, 2017), Emotional Intelligence Theory (EQ; Mayer & Salovey, 1997),

Intersectionality Theory (Crenshaw, 1989), and Possible Selves Theory (Markus & Nurius, 1986). At this point, it was noted that there was a gap in the theory explicitly relevant to outcomes and future contextual layers related to technology. This resulted in a reconsideration of nine theories, frameworks, and approaches previously excluded, which were explicitly connected to technology. These were critical digital literacy, digital financial literacy, digital intersectionality theory, digital literacy, reductionist digital education, social semiotic theory of multimodality, unified theory of acceptance and use of technology (UTAUT), technological determinism, and transmedial ecologies.

The result of this additional review was the selection of critical digital literacy as the fifth and final theory to inform the framework. The concept of literacy is often not considered a middle-range theory as it functions more as a conceptual framework or pedagogy (Bishop, 2023). However, for the purpose of this theoretical framework, critical digital literacy was selected and presented as a middle-range theory as it is conceptually related, provides insights directly related to technology (an important future contextual layer), and offers strong theoretical support for youth career development interventions, specifically for the year 2030. Additionally, identified theories, such as critical race theory, digital intersectionality (Tynes et al., 2016), critical consciousness (Friere, 2021), and multimodal learning (Lou, 2023), further validate its inclusion. The process of theory refinement is illustrated in Figure 4.

At this point, as articulated in chapter five, further review of applicable literature was done using a form of ‘berry picking’ search method (Bates, 1989) with the purpose of validating and ensuring the five theories were relevant and for applicability to the future contextual layers and identified outcomes. Based on this further review of relevant literature, the five theories demonstrated validity and were empirically supported to be broadly applicable to career development and applicable within the CMO configuration. The result in step six was the

proposal of a Futures-Oriented Theoretical Framework for Informing Youth Employment Practices, informed by youth-focused CDPs working in Nova Scotia and current academic literature. This evidence-based framework, which was proposed to be uniquely relevant to the Nova Scotian youth career development context in 2030, is general enough to be applied across Canada.

Figure 4*Theory Flowchart***Conclusion**

In conclusion, this chapter laid the groundwork for the final presentation in Chapter seven, where the futures-oriented theoretical framework will be fully articulated. The framework aims to provide both conceptual clarity and practical utility, equipping career development

professionals with tools to design forward-looking, evidence-based interventions that anticipate the challenges and opportunities of youth career development in 2030.

CHAPTER 7: FUTURES ORIENTED THEORETICAL FRAMEWORK

The following chapter is the pinnacle of this research and presents the final futures-oriented theoretical framework for youth career development built toward throughout this entire document. This framework is informed and shaped by the voices of youth career development professionals working within the field in Nova Scotia, Canada. It was developed through multiple steps of data collection and analysis utilizing an engaged scholar critical realist informed approach. Each step in this research journey has built upon itself while remaining aligned and informed by the broader conceptual framework. There are many theories and models focused on supporting youth career development (Howard & Ferrari, 2022); however, the function of this theoretical framework is to provide an integrated framework of middle-range theories, which are proposed to support (mechanisms) the positive outcomes of youth career development education in the year 2030 (context). It is unique in its approach of embedding futures thinking within a critical realist paradigm, viewing programs as theories, and embedding in future contexts, resulting in specific outcomes (Maxwell, 2012).

This framework is composed of critical digital literacy (Gouseti et al., 2022), basic Psychological Needs Theory (BPNT; Deci & Ryan, 2000, 2017), Emotional Intelligence Rheory (EQ; Mayer & Salovey, 1997), Intersectionality Theory (Crenshaw, 1989); and Possible Selves Theory (Markus & Nurius, 1986). It is proposed that these theories, when mutually and reciprocally leveraged in the design of youth career development programming in 2030, could support career development professionals to account for and ‘fire’ deep generative mechanisms (dormant causal forces), which when activated could support the observed achievement of the hoped-for outcomes (Nielsen et al., 2022). These five theories should be viewed as one coherent framework that is broadly applicable to various locations, organizations, professionals, and youth who are either providing or receiving career development services. They present unique

considerations but are mutually contributive. This chapter begins with an overview of current career development theories, followed by a brief introduction of the futures-oriented theoretical framework for career development, followed by a review of each theory. As noted in Chapter Four, rather than developing specific CMO configurations, which risk being overly deterministic and reductive thinking, this study adopts a modified realist review to identify middle-range theories that account for the dynamic interplay between outcomes, mechanisms, and future contextual layers. While outcomes and contextual layers were identified, possible relevant causal mechanisms analysis was embedded within the broader identification of middle-range theories. Therefore, for each individual theory review, a brief introduction to the theory and several key areas of alignment and possible mechanisms are highlighted, and the relevance and connection of the theories to the identified outcomes and future contextual layers are provided. This chapter begins with a quick review of the important career development theories.

Important Career Development Theories

As stated above, within the field of career development, many theories and models support professional career development to intentionally design and foster meaningful learning and development (Howard & Ferrari, 2022). It is important to emphasize that this futures-theoretical framework, while not explicitly adopting career development theories, still views them as important and useful both currently and in the future. Based on the futures-oriented rapid realist informed review, some of the most important career development theories that demonstrate current and future relevance (based on the identified future contextual layers) are the Social Cognitive Career Theory (SCCT; Hackett and Betz, 1981; Lent et al., 1994; Lent & Brown, 2008), Career Construction Theory (Savickas, 2013), Hope Theory (Snyder et al., 1991, 2002), and the life design paradigm (Savickas et al., 2009). SCCT emphasizes the interplay of self-efficacy beliefs, outcome expectations, and personal goals in career development. It asserts

the reciprocal influence of individual agency and environmental factors. Further, it accounts for how contextual affordances (such as social supports and structural barriers) shape career trajectories (Lent et al., 1994; Lyons et al., 2010). Career Construction Theory, while similar, moves from trait-based career selection to a narrative-driven approach, emphasizing career adaptability, life themes, and vocational personality (Kara, 2024). Hope Theory contributes a psychological dimension, considering and reiterating that career development is driven by agency thinking and pathways thinking (Snyder, 1991). This theory posits that individuals with higher levels of hope engage in more proactive career exploration and demonstrate resilience in navigating career transitions (Juntenen & Wettersten, 2006). Finally, the life design paradigm expands career development by emphasizing lifelong adaptability, recognizing that career development is no longer a linear process but an ongoing negotiation of self and the environment (Savickas et al., 2009). It reframes career development programs and interventions around subjective well-being and meaning making (Cardoso et al., 2022).

The reason for noting these theories' current and future relevance is that, while the futures-oriented framework does not include them, their influence and perspectives remain relevant and useful to the design and development of youth career development programs in 2030. As Howard and Ferrari (2022) write: "As the field of career development continues to evolve, theorists, researchers and practitioners are increasingly identifying areas of theory convergence, are offering models of theory integration, and suggesting areas in theory expansion is needed" (p. 372). This futures-oriented framework is an example of the expansion and integration of theories normally outside the field of career development. Career development professionals must continue to strive and adapt their practices and approaches to foster environments that support meaningful career education and development (Wang, 2019). As emphasized repeatedly, the nature of career development is increasingly complex (Bloch, 2005),

and with complexity, the importance of intentional program design is heightened. Therefore, a futures-oriented theoretical program is not offered to replace the above career development theories, but instead as a framework to build upon and complement their foundational and ongoing usefulness by offering an additional futures-focused perspective. The remainder of this chapter is dedicated to this framework and its theoretical elements.

Futures-Oriented Theoretical Framework for Youth Career Development

As noted throughout this document, the intention and purpose of this framework was to develop a futures-oriented theoretical framework composed of middle-range theories, which can help support CDP's design and adaptation of youth career development interventions and programs for the year 2030. The development of this framework is grounded in an engaged critical realist-informed scholar approach and is the result of various sources of data that are directly shaped by CDPs working in Nova Scotia. It is important to note that while many realist evaluations and realist research projects will list explicit CMO configurations, this researcher's intention was generalizability and to acknowledge the dynamic and complex interaction between unknowable future contexts, mechanisms, and outcomes. This led to the development of a framework of middle-range theories that is flexible enough to be applied in various settings and the evolving needs of youth career development professionals. The following five middle-range theories are proposed to be uniquely relevant to supporting the outcomes identified by CDPs, specifically within the identified future contextual layers (see Table 13).

With the rapid rate of change and increased complexity faced by Gen Z as they prepare to enter the workforce, this research represents a highly complex and interdisciplinary approach to help best support CDPs (Howard & Ferrari, 2022; Guana et al., 2023). The futures-oriented nature of the framework is itself a demonstration of the value of this future perspective, as the skill and importance of futures thinking equips individuals to be proactive rather than reactive

when considering changes happening around them. The ability to intentionally consider and understand possible futures is a skill that is useful and relevant in today's uncertain and fluid contexts (Magnus et al., 2021). The primary focus of the remainder of this chapter is to review each theory, beginning with critical digital literacy. This review introduces each theory and focuses on the areas of relevance and connection to the identified outcomes and future contextual layers. Following this, the chapter concludes with a brief overview of how these theories and, subsequently, the framework are uniquely relevant to support CDPs in 2030.

Table 13

Theoretical Framework alignment with Future Contextual Layers and Outcomes

Theory	Contextual Layers Supported	Key Outcomes Supported
Critical Digital Literacy	Digital Literacy, Hybrid/Online/Remote Work, Rapidly Changing Labour Market, AI Impact on Labour Market, Self-Directed Learning	Digital Literacy, Exposure to Relevant Resources, Career Exploration, Understanding Training and Education Options, Insights to Personal Passions
Basic Psychological Needs Theory	Anxiety about Career Options, Anxiety about Finances, Mental Health Struggles, Relational Approach, Youth-Centric Approach; Rapidly Changing Labour Market, AI Impact on Labour Market, Ability to Engage in Self-Directed Learning	Connection with Trusted Adults, Identification of Personal Strengths, Insights to Personal Passions, Increased Self-Awareness, Increased Confidence, Career Exploration, Exposure to Relevant Resources, Identification of Personal Strengths and Skills, Insights to Personal Passions, Understanding Training and Education Options
Emotional Intelligence Theory	Anxiety about Career Options, Anxiety about Finances, Mental Health Struggles, Racial Equity	Increased Self-Awareness, Increased Confidence, Connection with Trusted Adults, Exposure to Diverse

Theory	Contextual Layers Supported	Key Outcomes Supported
	and Inclusion Strategies (ES), Relational Approach, Soft Skills, Intercultural Skills, Hybrid/Online/Remote Work	Career Options, Understanding and Identification of Transferable Skills, Career Exploration, Digital Literacy
Intersectionality Theory	Racial Equity and Inclusion Strategies, Increasing Economic Divide, Soft Skills, Intercultural Skills	Exposure to Diverse Career Options, Increased Self-Awareness, Connection with Trusted Adults, Understanding and Identification of Transferable Skills
Possible Selves Theory	Rapidly Changing Labour Market, AI Impact on Labour Market, Ability to Engage in Self- Directed Learning	Career Exploration, Exposure to Relevant Resources, Understanding Training and Education Options, Identification of Personal Strengths and Skills

Critical Digital Literacy

The first theory within the larger framework to review is critical digital literacy (CDL). Often literary or pedagogical approaches aren't considered to be 'middle-range' theories, however, for the purpose of this framework critical digital literacy provides a useful and broad conceptual/theoretical frame relevant to the identified outcomes and future contextual layers. It is applied less as a prescriptive literary approach, but as a framing element to support intervention and program design. While there is significant discrepancy within academic literature about a concrete definition of digital literacy (Gouseti et al., 2022), for this research's purpose, CDL can be understood as both the skills and knowledge of digital technologies, particularly internet-based platforms, coupled with an awareness of the ideological frameworks, power dynamics, and socio-political motivations that shape digital environments and influence online interactions (Polizzi, 2023). It is a variant of media literacy (often used as an umbrella term for various literacies, including information, media, digital, data, multimodal, and network literacies), but

applies techniques from post-structuralism, sociocultural, post-colonial, gender, and critical race studies, with the intention of empowering individuals to understand and interrogate digital content (Pötzsch, 2019). Considering Pawson's 4 I's, CDL is a valid middle-range theory to be included in this framework for many reasons, however, this research emphasizes three. The first is that CDL is foundational to equip and support youth, and CDPs navigate an increasingly digitalized and technologically embedded work and educational context. This recognizes the importance of digital/technological skills for employment that cannot be understated (Lombardi et al., 2017). The second source of validation is that it can address the myth that young people, while being technologically literate, leverage technology in their career development journey. The final validating factor is the recognition of the digital space as racialized (Klein et al., 2024), and that CDL can support both youth and CDPs to increase their awareness of this. The first area of alignment was validated by the scope and rate of technological advancement (Thillaivasan et al., 2020), which is seen in several future contextual layers.

The fourth industrial revolution has had a significant influence on the future of work (Lyons et al., 2019). Technology and digital space are the driving forces of change in both the present and future (Dennen et al., 2023), affecting all aspects of society. Whether it is the rising concern about data privacy (Kim et al., 2023), online learnings (Gouseti et al., 2022), agentic AI (Archarya et al., 2025), digitalization (Kuusisto, 2017), or cyber security (Ghelani, 2022), the digital world is an established 'space' shaping the present and future of the labour market and career development. Polizzi (2023) writes: "We live in an age when the social is increasingly intertwined with the digital, which is why (re)imagining and participating in society requires an understanding of the digital environment" (p. 1206). Therefore, both youth and CDPs must consider and engage with how to work and learn in digital spaces (Gouseti et al., 2022), growing in understanding to better navigate the larger infrastructural structures. Three of the 14 future

contextual layers relate directly to technology (hybrid/online/remote work, AI impact on labour market, digital literacy), with several others (mental health struggles, rapidly changing labour market, ability to engage in self-directed learning) indirectly related. Futurist Amy Webb proposed that the global North is in a Technological Supercycle (period of rapid and ongoing technological innovation), which was propelled forward by the Covid-19 pandemic and is strongly informed by the exponential advancement of Artificial Intelligence technology. The rationale for CDL highlighted here is simply that technology is changing the world, and that the ability to have both the skills and knowledge of how to engage with it is necessary. It should be noted that CDL, within this framework, is intended to support understanding and critical awareness of how technology writ large, including AI, is and will influence both the workforce (youth) and educational practices (career development practitioners). The importance and significant impact of AI on the workforce and educational practices are such that AI literacy could perhaps be its own framework element (Su et al., 2023); however, for the purposes of this research, AI literacy should be considered part of CDL. The next aspect of CDL, which validates its inclusion, is connected to how this rapid rate of change has led to significant gaps in relevant digital skills and the myth that youth have said skills (Lyons et al., 2019).

Gouseti et al., (2022), emphasizes that the ‘critical’ nature of CDL, “can relate to critical thinking and understanding regarding digital technology use as well as critical awareness, self-reflection and evaluation of one’s own and others’ digital practices and online engagement” (p. 1755). The importance of this, as emphasized in the literature is the ‘digital native myth’, which proposes that young people are inherently digitally literate and capable; this, according to research, is not factual (Dennen et al., 2023). The concept of youth being digitally literate, while often holding true to their understanding of the personal use of social media, does not translate to applying their understanding of how to use technology to support their career

aspirations or educational endeavors (Lombari et al., 2017). Khan et al., (2022) writes: “Future learners should equip with the operation and critical thinking skills when using the technology and it should be a weapon for improving learning and outcomes for individuals” (p. 56). CDL supports both youth and career development professionals in developing skills and capacities to: (a) negotiate their own motivations, abilities, and access to create content; (b) understand that algorithms shape their online experience; (c) be critical of the credibility of post sources; (d) understand app functionality; (e) understand platform-specific language (e.g., memes, acronyms, slang); (f) critically consider the underlying meanings of content; and (g) understand the consequences of one’s digital footprint (Cho et al., 2022; Boczkowski et al., 2018; Klien et al., 2024). It can support youth in this digitalized world, where most of the workforce application process (finding jobs, applying, interviewing, etc.) is in digital spaces, and supports youth developing skills and competencies to be able to access, evaluate, and engage skills they may need in places of work (Khan et al., 2022). These competencies and skills influenced by CDL are increasingly essential for young people to meaningfully attach to the labour market and further validates its use within this framework (Khan et al., 2022). The final point of emphasis in validating CDL inclusion is its relevance to the future contextual layer of racial equity and inclusion strategies and a relational approach.

In the research done by Dy et al. (2017), they note that the stigmas and disadvantages faced by women of colour in the embodied, offline world, remain present in online spaces (p. 303). This emphasizes the importance and validity of CDL with emerging complementary theories, such as digital intersectionality (Stewart et al., 2023), as an important middle-range theory within this framework. CDL provides a theoretical construct that can support CDPs, and youth participants develop critical awareness of online content and deepen their understanding of the “broader socio-political and economic forces” (Polizzi, 2023, p. 1208). This critical

awareness equips them to review the said content for any bias and evaluate the general trustworthiness of what they are consuming. Recognizing the importance of the digital space, and that digital world being racialized (Klein et al., 2024), program and interventions designed in consideration of CDL have latent causal power to support positive outcomes of *Understanding of Training and Education Options, Exposure to Relevant Resources, and Increased Self-Awareness*. Awareness of algorithms and bias in the digital space broadly supports the development of skills and competencies specific to navigating a digital world (generative mechanisms). Therefore, critical digital literacy provides a theoretical foundation for career development professionals to be aware of the power and equity challenges facing youth in the digital space, while also providing a framework for skill development.

In conclusion, CDL provides a theoretical foundation to support career development professionals to engage in deep and intentional program and intervention design in the year 2030, as it supports individuals' understanding and adaptability with rapidly changing technology; supports knowledge and skills for youth in leveraging technology for career development; and finally contributes to self-awareness and supports a more critical approach to resources, education, training, and possibly places of work, all of which are important and possible causal mechanisms. Embedded within all these elements of validation is that it supports career development professionals to grow in their own understanding of both the challenges faced by young people in their job application process (racist job posting, ageism, etc.) and their own understanding of how to provide learning opportunities using digital tools and technology (Gouseti et al., 2022) through the incorporation of multimodal learning strategies. The next theory within this framework is the Basic Psychological Needs Theory.

Basic Psychological Needs Theory

The second theory within this theoretical framework is the Basic Psychological Needs Theory (BPNT), which is connected to the broader Self-Determination Theory (SDT, Deci & Ryan, 2000, 2017). SDT is a broad framework that considers factors that support (or hinder) the development of “intrinsic motivation, autonomous extrinsic motivation, and psychological well-being” (Fantinelli et al., 2023, p. 3), which contribute to positive engagement, skill development, and academic achievement (Mameli et al., 2019). BPNT offers a more focused theory, proposing that when three basic psychological needs of intrinsic motivation (autonomy, competence, and relatedness) are met, well-being, and persistence will be fostered (Deci & Ryan, 2000). Holding et al., (2020) define the three needs as follows: “Autonomy represents the need to volitionally endorse one’s actions. Relatedness refers to the need to feel connected to others. Competence refers to the need to experience mastery” (p. 101). If the environment supports these three basic needs, individuals will feel supported (relatedness) by a larger social network and grow in satisfaction and belief in their ability (competence) and freedom (autonomy) to make decisions, all of which contribute to positive identity formation (Luyckx et al., 2009; Cordeiro et al., 2015). From a realist perspective, these could be viewed as causal mechanisms. Deci and Ryan (2000) used the metaphor of a plant being watered or not, and that in contexts that meet these needs, individuals will flourish and grow (p. 229). Using BPNT as a theory to inform career development is not novel, as researchers, such as Cordeiro et al. (2015), Sönmez et al. (2024), and Xu et al. (2023) validated the usefulness and relevance of this framework in supporting career development. However, it is included in this framework as it clearly supports several outcomes (*Increased Confidence, Increased Self-Awareness, Identification of Personal Strengths and Skills, and Insight into Personal Passions*) and is uniquely suited for the several future contextual layers (*Hybrid/Online/Remote Work; Rapidly Changing Labour Market; Relational*

and Youth-Centric Approach) and is highly relevant to the future contextual layers related to anxiety and mental health challenges. The aspects of BPNT highlighted to validate its inclusion are its support of positive mental health, career adaptability, and connection to lifelong learning and the hybrid work environment. The first rationale for the inclusion of BPNT is its connection to mental health and wellness.

Significant evidence supports the claim that meeting these three basic psychological needs promotes positive well-being and identity formation, especially for young people (Sönmez et al., 2024; Chui, 2024). The opposite is also true: if the meeting of these “needs are thwarted, individuals regress to a state of passivity, ill-being, and alienated functioning” (Luyckx et al., 2009, 278). This understanding frames BPNT as a useful theory to help shape educational contexts and alludes to a moral obligation of youth career development professionals; in not meeting these needs, they hinder the positive career development of youth participants (Holding et al., 2020). For youth career development professionals, when considering programs and interventions in the year 2030, BPNT presents a highly useful middle-range theory that relates directly to how the institutional and interpersonal contextual layer can positively contribute to the mental wellness of youth participants. Authors Ryan and Sapp (2007) emphasize that the “everyday ecological context” in which students and youth are situated, influences their wellness (p. 71), aligning with the realist emphasis of context. Poor mental health wellness and its implications on all youth-focused educational/developmental programs is a well-known and established challenge currently being navigated (Yeo et al., 2024). Specific to career development, Darmayanti and Salim (2020) noted that while anxiety is a normal emotion, prolonged career-related anxiety without support (relatedness), agency, and competence to help refine their career interest and to develop/identify possible actions to move beyond said anxiety is unhealthy (p. 134). To support the ‘occurrences’ of the identified outcomes, the career

development learning environment must be supportive and sensitive to the increased mental health pressures projected to be faced by youth in the year 2030. According to a Statistics Canada report (2024), in 2023, 26% of Canadian youth aged 16 to 21 rated their mental health as "fair" or "poor," more than doubling the 12% reported by the same cohort when they were aged 12 to 17 in 2019 (context). This reflects a significant decline in self-rated mental health over the four-year period. Considering this and the projection of future contextual layers related to ongoing mental health challenges for 2030, this decline in mental health will most likely not improve. Therefore, career development professionals can be intentional about considering how to meet the three basic needs. Beyond supporting the well-being and thriving of youth, BPNT is highly relevant to supporting career adaptability, which is applicable to future contextual layers of a rapidly changing labour market.

Sönmez et al., (2024) stated: "Satisfaction of autonomy, competence and relatedness needs had a positive effect on the career adaptability" (p. 5). The concept of career adaptability is foundational to the work of exemplary career development scholar Savickas and his Career Construction Theory. Savickas (2005) conceptualized career adaptability as reflecting a person's readiness to deploy four adaptive strategies: concern, control, curiosity, and confidence. More clearly, "Career adaptability is explained as an individual's capability to overcome sudden and unexpected career transitions, changes and difficulties in the career development process" (Kara, 2024, p.196). Supporting the need for autonomy fosters a sense of ownership and personal agency among individuals regarding their careers (Ryan & Deci, 2000). Supporting the need for competence related to career development nurtures youths' sense of 'mastery' and belief in their own ability related to workplace skills and competencies, supporting their confidence to navigate change (Sönmez et al., 2024). Finally, meeting the need for relatedness helps youth participants feel connected to both their peers and the career development professional (Magson et al., 2022),

supporting youth participants to feel a sense of belonging and increasing their willingness to trust the career development professional (Sinclair et al., 2019), all of which represent causal mechanisms. This sense of trust in career development professionals cannot be understated, as research has shown that having a trusting relationship between educators and students is an integral factor in supporting youth willingness to engage with and internalize any dissemination coming from educators (Shaffer & Zalewski, 2011). The importance of career adaptability has only increased in importance, as affirmed by the future contextual layer of the *Rapidly Changing Labour Market* (Khan et al., 2022). The current rate of change in the workforce (as noted above in relation to the importance of critical digital literacy) is unprecedented and unrelenting. Kivunja (2015) affirms this emphasizing that based on the conditions of the rapidly changing 21st century workplace, employers are looking for graduates who are “resourceful and adaptable” (p. 3), two important characteristics for today's context. As noted above, career adaptability is developed as the basic needs are met, which promotes the sustained internalization of motivation, resiliency, and positive identity formation (Liu & Haung, 2021; Chui, 2024), which again, simply put, supports, “both their psychological well-being and their ability to adapt professionally” (Sönmez et al., 2024, p. 5). This internalized motivation (as opposed to external sources of motivation), when related to career development, can equip youth with the ability and internal motivation to navigate the world of hybrid and remote work and engage in lifelong learning (Fantinelli et al., 2023).

The future of work is strongly influenced by the rapid rate of change, which has heightened the need for lifelong learning (individual layer) and propelled the very nature of workspaces (Chui 2024), resulting in the emergence of infrastructural layers of remote and hybrid work (Boatca et al., 2024). Subsequently, career development professionals must consider how to support and equip youth entering the workforce to navigate and engage in a new and

changing reality (Rich, 2023; Bhatia et al., 2024). Working remotely requires a significant amount of internal motivation and discipline, which supports young workers' ability to maintain proper work output while supporting their career satisfaction (Boatca et al., 2024). By creating educational environments which support the meeting of the basic needs, youth will develop internal motivation to engage in the career development process, which helps to "sustain their own personal growth and well-being, which potentially enhances their learning outcomes" (Chui, 2024, p. 90-91). Identified outcomes, such as *Career Exploration* and *Awareness of Personal Passions*, will ultimately support their ability to engage in lifelong learning. Tjin et al., (2018) highlighted that not having the basic needs met can be associated with the development of negative learning behaviours such as procrastination and debilitating test-anxiety, which in a hybrid workforce can lead to disengagement, low work output, and ultimately result in job loss. BPNT provides a theory for educational contexts that fosters youth participants' ability to engage in the learning process by supporting their agency as learners (autonomy) and situating learning in a space of connection (relatedness). This type of environment (interpersonal and institutional) contributes to youths' ability to grow in their capabilities to achieve desired outcomes (competence) (Tjin et al., 2018). This type of environment, as described by Gupta et al., (2024), "Emerges from the dynamic interactions between students' independent engagement in learning within specific sociocultural settings and the contextual elements that either facilitate or hinder their ability to act" (p. 2). BPNT presents career development professionals as a middle-range theory that supports students in developing internal motivation (Pinto et al., 2016). As students increasingly internalize their motivation, values, and career aspirations, this in turn can contribute to their desire to continue obtaining knowledge and skills (Chui, 2024). Ultimately, this enhances their ability to navigate remote work and supports their ongoing learning (van der Burgt et al., 2019).

In conclusion, BPNT presents a theory that is highly adaptive and applicable across the taxonomy of 4I's and is highly applicable to Nova Scotian programs, contexts, and individuals in the year 2030. BPNT adopts a perspective of "Universality without uniformity", meaning that different cultures can take different approaches and pathways to satisfying the three basic needs (Reeve et al., 2018; Magson et al., 2022; Sönmez et al., 2024). This is important, as career development professionals must consider how to provide services that are applicable across various intersecting identities (cultural, sociological, sexual orientation, gender, cognitive, and physical ability) and the unique needs of individuals in specific contexts. The three aspects that rationalized BPNT inclusion were its support of positive mental health, career adaptability, and connection to lifelong learning and the hybrid work environment. BPNT is an important element within this theoretical framework as it supports the understanding of generative mechanisms (autonomy, competency, and relatedness) that possess causal power, especially the possible interplay between future contextual layers (individuals, interpersonal, institutional, and infrastructural). Considering this, programs and interventions influenced by BPNT could be highly effective in achieving various outcomes based on the contextual configurations of youth career development services by 2030. The next theory of which this framework is composed is Emotional Intelligence Theory.

Emotional Intelligence Theory

The relationship between cognition and emotion has been a focus of curiosity since ancient Greece (stoicism; philosopher king), with the modern field of psychology focusing on empirical research on emotions and their influence (Mayer et al., 2004; Chaidi & Drigas, 2022). A common consensus among scholars is that the term emotional intelligence (EQ) was first used by Wayne Payne in 1985 in his doctoral dissertation (Malone, 2021). However, psychologists Peter Salovey and John Mayer (1990; 1997) are often labeled as the founders of EQ. EQ has

increasingly been applied to various fields, and this is often called ‘mixed’ models (Goleman; 1995; Bar-on, 1997), however, for the purpose of this framework the four-branch model of Mayer and Salovey (1990; 1997) will be the approach to EQ applied. The four branches focus on the four main components (abilities and skills) that comprise EQ: abilities to perceive emotions, use emotion to facilitate thought, understand emotion, and manage emotions (Mayer & Salovey, 1997; Mayer et al., 2001; Wang, 2019). The four branches form a hierarchy of complexity, with the ability to perceive emotions as the least complex, moving toward the management of emotions (Mayer et al., 2001). Mayer et al., 2004 state:

Thus, the perception and expression of emotion (Branch 1), and the capacity of emotion to enhance thought (Branch 2) are relatively discrete areas of information processing that we expect to be modularized or bound within the emotion system. By contrast, emotion management (Branch 4) must be integrated within an individual's overall plans and goals. Within each branch there also is a developmental progression of skills from the more basic to the more sophisticated (p. 199).

Akin to critical digital literacy, EQ may not be considered by some as a middle-range theory. However, for this research, EQ is framed as a middle-range theory, based on its capacity to help illuminate deeper structures and generative mechanisms (e.g., self-awareness), which have latent causal force and are highly relevant to several outcomes and future contextual layers. The four-branch model presents EQ as a theory that supports career development professionals in approaching program and intervention design, recognizing the deeper causal forces influencing emotions and their implications. Many researchers have connected the importance of EQ and career development (Coetzee & Harry, 2014), which shows that it positively supports career decision-making, self-efficacy, career commitment, and career exploration (Coetzee &

Harry, 2014). Specific to this research, EQ and the abilities outlined within the four-branch model directly contribute to several of the outcomes identified by Nova Scotian CDPs. Specifically, four-branch model contributes to *Increased Self-Awareness* and *Increased Confidence*, while supporting other outcomes such as *Connection with Trusted Adults*, *Understanding and Identification of Transferable Skills*, and *Career Exploration*. This further validates the use of EQ as a theory within this framework and demonstrates its contextual relevance when considering future contextual layers such as *Anxiety about Career Options*, *Anxiety about Finances*, *Mental Health Struggles*, *Soft Skills*, *Intercultural Skills*, *Rapidly Changing Labour Market*, and *Hybrid/Online/Remote Work*. To demonstrate the value and rationale of EQ, each of the four abilities will be reviewed, and their relevance to the identified outcomes and future contextual factors will be demonstrated. This is followed by identifying the latent causal force of EQ to support the outcome of self-awareness will be proposed, with the final rationale being its relevance to the technologically integrated and rapidly changing workforce. First, the specific aspects of each of the four branches and their connection to the outcomes and future contextual layers are expanded below.

Branch 1 refers to the ability to perceive others' emotions. Often, this is understood as the ability to recognize facial expressions, verbal tone, and physical cues (Mayer et al., 2004; Chaidi & Drigas, 2022). This is relevant to both the individual and interpersonal contextual layers, as research has shown that supporting students' (youth) emotional needs has a direct influence on their learning and development (Costa & Faria, 2023). Career development professionals must themselves have EQ and be able to perceive youth participants' emotions to help foster and support learning environments that can support positive and useful learning. For youth, the ability to understand social cues supports their interpersonal abilities, which is an important contributor to the workplace (Want, 2019). It should be noted that for some individuals,

especially those on the autism spectrum, the ability to understand and perceive emotions may be hindered (Molnar-Szakacs et al., 2009). This should be taken into consideration by career development professionals, as they provide support to a diverse assortment of cognitively abled youth. Various strategies and approaches could support individuals working with this specific population; however, this variation was beyond the scope of this research. The second branch focuses on the functional role of emotions in thinking and decision making (Mayer et al., 2001). The other branches focus on recognizing, understanding, and ultimately managing emotions, as branch two emphasizes how emotions influence individuals through processes. An example of this is if a youth is feeling excited about pursuing a new job, this excitement can support them to pursue new or necessary skills. This presents an important educational and institutional layer consideration in designing engaging and compelling programs that can bolster branch two. Branch three is a more complex cognitive ability, where branch one ability is more observational and sensory (Allen et al., 2014). Examples of how branch three abilities are important is that they equip individuals (youth or CDPs) to conceptualize patterns or causes of the emotion. This ability could support CDPs and youth to understand the emotions (casual mechanism) behind the actions of peers, employers, and youth participants themselves, resulting in more understanding and, hopefully, empathy. There is a developmental aspect of Branch Three (Mayer et al., 2004); however, understanding the patterns of emotions and processes underlying emotions is an integral capability for career success (Allen et al., 2014).

Finally, branch four is the ability to manage emotions in the context of personal goals and social settings (Mayer et al., 2004). The ability to manage emotions supports individuals in recognizing their emotions and remaining emotionally balanced, with the ultimate output being greater wellness and emotional regulation (Côté et al., 2011). This is directly connected to many future contextual layers that are related to mental well-being and anxiety. It should be noted that

the ability to ‘self-manage’ emotions is a highly Western value and is strongly informed by the hyper-individualized colonial worldview. The ability to manage personal emotions is an important skill, but this does not eliminate the need for and importance of having others to support individuals in this emotional regulation. Youth CDPs can play an integral role for youth participants in modeling how to understand and manage their emotions in a work environment (Husain et al., 2022) and to support young people as they grow in their own EQ (interpersonal and institutional layers). EQ and the four-branch model represent a highly useful theory to inform career development program design. While not being the only tool for interpreting feelings or understanding the emotions of others, the four-branch model presents a framework of abilities which contributes to developing knowledge of emotions and their influence (Mayer et al., 2001). Additionally, while these branches are viewed as hierarchal in terms of complexity, they are iterative and not linear in the way in which they contribute to individuals EQ. The next rationale for EQ inclusion is its proposed ability to contribute to the development of self-awareness and adaptability.

A very clear causal mechanism and identified outcomes related to EQ are the *Development of Self-Awareness and Career Adaptability* (Mounce & Culhane, 2021). As noted above, career adaptability refers to individuals’ attitudes, beliefs, and competencies to navigate and manage career and workforce changes (Coetzee & Harry, 2019). The importance of career adaptability is an integral causal mechanism that supports youth in navigating a changing workforce amidst an increasingly complex geopolitical and economic climate. The importance of career adaptability is a repeated sentiment from the above, but, based on its importance, warrants further emphasis. Another important contribution of EQ is the development of self-awareness (Malone, 2021). Self-awareness holds a latent causal force related to various outcomes and is relevant to multiple future contextual layers. Iqbal et al., (2022) describe self-awareness related

to EQ as: “Self-awareness is the ability to identify one’s own and others’ emotions” (p. 3). Self-awareness, for example, is proposed to contribute practically to the outcomes of awareness of personal passions, identification of personal skills, and understanding of training and education options. Simply put, self-awareness of one's emotions can support young people in being aware of possible career options or professions that they hold positive emotions toward (Campeanu-Sonea et al., 2016). Further, as youth EQ increases and they become more self-aware, their ability to understand and critique their emotions can “promote thoughts, innovation, and integration for learning effectiveness” (Wang, 2019, p. 9). This has direct implications for supporting their ability to engage meaningfully in any type of career development intervention while also supporting their ability for lifelong learning (Iqbal et al., 2022). The final aspect of EQ that validates its inclusion is the need and heightened importance of EQ for Gen Z as they enter a rapidly changing, technologically driven (AI), and hybrid workforce.

As noted, EQ can positively contribute to various useful employable skills, such as communication skills, social skills, ability to work in teams, flexibility, and empathy (Matulčíková et al., 2024; Wang, 2019). The importance of these skills and attributes are well established in future of work literature (Wilson, 2024) and can all be connected to the four capacities, as outlined by Mayer and Salovey (1990; 1997). However, as noted, while Gen Z is the most technologically fluent and embedded generation, they are also experiencing significant loneliness and isolation (Coronado-Maldonado & Benítez-Márquez, 2023; Annamalai et al., 2024). Research shows that Gen Z individuals generally have greater awareness of and value for emotional health and well-being; however, their level of EQ is typically quite low (Kašparová & Linhart, 2023). Understanding this, consider the implications of the future contextual layers of remote work and the rapidly changing workforce, which have been described as brittle, anxious, non-linear, and incomprehensible (BANI; Coronado-Maldonado & Benítez-Marquez, 2023).

Studies show that younger generations prefer online work and engagement (Xiong et al., 2021); this results in further social isolation, which can have significant negative effects on young people (Annamalai et al., 2024). In isolation, working remotely in a digital environment can exacerbate unhealthy practices, making it much more difficult for individuals to adapt to the workplace (Knapp et al., 2017). As technology advances, hybrid work can impact young people's ability to develop social skills and, as emphasized, can be detrimental to their mental and physical health (Osorio & Madero, 2025). EQ represents a theory that has a latent force to support characteristics and abilities (casual forces) that would equip young people to better navigate and negate the possible negative implications of remote work (outcome). As emphasized, it contributes to adaptability and self-awareness, which can support youth in understanding their internal experiences and be resilient in developing strategies to support themselves in possible adverse situations (Darmayanti & Salim, 2020). EQ can also support youths' abilities to understand their emotions and use them as motivation to engage in meaningful learning (Iqbal et al., 2022; Costa & Faria, 2023) and achieve goals, which can be translated into supporting their ability to accomplish workplace expectations and tasks (Wang, 2019).

Concluding the review of the third middle-range theory of this futures-oriented framework, EQ, specifically the four-branch model (Allen et al., 2014), represents a well-established, contextually relevant theory that holds significant latent causal force to support many of the identified outcomes. Mayer et al., (2004) define EQ as being able to reason about emotions, and to manage emotions to enhance one's reasoning, well-being and functioning. Through a review of the four-branch model, four capabilities (perceiving emotions, facilitating thought, understanding emotions, and managing emotions; Mayer et al., 1999), the connection between EQ and self-awareness, and, finally, EQ's positive contribution to Gen Z's ability to

navigate a rapidly changing workforce and hybrid work, EQ's validity and reliability as a theory within this framework were established. The next theory contributing to this framework is Intersectionality Theory.

Intersectionality Theory

Intersectionality theory was originally introduced by Kimberlé Crenshaw (1989) in the context of the judiciary process and employment experience, focusing on the “multidimensionality of black women's experience” (p. 139). Crenshaw argues that legal frameworks often ignore the intersection of multiple forms of discrimination, leading to the marginalization of black women's experiences. She expanded upon this work (1991) by exploring ways in which “race and gender intersect in shaping structural, and representational aspects of violence against women of color” (p. 1244). Intersectionality theory has expanded and, while remaining rooted in black feminism theory and identity politics, draws on and presents a framework that recognizes the complexity of social identity and “integrates various facets of oppression, including racism, genderism, sexism, and classism” (Wright & Chan, 2022, p. 3). Recognition of how multiple identities influence individuals' experiences of discrimination supports an understanding of the diverse experiences of individuals (Kang et al., 2015). Collins and Bilge (2020) emphasized six themes that help define and frame the history and applied approach of intersectionality theory as a means of social analysis and sensemaking: (a) social context, (b) social inequality, (c) relationality, (d) complexity, (e) power, and (f) social justice. Intersectionality theory is an important and valuable theory used within education and career development to help broaden practices of critical pedagogy and multiculturalism (Kang et al., 2015), with a significant amount of research validating its relevance to workforce attachment and retention (Webster, Thoroughgood, & Sawyer, 2007). The importance of this theory can be further explained by the shifting demographics of the Canadian workforce. According to the

2016 census (Statistics Canada, 2017), immigrants comprise over one-fifth of Canada's population, and government statisticians predict that by 2036, immigrants will account for between 24.5% and 30% of the Canadian population, with nearly half of the country's population being made up of immigrants and second-generation individuals (Statistics Canada, 2018; Borgen et al., 2021).

Considering the function and focus of this theoretical framework, intersectionality theory has strong connection to outcomes and future causal layers such as *Increased Self-Awareness*, *Increased Self-Confidence*, *Racial Equity and Inclusion Strategies*, *Intercultural Skills*, and *Relational/Youth-Centric Approach*. Specifically, the reasoning and rationale for the inclusion of this theory are its ability to help career development professionals understand their own place of privilege (interpersonal), the importance of systems thinking and recognition of systems of oppression, increased awareness in youth, and CDPs of systemic forces of oppression related to employment for individuals with various intersecting identities (individual, interpersonal, and institutional), and finally, its contribution to intercultural humility (individual, interpersonal). It should be noted that I (doctoral student) have multiple privileged identities (cis-gendered man, straight, white, educated), and that despite best efforts, this may contribute to gaps in understanding of the depth and nuance of this theory. Despite this, the inclusion and importance of intersectionality theory for this theoretical futures-oriented framework is paramount as it provides career development professionals a frame to, "grapple with more complicated questions of how and why differences exist and how larger social structures influence supposed group level differences" (Buchanan et al., 2020, p. 235). The purpose of this personal location statement is not to alleviate the responsibility of the author or any individual to understand their privilege and power, but to acknowledge a lack of lived experience and to endeavor to acknowledge the importance of this theory despite the challenge of articulating its full breadth and depth. The first

point of rationale for its inclusion in this framework is the relevance of intersectionality theory to support career development professionals' awareness of their own personal privileges and how this contributes to their ability to be youth-centric and relational (interpersonal and institutional layers).

Youth CDPs must intentionally consider and engage in expanding their self-awareness of their own privilege and consider how this informs and shapes the services they offer and their approach (Wright & Chan, 2022). Understanding places of personal privilege also contributes to youth CDPs' understanding of the possible power dynamics that could (and do) exist between themselves and the youth they seek to serve (Buchanan et al., 2020). Villa-Nicholas (2018) clearly wrote that:

Race, racism, gender, sexuality, disability, class, and citizenship status are lived and reproduced not only structurally and institutionally, but experienced on a daily basis. Those who experience these intersectional identities daily often see systems of discrimination and bias visibly. Those who do not experience these identities or intersections may not see the visibility of oppression, because their own identity and world view tells them otherwise (p. 124).

This is a long quote, but its use is important, as it emphasizes the challenge for CDPs to understand and perceive possible barriers for youth with multiple intersecting identities simply based on a lack of lived experience. Intersectionality provides CDPs with a theoretical lens to support their awareness of the unique identities that inform individual youths' experiences and the way that this informs youths' approach to and perspective on the workforce and educational spaces (Lindstrom et al., 2019). Adopting an intersectional perspective supports CDPs to understand that individual experiences are shaped by complex social structures, which are described by Cho et al. (2013) as, "fluid and changing, always in the process of creating and

being created by dynamics of power—emphasizes what intersectionality does rather than what intersectionality is” (p. 795). It is recognizing this and coupled with an increased understanding of one's own power and privilege that career development professionals can better support youth. Wright and Chan (2022) elucidate that adults who have multiple ‘privileged identities’ may not understand the support and resources (access to internet, a meal) needed by individuals with less privileged identities (p. 4). Understanding one’s own privilege is truly informed by a greater awareness of the larger systems that have established and contributed to said privilege; this is the second point of validation for the inclusion of this theory.

Systems of oppression were and are intentionally created (and maintained) to hinder and diminish specific populations’ ability to pursue meaningful life and employment. While there has been some social reform, the histories of these systems and ongoing perpetuation continue to shape youth with diverse intersecting identities (Ziebell et al., 2019). Whether based on cultural background, gender, sexual orientation, or socioeconomic class, the ongoing influence of systemic oppression is very true (Rule et al., 2016). Intersectionality theory supports increased awareness and understanding within the career development profession and youth themselves, of the systems of oppression and power that shape both career opportunities (Borgen et al., 2021) and the very career aspirations of young people (Jiang et al., 2024). The usefulness of adopting a systems perspective contributes to CDPs understanding the larger employment ecosystem, which can help support insightful and directed programming. McMahon and Patton (2018) emphasized that systems thinking (causal mechanism) is reflected in many historical and contemporary career development theories, such as Super’s (1990) life span theory, Vondracek et al.’s (1986) developmental contextual model of career development, career construction theory (Savickas, 2013), and career action theory (Young et al., 2011). Intersectionality theory supports youth and CDPs to engage in systems thinking and grow in sensitivity and awareness of systems of

oppression, and the implications these have on employment. The third rationale for demonstrating the validity of this theory is how intersectional theory helps to frame and approach the well-established factor of the high level of influence that family of origin and context have on youth career aspirations (Park-Taylor & Vargas, 2012).

Often, individuals' perspectives (positive or negative) on intersecting identities are shaped and informed by larger dominant social structures (Kang et al., 2015). While it is important to emphasize that individuals have agency to shape their own understanding and perspectives, following Archer's (2007) understanding of agency, while there is individual agency, there are also large social structure and forces which may push against an individual's agency. Intersectionality theory helps understand an individual's experience by surfacing and recognizing how individuals' various identities intersect and interact with the influence and power of complex structures (Cho et al., 2013; Collins & Bildge, 2020). For example, Hartung et al.'s (2005) research highlighted that, "Children's social class awareness influences their comprehension of the world-of-work such that they develop beliefs about appropriate jobs as being those that match their perceived social status" (p. 386). Again, it is important to emphasize that individuals have agency; however, for both CDPs and youth, understanding the possible influence of systems and context on their career aspirations cannot be ignored. Ziebell et al., (2019) also emphasize this in their research where they identified that, when working with adolescent of colour, career development professionals must understand how, "anticipation of racism may undermine students self-efficacy beliefs and outcome expectations" (p. 596). They went on to highlight the importance of CDPs to help make these beliefs clear and explicit, and then to support and encourage students to foster a more positive career perspective.

Intersectionality theory supports this causal mechanism and highlights the importance for youth CDPs to be intentional in providing examples and resources (outcome) that expose individuals to

a diverse assortment of career opportunities and help deconstruct oppressive narratives (Wright & Chan, 2022). Intersectionality theory can help illuminate the systems of power and oppression that have shaped individuals' experiences, which can ultimately give language to young people to support their own self-advocacy (Praskova et al., 2015). This increased awareness of systems and their influence on personal experience can further contribute to youth developing career identities by exploring their interests, skills, and values with an understanding of how they may have been or are being shaped by social expectations, cultural norms, and systemic barriers (Perry & Vance, 2010). Nora et al., (2012) affirmed the importance of understanding individuals' uniqueness and the importance of developing strategies which, "highlight each client's uniqueness, avoiding traditional assessment approaches, and focusing on a high quality of professional interaction" (p. 253). This final element demonstrating the rationale for intersectionality theory within the framework is how it contributes to the ability of youth and career development professionals to grow in their understanding of others and grow in their intercultural humility.

The final element of intersectionality theory, which affirms its alignment and usefulness in this theoretical futures-oriented framework, is its ability to shape the intercultural perspective and skills of both career development professionals and youth. The term cultural humility, which emerged from health professions in the mid-1990s, provides an alternative to the term cultural competence and entails a lifelong process of commitment to self-reflection and analysis (Buchanan et al., 2020). It was developed as a critique of the term cultural competence, namely, the concept that one can never be competent in culture. The key to this is the concept of humility. In their edited book, Worthington, Davis, and Hook (2017) considered the theory, research, and practice of humility and emphasized three core aspects: accurate awareness of self (including limitations), honesty in self-presentation, and orientation to others rather than to self (p. 4).

Intersectionality theory holds a latent causal force to support both CDPs and youth in growing their cultural humility, which is directly connected to several outcomes and future contextual layers. The term intersectional cultural humility is growing in popularity and represents the development of, “epistemological stances that reflect the more complicated ways lived experiences vary based on the many identities individuals hold and seek solutions that are adaptable to these variations” (Buchanan et al., 2020, p. 238). The perspective and competency of intersectoral cultural humility is essential for young people as they prepare to enter the workforce, as it supports their ability to work with others of differing identities. It contributes to the understanding that as society shifts and changes, the experiences of various identities will also change (Villa-Nicholas, 2018). This, in turn, supports their intercultural skills and soft skills, such as the ability to work collaboratively with others, both of which are directly connected to identified outcomes and future contextual layers (Kivunja, 2015).

In conclusion, the intersectionality theory has significant relevance and applicability to future contextual layers and the desired outcomes identified in this research. It provides a theoretical framework to support career development professionals to increase their awareness of their own power and privilege (interpersonal); their understanding of systems (infrastructural); it helps to illuminate systems of oppression supporting both career development professionals and youth to increase their awareness of their influence (individual, institutional, infrastructural); and finally, supports the important capacity of intersectional cultural humility (individual, interpersonal, and institutional). Intersectionality theory supports both career development professionals and youth to adopt a systems perspective informed by complexity theory, which, while not resolving any of the systems of oppression or barriers that the students may face (Zaami & Madibbo, 2021), does equip a level of understanding that can support more intentional program design or self-awareness on behalf of the youth. As noted, I come to intersectional

theory as an individual with highly privileged identities, but I am striving with humility to deconstruct and better understand my privileges and how to contribute to the naming and dismantling of oppressive systems. The following last and final theory that shapes this theoretical futures-oriented framework is Possible Selves Theory.

Possible Selves Theory

The final theory that completes this theoretical futures-oriented framework is Possible Selves Theory. Markus and Nurius (1986), who first developed this theory situated it within self-concept and self-knowledge research, however, its uniqueness is its explicit focus on how individuals think about their potential and future. They write: “Possible selves are the ideal selves that we would very much like to become. They are also the selves we could become, and the selves we are afraid of becoming” (p. 954). Markus and Nurius (1986) further describe various ‘types’ of possible selves, highlighting the hoped-for selves, expected selves, and feared selves (Park-Taylor & Vargas, 2012). Their initial work has been expanded by various authors such as Meara et al. (1995), Day, Chalk, and Phelps (1995), Ibarra (1999), and Oyserman and Markus (1990). It has been applied in various ways in the field of career development (Strauss et al., 2012; Pizzolato, 2007). Possible Selves Theory is a cognitive approach to self-concept and, while acknowledging the influence of sociocultural and historical contexts, emphasizes that possible selves are informed by self-schemas, which are affective-cognitive structures constructed by individuals’ past experiences (Markus & Nutius, 1986). This theory is particularly relevant to this research and the developmental stage of adolescence, which is identified by career development and life-span theorists (Gottfredson, 1996; Super et al., 1996) as an integral time for, “the formation of future-based images of the self, which depict hopes and dreams in the domain of work” (Pisarik & Shoffner, 2009, p. 306). As noted, Possible Selves Theory has been leveraged for career development purposes, and Gee et al. (2021) emphasize that it engages

critical aspects of identity formation, including adolescents' imagined occupational selves. It also acknowledges (like intersectionality theory and SCCT), that possible selves are shaped and informed by larger social systems, structures, and sociocultural contexts (Park-Taylor & Vargas, 2012; Yowell, 2002). This means that Possible Selves Theory supports cognitive futures-oriented clarity to the values, hopes, expectations, and fears of individuals, providing valuable insights into how youths may perceive themselves (Pisarik & Shoffner, 2009). This refers to similar sentiments within Intersectionality Theory, where the influence of socioeconomic and cultural background have on individuals 'hoped-for-selves' (Yowell, 2002) is well established. This theory holds relevance to all layers of Pawsons 4I's and various identified future contextual layers, one being the importance of self-directed learning, and outcomes such as career exploration, understanding of training and education options, and increased self-awareness. The specific elements of this theory that demonstrate and validate its inclusion in this framework are the concept of work possible self, the contribution toward motivation and hope, and its inherent causal ability to support youth's resiliency and development of complex selves. The focus on Possible Selves Theory beginning with the unique concept of the work possible self and its relevance to this research.

The term work possible self (WPS) was used by Pisarik and Shoffner (2009) but was first introduced by Meara et al. (1995) as 'occupational possible self.' Strauss et al., (2012) and Taber and Blankemeyer (2015) use the term 'future work self', however, and while there are differences in how it is applied, conceptually there are similarities, as WPS represents a more specific and focused hoped for possible self, directly related to the domain of work (Strauss et al. 2012). Different scholars approach the application of this slightly differently; however, for the purpose of this research, the concept demonstrates the usefulness and validity of this theory. WPS can support imaginative and hoped-for possible selves, but as they are related to work, the

possible selves are more ‘realistic selves’ (Strauss et al., 2012). WPS supports CDPs to engage with youth (interpersonal) to help surface or connect their hopes, skills, and aspirations to work (casual mechanisms). Pisarik and Shoffner (2009) identify two possible work selves, these being ‘hoped-for work selves’ and ‘expected work selves,’ which are both useful and important to consider based on the identified outcomes and future contextual layers. With the *Rapid Rate of Change* being a prime contextual factor in the future, balancing the two possible selves is important. As noted above, Possible Selves Theory supports individuals in expanding their concept of possible selves outside of possible restrictions put in place by social structures and bias informed by their socioeconomic and cultural context (Yowell, 2002). Historically (and some current) career development theories have assumed that individuals have equal opportunities and resources to prepare for work (access to education, stable home life, etc.), and that this allows their work to align with their hopes and values, resulting in a meaningful career (Pisarik & Shoffner, 2009). This assumption does not represent the lived experiences of many individuals engaged in career development services (Perry & Vance, 2010; Zaami & Madibbo, 2021). Possible Selves Theory supports CDPs to support youth by expanding their ability to imagine more complex and hopeful work selves (outcome of *Exposure to Diverse Career Options*). Plainly stated by Strauss et al. (2012), this theory has the potential to, “Stretch individuals’ aspirations and broaden their creative thinking about future possibilities, which better equips them to proactively shape their career” (p. 581). This ability also relates directly to the future contextual layers of anxiety about career options and finances, supporting youth to image hoped for selves beyond their current anxieties or concerns.

The nuanced dynamic between hoped-for works selves being coupled with ‘expected work selves,’ ensures that there is a certain level of ‘reasonableness’ when considering possible futures, further validating the rationale of including this theory. This means that while CDPs

support youth to be hopeful, to expand their perspective of possible work selves (casual mechanism), this expansion is also done with an understanding of both the process to achieve this (outcome) and consideration of the labour market (infrastructural layer). The importance of understanding both hoped-for and expected work selves is the possibility of future dissonance and discrepancy, which leads to poor mental health and negative well-being (Pisarik & Shoffner, 2009). An important task of CDPs when considering WPS is to support young people in narrowing the distance between their expectations and hopes (Park-Taylor & Vargas, 2012). Taber and Blankemeyer (2015) highlighted three processes that support this. The first is understanding the discrepancy between current, hoped-for, and expected selves, which is built upon by CDP's supporting youth to explore these hoped-for selves and how they align with youth's values, followed by a process of youth identifying possible constraints, barriers, and possible lack of skills to pursue the hoped-for self (p. 21). This process can support youth in developing an internal motivation that is both hopeful and grounded in awareness, which represents a significant causal force to support outcomes such as *Career Exploration, Exposure to Relevant Resources, Understanding of Training and Education Options, and Insights into Personal Passions*. The Possible Selves Theory contributes to supporting motivation is the second element of this theory, which demonstrates its value in this theoretical framework.

Consistent and prominent within the possible selves literature is its contribution to supporting individuals in goal setting and motivation. Oyserman and Markus (1990) emphasized that possible selves are, "motivational resources that individuals can use in the control and direction of their own actions" (p. 122). The importance of internal motivation (causal mechanism) is highly relevant to various aspects of future contextual layers and outcomes, as it can support youth to engage in proactive career development activities in pursuit of employment (Taber & Blankemeyer, 2015), but can also continue to support youth once entering the

workforce (lifelong learning). An important aspect of this is goal setting, which can help the incremental pursuit of hoped-for WPS. There are many different approaches to goal setting; however, for the purpose of this research, motivation is understood as being capable of being developed and formed around hoped-for WPS, and goal setting provided by CDPs is a useful and important activity. Goal setting is also informed by awareness of the expected WPS and can therefore support individuals to move toward their future, seeing steps of success along the way, which can support self-worth and enhancement goals (Oyserman et al., 2004). The complexity for CDPs in supporting youth motivation and goal setting, which is informed by hoped-for WPS, is the importance of adopting and providing mentorship and relational support (Park-Taylor & Vargas, 2012). Meara et al. (1995) identified that opportunities to watch and learn from mentors or role models can provide a meaningful scaffolded learning experience for youth as they move into new roles and career responsibilities (Rossiter, 2009). Additionally, Park-Taylor and Vargas (2012) provide evidence suggesting that lack of support results in barriers to youths' understanding of how to achieve possible selves and their hoped-for WPS (p. 249). This highlights the importance of interpersonal influence in any future contextual layer and the importance of CDPs engaging with youth in a youth-centric relational approach (Pizzolato, 2007). CDPs fostering awareness of WPS (causal mechanism) can provide youth with a motivating image of a possible future (outcome), which can help them overcome barriers and challenges that previously, without this image, may have halted them. Strauss et al., (2012) emphasize that this isn't about career commitment, but about 'career identity' which is not distinct to specific jobs or professions (p. 583). This alludes to the concept above of WPS, which emphasizes that hoped-for selves are shaped by critically reflecting and considering personal values and aspirations (casual mechanism). This provides CDPs with a 'thick' contextual understanding of youth (Perry & Vance, 2010) and represents a more 'complex' image of WPS,

which can foster greater resiliency in youth. Resiliency and complex selves are the final elements of Possible Selves Theory, which demonstrates its relevance and applicability to this theoretical futures-oriented framework.

The increasingly precarious and tumultuous nature of employment (Taber & Blankemeyer, 2015) is the future contextual layer that firmly establishes the validity and importance of this theory. As identified, Possible Selves Theory supports CDPs to help youth explore and understand the distinctions between various possible selves (hopes, expectations, and fears) (Yowell, 2002). Through this process, youths can increase their self-awareness and develop a more holistic and complex understanding of their possible selves. An important element of this understanding is that possible selves are fluid, iterative, developmentally situated, and highly contextually informed (Park-Taylor & Vargas, 2012). Possible selves theory supports CDPs in understanding that images of possible selves are developed at a given time and are influenced by their previous experiences, sociocultural context, and current experiences (Rossiter, 2009; Markus & Nurius, 1986). The importance of this complex understanding is that it supports youth in navigating career disappointment, setbacks, and transitions (Ibarra, 2003; Strauss et al., 2012). Possible Selves Theory holds latent causal capacity to support youth in developing a more complex understanding of their WPS, supporting self-regulation and internal motivation (Yowell, 2002), which, while not resulting in rigid career commitment, helps develop a career orientation that can negate career indecision and unstable career goals (Ibarra, 2003; Ginevra et al., 2016). Pizzolato's (2007) research affirmed this, finding that Possible Selves Theory supports young adults in better understanding and balancing their hopes (hoped-for possible self) and fears (feared self) when facing threats to their career. Understanding and awareness, along with the support and guidance of CDP's, mitigate the possible overwhelming feelings of despair and uncertainty faced by youth. Possible Selves Theory supports individuals

to hold meaningful perspectives of possibilities and internal motivation, as it provides a framework which can reveal according to Ibarra (2003):

That we all carry around, in our hearts and minds, a whole cast of characters, the selves we hope to become, think we should become, or even fear becoming in the future. During a career transition, our possible selves spur us to find role models whom we'd like to become (and whom we'd like to avoid becoming) and help us to benchmark our progress toward those ideals (p. 37).

The future context of a *Rapidly Changing Workforce*, coupled with *Increased Mental Health Challenges*, can contribute to a perspective (rightly so) of fear and uncertainty in youth when considering future employment (Ginevra et al., 2016). This ultimately supports youth in navigating change and uncertainty with greater resilience.

In conclusion, Possible Selves Theory represents a robust and important middle-range theory that has direct implications for various identified outcomes and future contextual layers. Markus and Nurius (1986) defined possible selves as including three categories: what a person hopes to become (hoped-for selves), what they believe they could realistically become (expected selves), and what they fear becoming (feared selves). The development of these possible selves is highly personal, contextual, and motivational (Park-Taylor & Vargas, 2012). The three elements highlighted that demonstrate the value and validity of this theory for the framework are the concept of work possible selves (WPS), the role of possible selves in fostering motivation and hope, and their causal capacity to support youth resilience and the development of complex selves. This theory supports a critical realist understanding of the interplay between structure and agency, acknowledging how external conditions such as education, economic opportunities, and social capital shape individual goal-setting and career development. This theory strengthens the

theoretical framework, as it contributes to all four contextual layers by supporting youths' ability to examine and envision their futures and understand how these visions interact with systemic realities, shaping their pathways toward meaningful and sustainable careers (Oyserman et al., 2004). This concludes the review of the rationale for, and demonstrates the validity of, each of the five identified theories that will now be integrated in a way that is hoped to be applicable by CDPs.

Integrated Approach to Applying Framework

This chapter provides an in-depth analysis of the five theories which were identified as relevant and applicable middle-range theories to help the proposed futures-oriented theoretical framework for youth career development. These theories were identified through an emergent and iterative research process but were ultimately shaped and directed by youth-focused CDPs' perspectives. Grounded in rigorous research methods and design, it presents a generalizable framework to support program design and enhancement specifically for CDPs working with Gen Z in the year 2030. Individually, middle-range theory could support career development organizations to foster environments and contribute resources that may contribute to various causal mechanisms being enacted in future contexts, increasing the probability of positive outcomes. However, the intention of this framework is that theories are integrated, mutually contributive, and reciprocal to one another. For example, focusing solely on CDL may equip youth with the skills to navigate digital spaces and recognize biases in algorithms (Kim et al., 2023), but without the motivational structures of Possible Selves Theory, they may struggle to translate that knowledge into actionable career decisions. Likewise, the psychological scaffolding provided by BPNT ensures that youth feel a sense of autonomy, competence, and relatedness in their career exploration (Fantinelli et al., 2023); however, without EQ, they may lack the self-awareness and interpersonal skills necessary for career adaptability in hybrid and

digital work environments (Klein et al., 2024). Intersectionality theory ensures that these interventions remain equity-informed, recognizing how systemic barriers shape access to opportunities, career confidence, and workforce attachment for individuals with diverse and intersecting identities (Buchanan et al., 2020). Each of these theories functions as an interlocking causal force that can support youth CDPs in designing interventions that are holistic, future-oriented, and responsive to the rapidly changing labor market.

The dynamic and complex nature of career development has been highlighted throughout this research (McMahon & Patton, 2018), which further underscores that no single theory alone is sufficient to address the complexity of youth career development in the face of emerging AI-driven economies, hybrid work models, and ongoing labor market disruptions (Gupta et al., 2020; Kluge et al., 2019; Chinmai et al., 2021). Instead, the framework posits that these middle-range theories, when applied in concert, provide a comprehensive, multilayered understanding of how career development outcomes can be meaningfully shaped within future contextual layers. This approach resembles similar frameworks, such as Systems Theory Framework (STF; McMahon & Patton, 1995) and Career Human Agency Theory (CHAT; Chen & Hong, 2020); however, it is unique in its future-orientation. The application of this framework allows CDPs to move beyond rigid or prescriptive program models, enabling them to design flexible, proactive, and theory-informed interventions and programs for possible future contextual layers by 2030. The precarious nature of both present and future contexts means that these future contextual layers are changing, meaning that this framework is inherently unfinished and ever evolving. As circumstances shift, so too must the theories and frameworks applied to support positive outcomes. This is important, as these theories account for and acknowledge the agency of both youth participants and CDPs, and when considering program design, represent theories that are relevant and applicable to various unique contextual factors and layers of career development

organizations. The application and use of this framework presents an exciting opportunity for CDPs to assess their current programs for applicability in future contexts and to support innovative program design. This is discussed further in the final chapter and is the focus of the next steps in this broader research program.

Conclusion

This chapter represents the summation of all iterative phases of this research design. The resulting Futures-Oriented Theoretical Framework for Youth Career Development is composed of five theories. These were Critical Digital Literacy; Basic Psychological Needs Theory, Emotional Intelligence Theory, Intersectionality Theory, and Possible Selves Theory. Being informed and shaped by the voices of youth career development professionals working within the field in Nova Scotia, Canada, this framework is meant to support CDPs' engagement in futures-oriented career development programs and intervention design. A futures orientation, focused on causal mechanisms from a CR perspective, aims to support them in engaging in proactive planning, instead of responsive design or rigid implementation of past practices. Within this chapter, a brief overview of several relevant and useful career development theories was offered, and this was followed by a review of the five selected theories. Within these reviews, areas of alignment with future contextual layers, outcomes, and possible causal mechanisms have been highlighted. The intention of this was to demonstrate the rationale and provide evidence for the validity of the theory selection and combination. The final element of this chapter is a review of the integrated nature of this framework, establishing its mutuality and uniqueness, as the five theories applied individually do not have the same level of possible causal force as when applied together. The next chapter presents the conclusion and provides an overview of the entirety of this research, along with areas of weakness and possible future research.

CHAPTER 8: CONCLUSION

All futures work is imaginative. A key tenet of futures studies (FS) is that there is not one predetermined future to be predicted but, instead, images of futures are the ‘realm’ of ideation (Candy & Dunagan, 2017). Donnelly and Montuori (2020) established the need for increased creativity in futures work. This creativity encourages more imaginative and hopeful images that are, “systemic, relational, contextual, and focused on creating mutually beneficial win-win relations” (p. 12-13). As the rate of change across all sectors and industries rapidly increases, coupled with the sense of ‘instability’ which has characterized the year 2025, creative images of the future are necessary to counteract the typically negative narratives and outlooks found in popular- and news-media. This study attempted to provide an imaginative, evidence-based framework that can support youth career development professionals (CDPs) to consider what career development could look like in the year 2030. The ability of CDPs to offer well-designed, contextually relevant, and responsive programs and training is integral to the success of youth participation, and the Nova Scotia workforce writ large. However, as noted, with the rate and scale of change, CDPs and other community-based socio-psychological educational spaces often struggle to adapt to their programs, services, and interventions (Eiraldi et al., 2015). While businesses and organizations dedicate significant resources to understanding consumer behavior, market shifts, and future workforce needs, limited attention has been paid to the future of career development itself. As framed in this study, career development refers to structured programs and interventions designed by community-based professionals that support youth in acquiring the competencies necessary for meaningful workforce attachment and integration. Family of origin has the most significant influence on career development (Alimova, 2024); however, the focus of this research was on the services and interventions offered by career development community-based organizations.

This is the context and challenge in which this research situated itself, leading to the primary question of: *What theories and education models, surfaced through literature and community voice, might best be considered to support positive outcomes from youth career development in 2030?* To answer this question, an critical realist-informed engaged scholar approach was used to support the emergent and complex nature of this study. This study leverages a realist-informed paradigm, specifically Pawson and Tilly's (1997) realist evaluation (RE) approach, and its context-mechanism-outcome (CMO) configuration. This philosophical framing supports the examination of career development interventions within the anticipated future context of 2030. Leveraging this framework's supplementary questions helped inform the research design.

- *What are the perceived desired outcomes of career education held by career development professionals and Generation Z industry stakeholders?*
- *What important trends and emerging considerations relevant to the educational design, creation, and implementation of meaningful youth career interventions/programs are anticipated in the next 5-10 years?*
- *What middle-range theories, models, and approaches could help support positive career education outcomes considering the future context shaped by the identified trends and emerging considerations?*

These questions were engaged with across the nine phases of this study, ultimately resulting in the development of a Futures-Oriented Theoretical Framework for Informing Youth Employment Practices. This research aimed to advance the practice of youth career development in Nova Scotia by surfacing a futures-oriented, theoretically robust, and empirically grounded framework that supports CDP's program and intervention design in the year 2030. The remaining portion of this final chapter provides a summary of the findings, contributions

(academic, methodological, and practical) of this research, recommendations (CDP's and policy), areas of weakness in the research, and areas of future research. To ground conclusions, the multistep iterative design and results are first summarized.

Summary of Findings

Many theories and models focus on supporting youth career development (Howard & Ferrari, 2022); however, the uniqueness of this futures-oriented theoretical framework is its generalizability. Instead of specific causal mechanisms or highly contextual limitations, it provides an integrated framework of middle-range theories that supports a broad set of outcomes and accounts for various future contextual layers. For seasoned CDPs or career development scholars, the resulting framework may not be perceived as revolutionary or surprising, however, the unique approach used and the relevance of this integrated framework to support career development program design in 2030 is novel and is demonstrated in the contributions section below. This dissertation is structured across eight chapters, each contributing to a comprehensive exploration of the focus of inquiry and the process leading to the framework. Chapter One establishes the foundation of this work by articulating the research problem, justifying its significance, and presenting overarching research questions. It also provides a roadmap for the structure of this study. In Chapter Two, I located myself within the study, articulating the philosophical and epistemological assumptions that inform the methodological approach. Engaged scholarship and critical realism were reviewed, with an emphasis on clarifying the ontological and epistemological commitments that shaped the research design (Wilson & McCormack, 2006). Chapter Three provided an extensive literature review, synthesizing scholarship on career development, the future of work, and the future of education. This review situated this research within existing academic discourse and established the complexity of career development. Chapter Four details the methodological framework, articulating the study's

research design, methodological influences, and rationale for the various research methods selected.

Chapter Four also demonstrates how methodological rigor and coherence were prioritized to enhance the validity of the research. A vital part of this chapter was articulating the nature of how CR was applied, specifically to futures studies methods. There were four key areas of influence. The first was Pawson's (2006) four I's of context (individual, interpersonal, institutional, and infrastructural). This approach to understanding the context informed the analysis and understanding of the possible future contextual layers influencing career development by 2030, ensuring a nuanced understanding of how mechanisms operate within different contexts. The second key area was the use of abductive and retroductive reasoning. Being highly prominent within realist research, this approach to reasoning enabled deeper interrogation of identified trends beyond surface-level patterns (Bibri, 2020). The third and fourth were connected and related to the use of an adapted CMO configuration. This is important because, while contextual layers and outcomes were identified, there was no explicit list of isolated mechanisms as independent variables. Instead, this research adopted a realist-informed approach that leveraged middle-range theories (fourth area) to offer transferable explanatory models for future career development interventions, balancing conceptual clarity with the complexity of future uncertainties. Chapter Five outlines the data collection and analytical strategies employed in the study, explicitly linking them to the methodological framework. The primary methods for data collection were an environmental scan, a modified participatory Delphi panel (three online surveys), and an adapted futures-oriented rapid realist review. To synthesize and review the resulting data, a combination of thematic and descriptive statistical analyses was applied to the primary data collected. This analysis was further complemented by abductive and retroductive reasoning, which are foundational within the critical realist paradigm (Robinson,

2022). Chapter Six reports the findings, illustrating how the data inform the study's key insights and contribute to meeting the research objectives. Chapter Seven represents the culmination of the dissertation and the Futures-Oriented Theoretical Framework for Youth Career Development.

The resulting framework is composed of five middle-range theories, which are proposed to be uniquely relevant to the future context of 2030 and provide a futures-oriented framework which can support youth CDPs to anticipate and intentionally consider how and what services, interventions, and programs to offer Gen Z youth (and older Generation Alpha youth) in the near-medium future (2030). The five theories are Critical Digital Literacy (Gouseti et al., 2022), Basic Psychological Needs Theory (BPNT; Deci & Ryan, 2000, 2017), Emotional Intelligence Theory (EQ; Mayer & Salovey, 1997), Intersectionality Theory (Crenshaw, 1989); and Possible Selves Theory (Markus & Nurius, 1986). As highlighted above, these theories were identified through the iterative and complementary data-gathering process, while remaining aligned and informed by the broader conceptual framework. They provide the most value by being considered in concert within specific contexts by specific teams to leverage local agency to create what to do next. The intention of this is to move away from rigid implementation and problem-response orientations to program implementation toward an approach that meets the psychological needs of both CDPs and youth.

Contributions to Knowledge

The adoption of an engaged scholar approach had a strong influence on the emphasis and intention of this research. Therefore, an emphasis of the research was to make contributions outside of the requirements of a doctoral degree. The three core areas of contribution are practical, academic, and methodological. Practical contributions refer to ways in which the research findings can be applied directly by CDPs and their organizations, academic contributions refer to the contribution of this research to gaps in the academic literature, and

methodological contributions refer to the novel research design. Striving for transparent reporting of continued alignment with the philosophical paradigm of this research, the practical contribution is highlighted first, as it remains the primary intention and focus.

The practical contributions of this research are illustrated in this document and are directly informed by the intention of the research. As stated, the resulting futures-oriented framework represents a highly generalizable evidence-based framework that can support CDPs in developing interventions and program design with a deeper understanding of possible future contextual layers, resulting in services and programs supporting the ‘firing’ of mechanisms, resulting in increased probabilities of positive career development outcomes for Generation Z participants. A practical example of the application of this framework is presented in this example. Considering the future contextual layers of *AI’s Impact on the Workforce* and the *Rapidly Evolving Labor Market*, CDP’s applying this framework could develop an AI-Enhanced Job Search & Resume Development Program. This program would leverage Critical Digital Literacy to shape the content, with a focus on equipping youth participants to critically engage with AI technology in resume writing by understanding its advantages (e.g., tailoring applications for specific jobs) while remaining critical of algorithmic biases, errors, and ethical concerns. The design of the program would be shaped by BPNT and scaffold the way in which youth are introduced to AI technology and its possible uses (fostering autonomy and competence). Finally, through the lens of Possible Selves Theory and Intersectionality theory, CDPs would be aware of possible negative implications of AI technology and develop content and activities to help youth critically consider AI biases, personal implications of using AI technology, and the negative future of cognitive offloading (Gerlich, 2025). This type of content would incorporate discussions around self-awareness, professional identity, and boundaries

regarding AI dependence (EQ). Table 14 articulates a highly simplified CMO configuration as demonstrated in this example.

Table 14

Simplified CMO Configuration Example

Context	Mechanism & Middle-range Theory	Outcome
Youth Centric Approach (Individual, Interpersonal & Institutional)	Critical AI literacy & bias recognition (CDL, Intersectionality Theory)	Exposure to relevant resources Increased Confidence
Rapidly Changing Labour Market (Infrastructural)	Scaffolded learning fostering autonomy and competence (BPNT)	Increased Self-Awareness Connection with Trusted Adults
AI Impact on Labour Market (Individual, Infrastructural)	Futures literacy and reflective capacity-building (Possible Selves, EQ)	

This is a highly simplified CMO table and is meant to demonstrate how the theoretical framework continues to align with a critical realist perspective. It also demonstrates that the framework can be applied even more specifically based on specific youth populations, organizational contexts, staff, and the unique career development needs of the local community. The second area of contribution is broad academic discourse.

The nature of any futures research is that, as promising and innovative as it was when it emerged, it can quickly become dated and obsolete, particularly during this period of rapid transition. Nevertheless, at the point of writing this document, this research represents a unique

contribution to the current academic discourse on career development. As noted, while there are many models of career development, this framework presents a highly transferable and applicable framework that anticipates possible contextual factors instead of reacting to them. The ability to intentionally reflect on, consider, and anticipate possible changes is a privilege of academic research (Ali & Herzog, 2018). Again, the identified future contextual layers and outcomes are perhaps not revolutionary to CDP and academics in the career development field, but the framework represents a unique and useful contribution to academic literature. The combination and integration of these five theories reflects a useful contribution within the field, in addition to modelling the value of engaging in futures-oriented research. This was possible based on the unique application of futures methods within a critical realist perspective and the use of the adapted CMO configuration. This unique research design and methodological approach is the final contribution of this study.

As noted, the findings and proposed framework are useful and compelling. However, the methodological contribution of this study was a surprising and highly intriguing development. The use of Pawson's (2006) 4I's to help consider the deep complexity of the future context of career development, along with the identified outcomes, to identify middle-range theories, is unique. This demonstrates the application and leveraging of the philosophical paradigm of critical realism (CR) in the application of futures research (FR) methods. With limited examples of the use of CR within FS (e.g., Stevenson, 2003; Aligica, 2011; Patomäki, 2015; Boonmavichit & Boossabong, 2022), this is a compelling methodological contribution. Elevating this further, there is even less literature on the application of realist evaluation (RE) in the futuring space. The research approach presented in this dissertation is unique and, as noted in the Areas for Future Research section, warrants further investigation. As articulated in Chapter Three & Four, the ability of CR to probe deeper levels of reality is highly applicable to FS, as it can support

exploratory research while developing evidence-based insights into possible futures through the specific surfacing of theories and causal mechanisms. The unique focus of CR in context makes it highly applicable and adaptable for considering possible future scenarios and weak signals.

The contributions of this study to the three identified areas are worth noting, whether it is a practical tool for CDP's, a source of academic discourse and enlightenment, or a catalyst for a larger, innovative methodological approach. Informed by the engaged scholar approach, it is hoped that this research will ultimately support CDPs' work and enhance their practices. To support this, explicit recommendations based on the findings of this study are provided below.

Recommendations

As Heino and Hautala (2021) assert, "Futures knowledge is critical for developing knowledge-based policies that can guide societies in turbulent and uncertain times" (p. 83). This insight underpins the central aim of the present research, which, as emphasized throughout, sought to generate findings that are not only theoretically robust, but also to provide practical and useful research that can support CDPs navigating complex and shifting landscapes. To achieve this objective, six actionable recommendations are highlighted below. Three were directed toward career development organizations, and three were directed toward government and funding bodies. These recommendations emerged through the research process and were further corroborated by the relevant academic and policy literature. The three recommendations for career development organizations are the adoption of futures literacy, evaluation of the futures-orientation of programs, and importance of career development in educational policy.

Recommendations for Career Development Organization

Adopt Futures Literacy as a Core Professional Competency. Career development organizations should support the cultivation of the ability of CDPs to anticipate, critically engage with, and intentionally consider career trajectories. Professional development that supports

anticipatory, systems-based, and reflective competencies, will support CDPs to become ‘future literate,’ which is defined by Miller (2018) as an individual who has “acquired the skills needed to decide why and how to use their imagination to introduce the non-existent future into the present” (p. 15). Understanding possible futures supports individuals and organizations in making intentional decisions and actions in the present to help shape the future (Polak, 1973). To support this career development, organizations could partner with universities and colleges to co-develop micro-credentials in adaptive leadership and futures thinking. Implementing this recommendation would result in CDPs’ familiarity with FR methods, which would enable them to both image and co-create hopeful, data-informed futures for the clients they serve.

Assess and Evaluate Current Programs and Interventions for their Futures-orientation. The importance of career development organizations to be proactive in the services they provide to individuals because of the rapidly changing labour market and the needs of the individuals they serve was well established in this research. The implications of this, is the recommendation for career development organizations to engage in regular and intentional review/evaluation of existing programs using a futures-oriented curriculum assessment tool (Chen & Hsu, 2020) There are very few examples, of explicit and tangible assessment tools to assess for ‘futures-orientation,’ however, career development organizations can evaluate their current programs to frameworks such as the UNESCO futures literacy framework (Miller, 2018), or Futures Consciousness Scale (Ahvenharju et al., 2021). Kazemier et al.’s (2021) article states that higher educational institutions have a social responsibility to be aware of the increasing complexity and inherent uncertainty faced by their students, and to be a response in supporting students’ learning considering this (p. 1). Program assessment and evaluation can be a struggle to complete for many non-profit organizations at the best of times. However, for career development organizations, as they navigate a rapidly changing context, understanding how their

programs and interventions meet both the present and future needs of the individuals would ensure that they ultimately accomplish their mission and purpose (Ruedy & Clark, 2024).

Advocate for Career Development in Educational Policy. Career development organizations and relevant system partners (CERIC) should engage with relevant government and system partners to advocate for and embed career development within all levels of education. This would require working with educational partners to support the recognition that career development is a lifelong and interdisciplinary area of development and learning that requires age-appropriate, specialized, context-responsive, and supported focus (Savickas & Porfeli, 2012; Demerouti & Bakker, 2023). This demonstrates a futures-orientation, which aligns with pan-national organizations (OECD, ILO, UNESCO) calling for strategic educational policies to address future-of-work disruptions (Organisation for Economic Co-operation and Development, 2021; International Labour Organization, 2021). The result would be the mandated integration of career development within K–12 and post-secondary education curricula. This integration would support educational institutions and career development organizations in proactively supporting students’ long-term career aspirations and adaptability (Vidergor, 2023).

Recommendations for Government and Funding Bodies

Invest in Participatory Foresight Research with Youth. Recognizing that, “Every generation displays a set of unique characteristics, attitudes, and behaviours, more so if they have grown up in a completely transformed era” (Sengupta, 2020, p. 2), funders should prioritize support for emerging research and innovative pilots grounded in participatory and community-based methods. There are many examples of creative and participatory FR approaches (Bell, 2005), and approaches such as youth participatory action research (YPAR), which seeks to provide opportunities for co-construction of knowledge between academic researchers and

community members (Suto et al., 2019; Ismail & Taliep, 2020). YPAR engages and involves relevant populations connected to the focus of inquiry (Dari et al., 2019) while maintaining a high level of rigour and academic integrity. Additionally, arts-based and scenario-based research supports imagination and creativity (Jones, 2023). These types of projects will expand the current paradigm and worldview of current practice and support youth agency and imagination, which would support innovation and are foundational to futures-oriented system change (Facer, 2011; Bourgeois-Bougrine et al., 2024).

Leverage Policy to Promote Intersectoral Collaboration. The current and future contexts in which career development organizations provide meaningful services, as emphasized in this research, are increasingly complex. While the broad challenges faced by youth seeking career development services may not differ from previous generations (skill deficit; workplace bias, etc.), the nature of the challenges are exacerbated by various drivers of change (digitalization; rise of the gig economy; geopolitical tension; polycrisis; high rate of change, etc.) which add a unique depth of complexity and ‘drama.’ As a result, it is important for career development organizations to create interconnected programs and services that integrate service delivery from relevant systems partners (education, social services, justice, health, and the private sector) (Tancred et al., 2024). To support this, funders should develop policies and funding sources that incentivize intersectoral collaboration. This will result in a career development ‘ecosystem’ that will be better able to provide holistic supports (Gazley, 2015).

Adapt Assessment/Evaluative Strategies by Embracing Expanded Notions of Work and Meaning. In response to an evolving labor market and shifting societal values, funders and government bodies should revise and adapt how they assess the efficacy and impact of career development programs. Traditional formative and summative frameworks are no longer adequate to account for the complexity of the current and future labour force, as individuals increasingly

prioritize purpose, autonomy, flexibility, and relational impact over conventional markers of success (Cahill & Dadvand, 2018; Hall & Las Heras, 2010). As career development organizations adapt their programming to reflect these emerging priorities, evaluation strategies must evolve accordingly (Ruedy & Clark, 2023). The Centre for Employment Innovation (CEI) emerged as a catalyst for this type of consideration, as it intentionally fostered innovative program models and adaptive evaluative approaches. However, the discontinuation of CEI due to changes in funding priorities illustrates the precariousness of institutional support for this kind of transformative and futures-facing evaluation. Approaches such as developmental evaluation, contribution analysis, appreciative inquiry, participatory inquiry, social return on investment (SROI), and social impact assessment offer relational, culturally responsive, and decolonizing frameworks. These approaches, along with others, would support government and funding bodies to better engage and support the dynamic, values-driven nature of the modern labour force and support an expanded perspective of employment, considering changing worldviews, values, and demographics.

In conclusion, the recommendations presented here are intended to support the translation and contextualization of this research to various levels of Nova Scotia's career development ecosystem. To further support this, a *research brief* was developed and distributed to participants and relevant career development organizations (Appendix M). While the proposed theoretical framework is oriented toward informing relevant and innovative service designs for 2030, these recommendations are offered with the intention of deeper system-level shifts needed to sustain meaningful change. Their full implications extend well beyond immediate implementation and invite ongoing reflection, dialogue, and contextualized experimentation. They are not offered as definitive solutions but are intended to provoke imagination, support practical adaptation, and contribute to a broader conversation about the future of work and career development in Nova

Scotia and beyond. The areas for future research outlined below are relevant and build upon several of these recommendations; however, before turning to them, it is important to first acknowledge and reflect on the limitations of this study.

Limitations

Consistent with this study's intention to be transparent and rigorous, the observed limitations are acknowledged. Three primary areas of weakness stand out: the relatively limited integration of community voices in shaping the research process, particularly when viewed through the lens of action-based research; the lack of empirical testing of the proposed framework; and the realist-informed nature of the study, which, while methodologically robust, did not fully articulate specific causal mechanisms or refined CMO configurations. These were viewed as the largest and most significant areas of weakness; however, it is negligent to assume that there are no others. For example, a well-established driver of change in education is the decentralization and digitalization of educational spaces (Boatcă et al., 2024). This study focused primarily on career development services performed in person and not explicitly in the digital space. While the framework could be applied to digital career services and is relevant to these broader transformations in personalized and technology-mediated education (Boatcă et al., 2024), it did not explicitly focus on this type of educational engagement. Additional middle-range theories might be needed to better support success in this new context. This is just one area of weakness related to the changing educational and career development approaches. However, for brevity, the three primary areas of weakness listed are the focus of this section.

The limited engagement of CDPs reflects an inherent challenge in bridging theoretical foresight with professional practices. While practitioners provided input and data at multiple points, as noted in chapter four, the lack of co-constructed research design affected further refinement of the theoretical framework. This aligns with comments from Pawson and Tilley

(1997) who write: “Thus on the realistic model, the researcher’s theory is the subject matter of the interview, and the subject (stakeholder) is there to confirm, to falsify and, above all, to refine that theory” (p. 155). This leads to a second weakness: the absence of empirical testing. Simply, the framework remains theoretically grounded and has yet to be tested in applied settings. To validate its relevance and applicability further, the framework will need to be tested in future work that extends beyond the scope of this dissertation. These areas of weakness, while not devaluing the research, demonstrate areas for future work that could strengthen the relevance and usefulness of the findings. Ultimately, next steps in this program of research will focus on further validating and substantiating the framework as a viable and useful tool. The final primary weakness was the nature of the application of CR in this study.

Finally, the realist-informed approach, while offering insight and useful application of the CMO configuration and supporting the development of a highly relevant research design for this complex research phenomenon, as noted in Chapter Four, reflects an area of weakness. The decision to not surface detailed mechanisms or refined CMO configurations but instead focus on middle-range theories (noting embedded causal mechanisms), was intentional. The intention was to ensure the generalization and broad applicability of the framework to various career development contexts. However, the implication of this decision meant that this research did not provide the depth of analysis that a more granular, context-specific realist research project could offer. As Brown et al. (2000) wrote, “Critical realism, as applied in social science, seeks to penetrate surface phenomena and disclose ‘deep’ social structures” (p. 774). It is impossible for researchers to engage fully with all the complexity of context when engaging in CR research; however, the inherent limitation of this study’s use of realism is that it ultimately represents a broad surface-level investigation of causal forces, as the contextual layers and causal mechanisms are quite broad. Critical realism presents a highly robust and complex paradigm

that, being highly explorative and theoretical, can illuminate causal mechanisms and provides a deeper level of explanation regarding the phenomena of focus (Wynn & Williams, 2012). A deeper level of explanation could have emerged if this research was more localized and context-specific; however, as noted, the futures-oriented nature of this research provides an additional layer of complexity. This is a limitation that, to remedy, requires further research. This evokes the question: How can researchers engaging in realist-informed futures research engage deeply in possible future contexts?

These three limitations are related and do reinforce one another in ways that both strengthened and limited this research. It should be stated that these weaknesses exist, not by chance, but because of intentional research design decisions. Following this, three areas highlight opportunities for future inquiry.

Areas for Future Research

This section explores two key areas for future research to enhance the practical and theoretical impact of the proposed futures-oriented framework and the research paradigm that informed it. The first focuses on testing the framework's applicability and effectiveness in guiding CDPs in shaping meaningful career development programs. The second area is the opportunity and need for further research related to the integration of CR and FS.

Further research is necessary to empirically test the usefulness and effectiveness of the proposed futures-oriented theoretical framework. There are two aspects of possible future research topics related to this, the first being specific to the 'user experience' of CDPs engagement with the framework and using it to help develop career development programs. This would require intentional work to design an implementation process for the framework, which would highlight steps to support contextualization and program design as informed by the framework. The second area of related research is to evaluate whether the

programs/interventions designed using this framework worked and, if so, why. This would require the establishment of measurable and desirable outcomes that could be assessed post-intervention and would best be achieved using a standard RE process to illuminate how the framework functions in practice. This would support the development of much more robust and focused CMO configurations, which would further help in understanding which elements of the framework drive meaningful change, in which contexts, and for whom. Ultimately, while this research contributes to a macro-level understanding of future-oriented career development, further work is needed to test, refine, and contextualize its insights for greater practical and theoretical impacts.

The second area proposed for next steps in research is more focused on deeper reflection, consideration, and analysis of the integration of CR within FS. As Wynn and Williams (2012) state, “Critical realism seeks to posit descriptions of reality based on an analysis of the experiences observed and interpreted by the participants, along with other types of data” (p. 793). The methodological framework leveraged in this research was highly relevant and applicable to the inquiry focus; however, as stated above, it remains underutilized in futures research and presents an exciting new area of scholarship. Next steps could focus on refining the application of CR within foresight methodologies, particularly in trend analysis, scenario planning, and strategic foresight, to strengthen theoretical clarity and empirical depth.

Conclusion

In conclusion, this chapter provides a summary of the findings and identifies the contributions, recommendations, limitations, and areas of future research. The process of completing this doctoral research has been one of the most rewarding, challenging, odious, exhilarating, humbling, and centering experiences of my life. This chapter intends to demonstrate both the value and unfinished nature of this larger research program. My natural inquisitiveness

and curiosity as a researcher, who seeks to open and peer into ‘black boxes’ of program design and outcomes (Fernee et al., 2017), resulted in an overly ambitious research question, which ultimately led to the development of a Futures-Oriented Theoretical Framework for Informing Youth Employment Practices. This framework was developed to support CDPs when designing career development programs and interventions for 2030. The resulting framework makes a unique and (hopefully) meaningful contribution to career development scholarship and practice. The resulting theories informing the framework may not surprise seasoned CDPs or academics in the field; however, the focus on the future context and methodological approach provides an organized integration of multiple theories in response to CDPs’ voices. By integrating middle-range theories within a realist-informed paradigm, this framework offers a pragmatic, yet forward-looking tool that career development professionals (CDPs) can use to anticipate, design, and implement interventions that remain adaptable to a range of possible futures. The unique application of critical realism within futures studies, particularly through a realist evaluation framework, is worthy of further exploration in terms of methodological rigor and theoretical depth. As emphasized above, despite the work done within this dissertation, this approach is underdeveloped and has the potential to significantly enhance the ways in which we understand and engage with future-oriented program design.

This research was formed out of real relationships between career development professionals working with youth in the career development system in Nova Scotia and myself. Aligning with the engaged scholar approach, it is important to recognize that the value of this research is formed both by its usefulness and contribution to academic discourse, but more so to CDPs who work, serve, and support youth in Nova Scotia. Foundationally, this research was motivated by a desire to help contribute to improving career development services for youth, ensuring that programs remain responsive, resilient, and forward-thinking in an era of rapid

social, technological, and economic change (Kavanagh et al., 2021; Roser, 2023). This need for continuous change can feel daunting, however, as Bruce Cockburn humbly reminds and pleads with us, "You gotta kick at the darkness till it bleeds daylight" (Cockburn, 1984).

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APPENDICES

Appendix A: Environmental Scan Sources Google Search

Generational Trends

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Appendix B: Final Environmental Scan Trend List

Four domains: Future of Work; Future of Education; Trends within Career Development;

Generational Trends

Trend	Sub Trend
Digital Transformation in Education	Digital Skills & Literacy, AI Integration, Online Learning, Gamification, AR/VR, Assistive Technology, Hybrid/Online Work
Shift to Competency-Based Learning	Personalized Learning, Problem Solving (Project-Based), Life-Long Learning, Soft Skills Development, Competency-Based Education, Bespoke Educational Approach
Equity and Inclusion in Education	Addressing Social Barriers, Racial Equity, Inclusion Strategies, Immigrant & Refugee Support (Language Assistance, Mental Health, Social Capital)
Collaborative and Experiential Learning	Peer Learning, Industry & Parental Collaboration, Career Exploration, Work-Integrated Learning, Caring Adults, Intercultural Skills
Rise of Alternative Education Models	MOOCs, Nano/Micro-Learning, Homeschooling, Private Educational Organizations, Influencer-Led Instruction, Personalized Approach (Intersectionality)
Changing Workplace Expectations	Hybrid Work, Work-Life Balance, Job Flexibility, Leadership Evolution, Managerial Importance, Changing Expectations of Employers
Evolution of Workforce Skills	Remote Work Skills, Adaptability & Flexibility, Creativity, Networking, Soft Skills, Digital Literacy, Problem-Solving, Data/Information Literacy, Importance of Technological/Digital Skills

Integration of Technology & Automation	AI, Automation, VR, Online Collaboration, Job Displacement Risks, Significant Technological Disruption
Economic and Labor Market Shifts	Entry-Level Job Reduction, Skill Economy Growth, Workforce Retirements, Slowing Economic Growth, Economic Crisis, Rapidly Changing Labour Market
Rise of the Gig Economy	Micro-Entrepreneurship, Side Hustles, Flexible Work Arrangements, Entrepreneurship
Intersectoral Collaboration	Industry Partnerships, Employer Engagement, DEI Training, Formal Education Linkages, Importance of Connection to Educational Institutions
Holistic Career Planning	Career Planning, Goal Setting, Youth-Centric & Empowerment-Based Approaches, Support Personal Development, Relational Approach
Workplace Training & Upskilling	Life-Long Learning, On-the-Job Training, Supported Internships, Conflict Mediation Support, Upskilling
Employer Expectations & Workforce Readiness	CSR, Value-Based Work, Employee Mobility, Changing Leadership Models, Importance of DEI, Struggle with Work Readiness
Increasing Career Transitions	Postponed Major Life Events, Unprepared Graduates, Economic Uncertainty Affecting Career Choices, Openness to New Career Paths
Mental Well-Being & Identity Formation	Increased Stress & Anxiety, Social Media Influence, Delayed Adulthood, Self-Realization, Sense of Hope, Motivation, Mental Well- Being & Health

Digital and Social Media Influence	Perspectives on Social Media, Need for Validation, Information Overload, Changing Communication Skills, Decline in Interpersonal Skills, Content Overload
Emerging Workforce Expectations	Financially Aware, Up-Aging, Increased Access to Career Information, Social Justice Orientation, Technologically Embedded Generation
Generational Workforce Dynamics	Shift Toward Purpose-Driven Work, Value-Based Decision-Making, Changing Workplace Culture, Culturally Diverse Generation
Future of Work for New Generations	AI Competency, Remote Work Proficiency, Green Economy Integration, Adaptive Career Paths, Importance of 'Tech Proof' Skills, Importance of Soft Skills, Skills Economy
Globalization & Workforce Shifts	Increased Immigration Rates, Globalization

Appendix C: Explore Survey Trend List

Identified Trend/Change	Quotes	Working Definition
Increased Interest in Trades	<p>"Youth are increasingly curious about trades and more hands-on type work.";</p> <p>"More youth choosing trades as careers."</p>	<p>Growing attention and enrollment in vocational training and trade schools as viable career paths.</p>
Anxiety Changing Labor Market	<p>"Nervous about: change in labour market in regard to full-time employment.";</p> <p>"How technology will shape the ever-changing workforce."</p>	<p>Rising concerns about job stability and future employment opportunities due to economic shifts and technological advancements.</p>
Youth Working Younger	<p>"The economy is a big factor affecting kids today with career development - they are looking for jobs earlier so they can help support their families.";</p> <p>"Homelessness in youth is another factor, again</p>	<p>A trend where young people are entering the workforce at an earlier age, often due to financial pressures or changing educational pathways.</p>

	kids are looking for jobs to support themselves."	
Changing Labor Market	"How technology will shape the ever-changing workforce."; "Excited about: ability to go anywhere to work."	The evolution of job markets influenced by technology, globalization, and economic changes, leading to new types of employment and skill requirements.
Increased Mobility	"Excited about: ability to go anywhere to work."; "The biggest trend I've noticed is that youth don't want the traditional picture of 'work.' They want flexibility, boundaries, and good benefits."	The rising trend of people moving between jobs, locations, or careers more frequently, facilitated by remote work and global opportunities.
Hybrid Work	"Excited about: hybrid work."; "Excited by virtual working opportunities."	A flexible work model that combines remote work with in-office work, allowing employees to split their time between home and the workplace.
Increasing Economic Divide	"The divide between the well-to-do and struggling is	The widening gap between the wealthy and the poor, exacerbated by disparities in

	widening and glaringly obvious in some schools."; "Anxiety about finances and job security."	education, job opportunities, and technological access.
Lack of Support from Educational Institutions	"Some schools are resistant to career exploration, feeling that it is not necessary or already taken care of."; "Young people are in need of well-trained, knowledgeable career development professionals directly in schools."	Insufficient assistance from schools and universities in preparing students for the workforce and providing necessary career guidance.
Anxiety About Finding Work	"Nervous in respect to how COVID-19 has shaped our youth and workforce."; "Anxiety about finances and job security."	Increased stress and concern among individuals about securing employment, particularly in uncertain economic conditions.
Demand for Skilled Laborers	"Excited about: increased need for skilled trades.";	A high need for workers with specialized skills, particularly in trades and technical fields.

	"Employers looking for specialized training."	
Technological Disruptions	"How AI will play a huge role in many careers and educational journeys."; "Significant changes in industries caused by automation and artificial intelligence."	Significant changes in industries and job markets caused by advancements in technology, such as automation and artificial intelligence.
Ongoing Impact of COVID-19	"Nervous in respect to how COVID-19 has shaped our youth and workforce."; "Lasting effects of the pandemic on job patterns and economic conditions."	The lasting effects of the pandemic on work patterns, job availability, and economic conditions.
Impact of AI	"How AI will play a huge role in many careers and educational journeys."; "AI is something that I am curious about."	The influence of artificial intelligence on job automation, skill requirements, and workplace dynamics.

Online/Remote Work	<p>"Excited by virtual working opportunities.";</p> <p>"Employment that is performed outside of a traditional office environment."</p>	<p>Employment that is performed outside of a traditional office environment, often facilitated by digital communication tools.</p>
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Less Desire to Take on School Debt	<p>"A lot of kids aren't looking to go into large amounts of debt going to post-secondary."; "Students are considering gap years to save money for studies."</p>	<p>Growing reluctance among students to incur large amounts of debt for higher education due to financial uncertainties and the availability of alternative career paths.</p>
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Anxiety About Finances	<p>"Anxiety about finances and job security."; "The economy is a big factor affecting kids today with career development."</p>	<p>Worry among individuals about their income, job security, and financial stability.</p>
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Decline of Social Skills	<p>"Youth's social skills have been impacted by COVID, which I fear will impact their</p>	<p>A decrease in interpersonal skills among individuals, potentially due to increased reliance on digital communication.</p>
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	<p>ability to connect with customers, employers, and co-workers."; "Social anxiety seems very prevalent."</p>	
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Value of Work-Life Balance	<p>"Youth have expressed work-life balance as a priority for them in their jobs and future careers."; "The biggest trend I've noticed is that youth don't want the traditional picture of 'work.' They want flexibility, boundaries, and good benefits."</p>	<p>The importance placed on maintaining a healthy balance between work responsibilities and personal life.</p>
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Willing to Disclose Required Accommodations	<p>"Openness to disclose disabilities and challenges and to accept support."; "Employers are becoming more inclusive, but fear and lack of understanding hold them back."</p>	<p>Increased openness among employees to communicate their needs for workplace accommodations to support their productivity and well-being.</p>
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Technologically Adapt	<p>"Seem savvy with personal technology but then struggle to produce presentations, resumes, and cover letters.";</p> <p>"Use of mobile phones as only device for job applications."</p>	The ability to quickly learn and effectively use new technologies in the workplace.
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Not Sure How to Apply Technology to Career Development	<p>"Not sure how to leverage technology for professional growth and career planning.";</p> <p>"Employers are unsure how to integrate technology into career development."</p>	Uncertainty among individuals about how to leverage technological tools for their professional growth and career planning.
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Struggle with Critical Thinking & Creativity	<p>"Struggle to come up with original ideas and express thoughts.";</p> <p>"Employers needing more creative and innovative approaches."</p>	Challenges faced by individuals in developing and applying critical thinking and creative problem-solving skills.
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Weakening Work Ethic	<p>"Eagerness to earn money but not always prepared to do the</p>	A perceived decline in the commitment and dedication of workers towards their job responsibilities.
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	work for it."; "A lot of youth believe they can enter a company at mid-level with a higher salary."	
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Poor Sleep Habits	"Struggles with sleep hygiene - not enough sleep on a daily basis."; "Poor sleep patterns affecting productivity and well-being."	Inadequate sleep patterns that negatively impact individuals' productivity and overall well-being.
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Struggling Mental Health	"Mental health struggles (wide-ranging)."; "Anxiety about future career paths and financial security."	Increased prevalence of mental health issues affecting individuals' ability to perform effectively at work.
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Digital Living	"Digital lives - friends are digital from around the world but then have no in-person friendships."; "Use of digital spaces for work, learning, and socialization."	A lifestyle heavily integrated with digital technologies, affecting various aspects of daily life, including work, communication, and entertainment.
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Desire for Flexible Workplaces	<p>"The biggest trend I've noticed is that youth don't want the traditional picture of 'work.' They want flexibility, boundaries, and good benefits."; "Youth prefer jobs with remote work options."</p>	<p>The preference for work environments that offer flexibility in terms of hours, location, and work arrangements.</p>
Being Valued by Employer	<p>"Youth want to be in environments where their voices are heard and people are treated with respect."; "Need for employees to feel valued by employers."</p>	<p>The need for employees to feel recognized and appreciated by their employers for their contributions.</p>
Purposeful Work	<p>"Want to be own boss. Entrepreneurial."; "Desire to pursue careers that provide meaning and fulfillment."</p>	<p>The pursuit of jobs that provide a sense of purpose and fulfillment beyond financial compensation.</p>
Importance of Working Directly with Employers	<p>"Working directly with employers to build partnerships has been so</p>	<p>The value placed on direct interaction and communication with employers for career development and job satisfaction.</p>

	valuable."; "Employers benefit from engaging with youth early in their career journeys."	
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Corporate Integrity	"A lot of companies say what their core values are, and youth are becoming more aware if they are living up to that commitment."; "Corporate accountability in hiring and work culture."	The importance of ethical practices, transparency, and accountability within organizations.
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Need for Creative and Innovative Approaches	"Employers that I work with have also noted their need to become more innovative in their approach to hiring."; "Need for workplaces to foster creativity and innovation."	The demand for novel and effective solutions to address workplace challenges and opportunities.
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Honest and Transparent	"Need more transparency about career options, pathways, and	The value of clear and truthful communication within the workplace and in career-related interactions.
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	opportunities."; "Employers shifting interview focus to practical skills over personal history."	
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Desire Adaptable Training	"Employers willing to be adaptable and train/retrain staff to retain talent."; "Training programs need to be flexible to evolving job markets."	The preference for training programs that can be customized to individual needs and evolving job requirements.
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Transportation is a Barrier	"Transportation is a huge barrier so youth are limited to working within walking distance."; "Lack of reliable and affordable transport limits job access."	The challenges faced by individuals in accessing reliable and affordable transportation for commuting to work or educational institutions.
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Potential for Information Overload	"Attention spans are dramatically shortened because of information overload."; "Struggles with	The risk of becoming overwhelmed by the sheer volume of available information, particularly in digital formats.
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	processing vast amounts of career-related data."	
Misinformation	"There is so much misinformation to contend with, leading to bad career decisions."; "Misinformation about career pathways and job expectations."	The spread of false or misleading information, which can impact decision-making and perceptions.
Importance of Knowledgeable and Capable Career Development Professionals (CDP)	"Young people are in need of well-trained, knowledgeable career development professionals directly in schools."; "Lack of structured career counseling in education."	The need for skilled career advisors who can provide effective guidance and support to individuals.
Challenge of Meeting Basic Needs	"Homelessness in youth is another factor, again kids are looking for jobs to support themselves."; "Financial	The difficulties faced by individuals in securing essential resources such as food, housing, and healthcare. All of which can affect their ability to focus on career development.

	struggles impact job readiness and focus."	
Importance of Training and Education	"The critical role of continuous learning and skill development in career success."; "Employers looking for micro-credentialing and upskilling options."	The critical role of continuous learning and skill development in achieving career success and adaptability.
Social Anxiety	"Social anxiety seems very prevalent."; "Fear of workplace interactions and job-related communication."	The increased feelings of nervousness and fear in social interactions, which can impact professional networking and workplace relationships.
Literacy Struggles	"Literacy - knowing what to capitalize, spelling, etc., not great."; "Employers noting poor written communication skills in youth."	The difficulties some individuals face in reading and writing skills, which can hinder their career prospects.
Basic Workplace Skills Deficit	"Students are not able to recognize that the	The lack of fundamental skills needed to succeed in a work environment, such as

	transferable skills they obtained via high school experiences are very useful in obtaining employment.";	communication, teamwork, and time management.
	"Lack of confidence in applying past experiences to new job roles."	

	"Lack of knowledge in specific industries (90% did not know what agriculture was)."; "Many youth unaware of career opportunities beyond common professions."	The inability to recognize and apply skills learned in one context to different job roles or industries.
Don't Understand Transferable Skills		

	"Most youth seem to know the first step to a career path but not the long-term pathway."; "Limited understanding of career progression."	The lack of awareness or understanding of the various career paths available.
Don't Understand Different Career Options		

Don't Understand Career Planning/Journey	"Want to be own boss. Entrepreneurial."; "More youth are considering self-employment and startups."	The challenge of mapping out a career path and setting goals for professional development.
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Interest in Entrepreneurship	"Importance of being proficient with digital tools and technologies."; "Employers expect digital literacy as a basic job requirement."	The growing enthusiasm for starting and managing one's own business.
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Importance of Digital Skill	"Importance of being proficient with digital tools and technologies."; "Use of digital spaces for work, learning, and socialization."	The necessity of being proficient with digital tools and technologies to succeed in the modern workplace.
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Appendix D: Combined Trend List- Explore Survey & Environmental Scan

Trend	Definition
Individual Layer	
Interest in trades	Growing enthusiasm among young individuals for trade careers.
Youth working younger	Increasing trend of young people entering the workforce earlier.
Anxiety about career options	Youth are concerned about the way things are changing and about finding meaningful employment.
Anxiety about finances	Youth are concerned about personal finances and therefore what their salary will be.
Cost effective career development	Youth focused on affordable pathways for career development (example: Less inclined to take on school debt).
Struggle with social skills	Youth show a diminishing ability to effectively engage and communicate in interpersonal relationships.
Changing expectations for employers	Refers to a broad evolving landscape where youth are redefining their criteria for desirable workplace attributes, anticipating employers to align with values such as flexibility, inclusivity, and a commitment to personal and professional development. This trend signifies a shift in the traditional employer-employee dynamic towards a more holistic and values-driven approach to work
Struggle to apply technology to career development	Youth struggle to incorporate technology effectively into career development processes.

Trend	Definition
Mental health struggles	Youth are struggling with their mental wellbeing and present with increased anxiety, loneliness, and other mental health elements.
Struggle with critical thinking	Diminishing ability for youth to analyze, evaluate, and apply information in a thoughtful and reasoned manner.
Digital living	Youth are increasingly engaged in 'online living' and having less 'in person' relations or interactions.
Struggles with workplace skills	Lack of essential skills needed for success in various workplace environments (Example: how to use phone).
Lack of understanding of the concept of career planning and trajectory	Limited awareness and comprehension of the concepts of career planning and trajectory (Example: That there are different types of doctors).
Technologically embedded	Youth are willing and able to adapt to technological advancements
Interest in entrepreneurship	Growing enthusiasm among young individuals for entrepreneurial ventures as a viable and attractive career option.
Willing to disclose required accommodations	Openness and willingness to communicate and disclose necessary accommodations for an inclusive and supportive learning/work environment.
Delayed adulthood (ES)	Highlighting a shift in traditional timelines for entering adulthood milestones. Youth are postponing major life decisions and responsibilities.
Highly diverse generation (ES)	Generation Z (outside of Gen A) is the most diverse generation.

Trend	Definition
Interpersonal and Institutional Layer	
Lack of connection between career development and educational institutions	Educational institutions are unaware or not interested in working with career development professionals and leveraging their expertise and the services they offer.
Honest and transparent conversations	Emphasis on open and transparent dialogues in career development processes.
Transportation as a barrier	Limited access to transportation poses challenges for youth in accessing job opportunities and career development resources.
Information overload	Referring to the significant amount of information is available via social media and the internet. Youth may be overwhelmed by the amount of information.
Safe space	An environment which allows for authentic expression and fosters psychological safety.
Personalized approach (intersectionality) (ES)	Approaching service delivery recognizing youths' individual experiences and valuing their background and their various intersections of identity.
Racial equity and inclusion strategies (ES)	Recognition of the historical and institutional barriers for equity seeking communities and adapting approaches and content to support equitable learning opportunities.
Relational approach (ES)	Emphasizing the significance of relationships between educators and students, this trend underscores the value of mentorship and personalized guidance to enhance the learning experience.

Trend	Definition
Importance of lifelong learning (ES)	To support success, supporting youth to continuously engage in skill development.
Youth centric approach (ES)	Focusing on the needs, preferences, and interests of students, this trend advocates tailoring educational experiences to individual learners, fostering engagement and relevance in the learning process.
Competency based education (ES)	This trend promotes a personalized learning journey where students advance upon mastering specific competencies, ensuring a more flexible and individualized educational experience.
Bespoke education approach (ES)	This trend emphasizes a customized approach that caters to the unique strengths, interests, and preferences of each learner, fostering a more personalized and effective learning experience.
globalization (ES)	Acknowledging the interconnectedness of the world, this trend emphasizes the importance of global perspectives and cross-cultural competence in career development.
Importance of soft skills (ES)	Denotes the growing recognition of the significance of interpersonal, communication, and emotional intelligence skills alongside technical expertise. This trend underscores the understanding that qualities like teamwork, adaptability, and effective communication are integral for success in the modern workplace, emphasizing a holistic approach to professional development.

Trend	Definition
Intercultural skills (ES)	Recognizing the global movement of talent, this trend emphasizes the importance of diversity and multicultural skills.
Integrative learning (ES)	A trend emphasizing a holistic approach to education, promoting the synthesis of diverse knowledge and skills across disciplines for a more comprehensive understanding and practical application.
Collaborative learning (ES)	A trend promoting active student engagement, teamwork, and shared exploration, enriching the educational experience through collaborative problem-solving and the exchange of ideas.
Infrastructural Layer	
Increasing economic divide	Youth (and their families) are increasingly struggling to meet basic needs and face financial challenges.
Hybrid/Online/Remote work	Evolution in workplace practices toward hybrid models, incorporating remote and online work arrangements.
Rapidly changing labour market	The increasing rate and scale of change/transformations in the job market
AI impact on labour market	Artificial intelligence is a technology causing significant disruption in all aspects of the workforce. AI will influence workplace skills and be the catalyst for automation (job loss) and the creation of new career opportunities.
Skilled labourers shortage	The widespread shortage of individuals possessing specific, specialized skills needed in various industries.

Trend	Definition
Misinformation	With the increasing role of social media, youth may struggle to understand what is true and false.
Skill economy (ES)	The shift in focus to skills as currency in the job market, emphasizing the importance of diverse and adaptable skill sets for career success.
Rise of gig economy (ES)	The trend highlights the increasing prevalence of freelance and short-term work, encouraging flexibility and entrepreneurship in career choices.
Significant technological disruption (ES)	The rapid technological advancements are having significant impact on job roles and skills.
Rise of green economy (ES)	The growing importance of environmentally sustainable practices, this trend emphasizes careers in eco-friendly industries and the development of green skills.
Importance of technological/digital skills (ES)	The critical role of technology and digital literacy in virtually all career goals and workplaces.
Increased immigration rates (ES)	Demographic trend relating to the increased rate of immigrant and refugee entering Canada.
Adaptability & flexibility (ES)	The ability to adapt to change and embrace flexibility as essential skills for navigating the evolving landscape of work.
Importance of 'tech proof' skills (ES)	Refers to skills resilient to technological shifts, highlighting the need for capabilities that withstand automation and technological disruptions.

Trend	Definition
Digital literacy (ES)	Refers to the skill of understanding and navigating digital tools and platforms.
Ability to engage in self-directed learning (ES)	This trend underscores the importance of youth being able to take initiative and responsibility for their own learning journey.

Appendix E: Invitation to Participate



Title of Research: Futures of Youth Career Development Project

Principal Investigator: Joel Murphy

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Invitation to Participate

Through collaboration with you and other youth career development professional and/or Generation Z individuals working within the field of career development this research project intends to develop *A Futures-Oriented Theoretical Framework of Youth Career Development*. We would like to invite you to participate in this project.

Purpose and Description of the Research

The objective of this research is to develop A Futures-Oriented Theoretical Framework for Informing Youth Employment Practices . This framework is intended to support the work of career educators within Nova Scotia working directly with youth from Generation Z (1997-2012). The timeframe for this future oriented work is considering changes that may occur within the field of career development between 2028-2033. These dates represent when the final members of Generation Z could move toward graduation from high school and preparing to pursue further education or enter the workforce.

The purpose of this proposed research is to support career development educators and organizations in Nova Scotia by collaborating with you on engaging in rigorous and relevant academic research to intentionally and humbling consider how potential changes in the Nova Scotian labour market, generational values, and educational approaches will affect youth-focused career development programs and interventions.

What can you expect to do, and how much time will it take?

Participating in this research will look like participating in 3 online surveys across the duration of several months. The initial survey will be composed of open ended questions relating to your opinions on the positive impact of career development on youth and potential things you are seeing change as you offer services to Generation Z clients. The following 2 surveys will involve scoring the previously identified service outcomes and trends. Surveys will be administered online and will take between 15-30 minutes.

Following the third survey you will be invited to participate in a workshop at which point you will be able to offer feedback and insights into the proposed theoretical framework. These workshops will occur online (Zoom) and if feasible in person. For your convenience, various dates and times will be available for to select from. If none of the proposed times work then a one-on-one discussion will be scheduled between yourself and Joel Murphy. These workshops will be scheduled for an hour and half in duration, and will be recorded to ensure that all things shared will be captured and used to revise the framework.

Participation is voluntary

We would like to emphasize that your participation in this research is completely your choice. You can decide to leave the study at any point without any consequences. All material shared (responses to surveys and recording of workshops) will be kept secure in password protected software.

Will participating in this research study help you in any way?

This project is innovative and presents numerous opportunities for positive contribution to you and your organization. The intention of this project is to support you and your work, and by participating you will ensure that the result is shaped and informed by your context and experiences. Additionally, a positive contribution of being involved in this project is that you will be able to connect with other career development professionals across the province during your workshop, with potential of supporting networking with likeminded individuals.

The long-term transformative outcome for this project is to enhance youth career development services so that we are better able to support future clients to meaningfully attach to the workforce creating a vibrant multigenerational workforce.

What is the potential harm of participating in study?

The potential harm with participation in this study is low. Intentional actions will be taken to ensure that individuals feel comfortable and safe during the workshops. This will be done through developing of a community guidelines to help shape the discussion. If at any point you are uncomfortable you can reach out to Joel Murphy, to discuss any concerns you may have. Additionally, resources such as NS Mental Health Crisis Line and 7 Cup Online support will be shared.

Will anyone know what said?

Your participation in this research will not be shared with anyone other than the research team. We will not use your real name and anything you say that could identify you will be removed before the data is analyzed. We are unable to ensure complete anonymity within the workshops, however, participants will be reminded of confidentiality related to topics and individuals attending said workshops.

All notes, audio recordings, and transcripts collected as a part of this process will be kept in a secure place (i.e., hard copies will be stored within a locked filing cabinet in the principal investigator's office; digital copies will be stored in a password-protected folder on the principal investigator's computer) and will only be shared with myself and the research team. All electronic and paper transcripts will be destroyed after seven years of completion of the research project.

What Will Happen to the Information You Provide?

The learnings from the surveys and workshops will be used to help to develop A Futures-Oriented Theoretical Framework for Informing Youth Employment Practices . This framework will be used within the PhD work of Joel Murphy and support his completion of that degree. Additionally, general themes and key learnings will be used to help enhance career development organizations awareness of how to design and offer programs for youth in the future, support different CEI employment initiatives, and potential academic articles. If you are interested, we would love to share with you any resources and materials developed.

Participation in the Study means that you recognize that you are giving permission to the NS Centre for Employment Innovation/ St Francis Xavier University to:

- Publish reports, articles and/or research updates using the information you've given us once it is approved by you;
- For the use of completing the program requirements of the principal investigator's PhD program;
- Support the development of other useful resources and training.

Questions or Concerns: Should you have any questions or concerns about this research project or your participation in it, please feel free to contact Joel Murphy during regular work hours by phone (XXX) XXX-XXXX or anytime by email jmurphy@stfx.ca.

Should you accept the invitation to participate, you may show your agreement by completing and signing the consent form.

Sincerely,

Joel Murphy

Ph.D. Candidate, Faculty of Education, Mount Saint Vincent University

Impact and Innovation Officer, Centre for Employment Innovation, Coady Institute, St. Francis Xavier University

(XXX) XXX-XXXX | jmurphy@stfx.ca

Appendix F: Informed Consent



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Title of Research: Futures of Youth Career Development Project

I have received the Invitation to Participate for the research project titled: *Futures of Youth Career Development*, have had an opportunity to read the information provided (or it has been explained to me) and have had all questions that I may have had answered.

I agree to participate in this research project, understanding that I am doing so voluntarily, that confidentiality will be maintained, and that I have the right to withdraw from the study at any point using the means outlined in the Invitation to Participate.

As a participant in this research study, I agree to be audio recorded during the online or in person workshop. I am aware that I can withdraw this consent at any time without penalty or consequence, at which time the recordings will be completely erased and destroyed.

I understand that the recordings will be kept confidential and that no information about me, including these recordings, will be given to anyone.

I consent to excerpts of these recordings, or descriptions of them, being used by the researcher for the purpose of research or the presentation of research. I understand that the researcher will edit out from these recordings, or from descriptions of the recordings, any information that may identify me.

I understand that I will be given the opportunity to provide or withdraw my permission for the use of the recordings for purposes other than what was stated in the original consent form prior to their use.

I understand that if I have any comments or concerns resulting from my participation in this study that I can contact the Research Ethics Coordinator, Office of Research Ethics, at 902-457-6350 or ethics@msvu.ca .

Participant Name	
Participant Signature	
Date	
Researcher Signature	
Date	

Appendix G: Explore Survey



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**CENTRE FOR
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Title of Research: Futures of Youth Career Development Project

Thank you so much for your willingness to participate in the *Futures of Youth Career Development* project. The intention of this research is to develop A Futures-Oriented Theoretical Framework for Informing Youth Employment Practices which is informed and developed by Nova Scotia youth career development professionals for youth living and working in Nova Scotia.

This framework is intended to support the work of career educators within Nova Scotia working directly with youth from Generation Z (1997-2012). The timeframe for this future oriented work is considering changes that may occur within the field of career development between 2028-2033. These dates represent when the final members of Generation Z could move toward graduation from high school and preparing to pursue further education or enter the workforce.

This is the first of three surveys you along with other professionals from across Nova Scotia will participate in. The purpose of this survey is to get a general and broad perspective of positive outcomes resulting from career development and any changes, emerging trends, or patterns you are seeing in your work. We are calling this the ‘Explore Survey’.

Instructions


Below you will be asked general ‘get to know you’ information and two open-ended questions, which we encourage you to write as much or as little as you feel comfortable. They are intentionally broad to support your ability to offer what you think is most important.

Thank you again for participating in this project. Your insights, perspectives, and experiences are vital to help the field of youth career development continue to grow and thrive. We are in this together. Just as a reminder, your participation in this is *completely* voluntary! If you have any questions or concerns about this project or your participation in it, please feel free to contact Joel Murphy during regular work hours by phone (XXX) XXX-XXXX or anytime by email jmurphy@stfx.ca.

Thank you again!

General Information

Question	Answers (drop down)
Have many years have you been working in the career development field?	A. 1-3 years B. 4-7 years C. 8-15 years D. 16+ years
How many years have you been offering career development services directly to youth?	A. I don't work directly with youth B. 1-3 years C. 4-7 years D. 8-15 years E. 16+ years

<p>What region of Nova Scotia are you working in?</p> 	<p>A. Cape Breton B. North Shore C. HRM D. Annapolis Valley E. Southern</p>
<p>How would you describe the context of your work?</p>	<p>A. Rural B. Urban C. Combination</p>
<p>What is the demographic composition of the students you work with? Please select all that apply.</p>	<p>A. Male B. Female C. Non-binary/genderqueer D. Transgender E. Caucasian/White F. African Nova Scotian G. Person of African Descent H. Person with an exceptionality I. Indigenous Person J. Racialized Individual K. Other (Please specify: _____)</p>
<p>Recognizing that our identities are composed of various intersections, if comfortable, please select all that apply to yourself.</p>	<p>A. Male B. Female C. Non-binary/genderqueer D. Transgender E. Caucasian/White F. African Nova Scotian G. Person of African Descent H. Person with an exceptionality I. Indigenous Person J. Racialized Individual K. Generation Z (born between 1997-2012)</p>
<p>What is your age group?</p>	<p>A. 18-24 years B. 25-34 years C. 35-44 years D. 45-54 years E. 55 years or older</p>

Question 1

The first question is related to positive outcomes resulting from youth (ages 11-17) engaging in career development services, programs, or interventions. The ultimate long-term desired outcome of career development services is to ‘simply’ support meaningfully attach to the

workforce. However, recognizing that participating in a career development program is one step along the journey to this long-term goal we are hoping that you would share more immediate outcomes which occur as result directly from youth participating in career development programs. The term outcome is defined as a desired results or effects that are achieved or occur because of youth participation within a youth career development program, service, or intervention.

Feel free to use point-form or make a list.

Based on your experiences, what are some of the best possible short & medium-term outcomes which can result from youth (ages 11-17) engaging in career development services, programs, or interventions, which will support that long-term outcome of meaningful workforce attachment?

Question 2

The second question is focused on identifying changes, emerging trends, and/or patterns that you are experiencing as you engage directly with young people. An example of this could be a change in young people's attitudes or even labour market changes.

Feel free to use point-form or make a list.

Have you noticed any changes, emerging trends, or patterns surfacing in the context of youth career development or/and in the needs and preferences of the youth (ages 11-17) you support? If yes, what changes, emerging trends, or patterns are you most curious, excited, intrigued by, or nervous about?

Appendix H: Explore Survey & Environmental Combined Rationale

Removed Trend	Rationale	Source List
Weakening Work Ethic	Potentially covered under 'Changing Perspectives on Work' or 'Struggles with Workplace Skills'	Explore Survey Trend List
Poor Sleep Habits	Might be part of broader 'Mental Health Struggles' trend	Explore Survey Trend List
Social Anxiety	Was included under 'Struggles with Social Skills' or 'Mental Health Struggles'	Explore Survey Trend List
Literacy Struggles	Incorporated into 'Struggles with Workplace Skills' or 'Cost Effective Career Development'	Explore Survey Trend List
Basic Workplace Skills Deficit	Merged with 'Struggles with Workplace Skills'	Explore Survey Trend List

Don't Understand Transferable Skills	Was considered relevant to outcome and removed.	Explore Survey Trend List
Don't Understand Different Career Paths	Included under 'Lack of Understanding of Career Planning and Trajectory'	Explore Survey Trend List
Don't Understand Career Planning/Trajectory	Combined with 'Lack of Understanding of Career Planning and Trajectory'	Explore Survey Trend List
Understanding of Professional Workplace	Was considered relevant to outcome and removed.	Environmental Trend List
Exposure to Professional Workplace	Was considered relevant to outcome and removed.	Environmental Trend List
Received Academic Support	Was considered relevant to outcome and removed.	Environmental Trend List

Positive Peer Relationships	Could be part of broader social skills and mental health concerns. Was more of a program delivery method than a trend.	Environmental Trend List
Understanding of Training and Education Options	Was considered relevant to outcome and removed.	Environmental Trend List
Understanding of What Employers Want	Was considered relevant to outcome and removed.	Environmental Trend List
Insights into Personal Passions	Was considered relevant to outcome and removed.	Environmental Trend List
Exposure to Diverse Career Options	Could be merged into 'Career Exploration' or 'Lack of Understanding of Career Planning and Trajectory'. Additionally, was considered relevant to outcome and removed.	Environmental Trend List
Need for Knowledgeable	Was combined with 'Lack of Connection Between Career Development and Educational Institutions'	Explore Survey Trend List

Career Development		
Professionals		
Corporate Integrity	This was absorbed into discussions on workplace culture and ethics and changing expectations of employers.	Explore Survey Trend List
Importance of Training and Education	Likely included under 'Competency-Based Education' or 'Bespoke Education Approach'. Additionally, was considered relevant to outcome and removed.	Explore Survey Trend List
Understanding of Lifelong Learning	Was integrated into 'Importance of Lifelong Learning'	Environmental Trend List
Understanding and Identification of Transferable Skills	It was included under 'Lack of Understanding of Career Planning and Trajectory'. Additionally, it was connected to various outcomes.	Environmental Trend List
Ongoing Impact of COVID-19	This was deductively rationalized as contributing to various relevant future trends (struggle with workplace skills; Ongoing technological disruption) and was removed.	Explore Survey Trend List

Challenge of Meeting	This was considered part of 'Increasing Economic	Explore
Basic Needs	Divide'	Survey Trend
		List

Appendix I: Getting Serious - Part 1



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Title of Research: Futures of Youth Career Development Project

Thank you for completing the 'Explore Survey'. We had 26 individuals from across Nova Scotia share their insights and perspectives. Those who responded are (such as yourself) working within the field of youth career development or who are individuals born (between 1997-2012) and working within the broad field of career development.

We have a great diversity of ages, with 11 individuals who are between ages 18-26, two individuals who are 55+, and everything in between. As a group we hold an amazing diverse assortment of backgrounds and intersections of identity and serve an equally diverse group of young people. We also have strong representation of all geographic locations in Nova Scotia (17% Cape Breton, 30% North Shore, 39% HRM, 4% Annapolis Valley, 9% Southern Nova Scotia). Finally, altogether there are close to 100 years of experience working in the career development field.

Survey 2 (Getting Serious-Part 1) is composed of two sections, and while it may look long at first, DO NOT be overwhelmed. All you need to do is offer a quick score and if you want you can write long word responses (but that isn't necessary, based on your schedule or interest). It will take between 20-40 minutes to complete.

The purpose of this survey is to help move us toward a consensus about the most important outcome and the changes/trends that you believe have the most potential impact and are most relevant to your work.

Instructions:

The first section is a list of positive outcomes (including brief descriptions) which are proposed as short- & medium-term outcomes resulting from youth (ages 11-17) engaging with career development services, interventions, or programs. The second section highlights trends/changes within the field of youth career development that you and your peers were most curious, excited, or nervous about. Additional elements were added through a review of the relevant literature done by the research team, these are noted with the indicator 'ES' in the description.

You will have the chance to review each item and then 'score' them using a 7-point scale. Please take time to read through each element and score them based on your perspective and contextual experience. If you are able and interested, please write down a rationale or comment on your reasoning behind your scoring. Additionally, if you do not like the definition or wording make note of that as well.

Thank you again for participating in this project. Your insights, perspectives, and experiences are

vital to help the field of youth career development continue to grow and thrive. We are in this together.

Joel Murphy

If you have any questions or concerns about this project or your participation in it, please feel free to contact Joel Murphy during regular work hours by phone (XXX) XXX-XXXX or anytime by email jmurphy@stfx.ca.

If you have any comments or concerns resulting from your participation in this study that you can contact the Research Ethics Coordinator, Office of Research Ethics, at 902-457-6350 or ethics@msvu.ca.

Thank you!

To help support follow-up, please put your email below. Your responses WILL NOT be connected to your responses, to ensure confidentiality of responses.

Section 1: Outcomes

The following list was developed from responses to this question:

Based on your experiences, what are some of the best possible short & medium-term outcomes which can result from youth (ages 11-17) engaging in career development services, programs, or interventions, which will support the long-term outcome of meaningful workforce attachment?

Please review the following list of outcomes and rank their IMPORTANCE using the 7-point scale below. Importance is defined as the significance of the outcomes resulting in contributing to catalyzing long term attachment to the workforce in youth participants.

1. **Not at all important:** This outcome holds no significance or value whatsoever. It is considered completely unimportant.
2. **Slightly important:** This outcome has a minimal level of importance, but it is still considered relatively unimportant overall.
3. **Somewhat important:** This outcome is moderately important, but there may be other outcomes which hold greater significance.
4. **Moderately important:** This outcome holds a moderate level of importance; I would consider it fairly significant to support the long-term outcome of meaningful workforce attachment.
5. **Important:** This outcome is important and holds a considerable degree of significance.
6. **Very important:** This outcome is highly important and is considered crucial in supporting the long-term outcome of meaningful workforce attachment.
7. **Extremely important:** This outcome is of utmost importance and is essential or critical to supporting the long-term outcome of meaningful workforce attachment. It carries the highest level of significance.

Full List of Outcomes:

Outcomes	Description
Career Exploration	The process of learning about career paths, job functions, industries, fields, and roles.
Career Planning	The process of evaluating and choosing the job that best suits your personality, skills, and interests.

Connection with Trusted Adults	Establishing meaningful relationships with supportive career development professionals.
Increased Self-Awareness	Develop a deeper understanding of personal strengths, values, and identity.
Understanding of Labour Market Information	Gain insights into current job trends, demand, and skills required in the job market.
Understanding of Professional Workplace Expectations	Acquire knowledge of the norms, expectations, and conduct within a professional work environment.
Exposure to Professional Workplace	Gain firsthand experience in a professional setting.
Received Academic Support	Receive assistance with academic challenges to foster overall development and future career success.
Development of Life Skills	Development of practical life skills such as time management, how to open a bank account, etc.
Starting of Business	For some youth, the initiating of entrepreneurial ventures (new businesses) may be a viable outcome.
Increased Confidence	Develop a strong sense of self-confidence and assurance in personal abilities.
Identification of Personal Strengths and Skills	Youth recognize their individual strengths and skills and relate this to suitable career opportunities.
Ability to write Resume & Cover Letter	Development of effective communication tools for job applications, showcasing qualifications and experiences.
Goal Setting Skills	Cultivate the ability to set realistic and achievable career goals for continuous personal and professional growth.
Sense of Hope	Foster a positive outlook on future career prospects and personal development.
Motivation	Cultivate the drive and determination to pursue and achieve career aspirations.
Development of Workplace/Professional Skills	Enhancing specific skills relevant to the chosen profession or industry (Example: Email etiquette).
Financial Literacy	Gain knowledge and skills to manage personal finances and make informed financial decisions.
Positive Peer Relationships	Cultivate supportive and constructive relationships with peers to enhance collaboration and mutual growth.
Increased understanding of Job Seeking Process	Developing insights into effective job search strategies and application processes (including interview skills).
Understanding and identification of Transferable Skills	Youth recognize that they have skills that can be applied across various roles and industries.
Exposure to relevant resources	Engagement with tools, networks, and information pertinent to career development.

Entrepreneurship Skills	If desired, youth will have developed the mindset and skills necessary for entrepreneurial endeavors and innovation.
Connection with employers and relevant industry leaders	Establish valuable connections with professionals in the desired field.
Increased awareness of cultural identity	Youth will grow in understanding and appreciation with their cultural background.
Openness to New Career Paths	Youth will be receptive to exploring diverse career opportunities and adapting to changing circumstances.
Mitigate Stressful Career Questions	Youth's stress and concerns regarding their career decision-making will be lessened.
Understanding of training and Education options	An understanding of various educational pathways and training options available which will support youth in their career aspirations.
Increased understanding of the type of workplace they want to be connected to	Youth will grow in awareness of their preferences for workplace culture and what they need to be successful.
Understanding of what employers are looking for	Recognize and appropriately adapt to expectations and requirements of potential employers.
Critical thinking	Develop analytical and problem-solving skills.
Resilience	Ability to bounce back from setbacks and persist in the face of challenges.
Insights to Personal passions	Development of insights regarding personal passions and interests related to employment.
Exposure to diverse career options	Youth will have an increased awareness of potential careers outside of their personal experience or worldview.

This is the format for the Outcome Importance section within the online software. It will incorporate the entire above outcome list

	1 - Not at all Important	2- Slightly Important	3- Somewhat Important	4- Moderately Important	5- Important	6- Very Important	7- Extremely Important
<p>Career Exploration: The process of learning about career paths, job functions, industries, fields, and roles.</p> <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Career Planning: The process of evaluating and choosing the job that best suits your personality, skills, and interests.</p> <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Connection with Trusted Adults: Establishing meaningful relationships with supportive career development professionals.</p> <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Increased Self-Awareness: Develop a deeper understanding of personal strengths, values, and identity.</p> <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Understanding of Labour Market Information: Gain insights into current job trends, demand, and skills required in the job market.</p> <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Understanding of Professional Workplace Expectations: Acquire knowledge of the norms, expectations, and conduct within a professional work environment.</p> <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Exposure to Professional Workplace: Gain firsthand experience in a professional setting.</p> <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>Received Academic Support: Receive assistance with academic challenges to foster overall development and future career success.</p> <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Trends List

The following list is composed of content from survey responses and the environmental scan of relevant literature and content. The below question is what promoted the responses:

Have you noticed any changes, emerging trends, or patterns surfaced in the context of youth career development or/and in the needs and preferences of the youth (ages 11-17) you support? If yes, what changes, emerging trends, or patterns are you most curious, excited, intrigued by, or nervous about?

Please review the following list and rank their potential for POTENTIAL IMPACT and their RELEVANCE to you and your context, using the 7-point scales.

There were three areas in which the identified trends influence. One area was related directly to youth themselves, the second was the broad field of career development, and the final area was trends relating to the broad workforce.

Trend Impact:

We will start by considering the potential impact of the identified trends. Potential Impact is defined as trends, patterns, or changes that you believe will influence or cause change in the way you offer and provide services in the next 5-10 years.

1- No impact: I do not expect the proposed trend to have any significant impact or influence on the field of youth career development.

2- Very low impact: The potential impact of this trend is minimal and will have limited effects on the field of youth career development.

3- Low impact: This trend has relatively small potential impact and will have a modest effect on the field of youth career development.

4- Moderate impact: This trend has moderate potential impact but will have a noticeable effect on the field of youth career development.

5- High impact: This trend has significant potential impact and will have substantial effects on the field of youth career development.

6- Very high impact: This trend has substantial potential impact and will have a strong and transformative effect on the field of youth career development.

7- Extremely high impact: This trend has exceptional and profound potential impact and will have far-reaching and revolutionary effects on the field of youth career development.

****Complete list of trends****

Trend	Description
Interest in Trades	Growing enthusiasm among young individuals for trade careers.
Youth Working Younger	Increasing trend of young people entering the workforce earlier.
Anxiety about Career Options	Youth are concerned about the way things are changing and about finding meaningful employment.
Anxiety about Finances	Youth are concerned about personal finances and therefore what their salary will be.
Cost Effective Career Development	Youth focused on affordable pathways for career development (example: Less inclined to take on school debt).
Struggle with Social Skills	Youth show a diminishing ability to effectively engage and communicate in interpersonal relationships.
Changing Expectations for Employers	Refers to a broad evolving landscape where youth are redefining their criteria for desirable workplace attributes, anticipating employers to align with values such as flexibility, inclusivity,

	and a commitment to personal and professional development. This trend signifies a shift in the traditional employer-employee dynamic towards a more holistic and values-driven approach to work
Struggle to apply technology to career development	Youth struggle to incorporate technology effectively into career development processes.
Mental Health Struggles	Youth are struggling with their mental wellbeing and present with increased anxiety, loneliness, and other mental health elements.
Struggle with critical thinking	Diminishing ability for youth to analyze, evaluate, and apply information in a thoughtful and reasoned manner.
Digital Living	Youth are increasingly engaged in 'online living' and having less 'in person' relations or interactions.
Struggles with Workplace Skills	Lack of essential skills needed for success in various workplace environments (Example: how to use phone).
Lack of understanding of the concept of career planning and trajectory	Limited awareness and comprehension of the concepts of career planning and trajectory (Example: That there are different types of doctors).
Technologically Embedded	Youth are willing and able to adapt to technological advancements
Interest in Entrepreneurship	Growing enthusiasm among young individuals for entrepreneurial ventures as a viable and attractive career option.
Willing to Disclose Required Accommodations	Openness and willingness to communicate and disclose necessary accommodations for an inclusive and supportive learning/work environment.
Delayed Adulthood (ES)	Highlighting a shift in traditional timelines for entering adulthood milestones. Youth are postponing major life decisions and responsibilities.
Highly Diverse Generation (ES)	Generation Z (outside of Gen A) is the most diverse generation.
Lack of connection between career development and educational institutions	Educational institutions are unaware or not interested in working with career development professionals and leveraging their expertise and the services they offer.
Honest and Transparent Conversations	Emphasis on open and transparent dialogues in career development processes.
Transportation as a barrier	Limited access to transportation poses challenges for youth in accessing job opportunities and career development resources.
Information Overload	A significant amount of information is available via social media and the internet. Youth may be overwhelmed by the amount of information.
Safe Space	An environment which allows for authentic expression and fosters psychological safety.
Personalized Approach (intersectionality) (ES)	Approaching service delivery recognizing youth's individual experiences and valuing their background and their various intersections of identity.
Racial equity and inclusion strategies (ES)	Recognition of the historical and institutional barriers for equity seeking communities and adapting approaches and content to support equitable learning opportunities.

Relational Approach (ES)	Emphasizing the significance of relationships between educators and students, this trend underscores the value of mentorship and personalized guidance to enhance the learning experience.
Importance of Lifelong Learning (ES)	To support success, supporting youth to continuously engage in skill development.
Youth Centric Approach (ES)	Focusing on the needs, preferences, and interests of students, this trend advocates tailoring educational experiences to individual learners, fostering engagement and relevance in the learning process.
Competency Based Education (ES)	This trend promotes a personalized learning journey where students advance upon mastering specific competencies, ensuring a more flexible and individualized educational experience.
Bespoke Education Approach (ES)	This trend emphasizes a customized approach that caters to the unique strengths, interests, and preferences of each learner, fostering a more personalized and effective learning experience.
Globalization (ES)	This trend refers to the interconnectedness of the world and emphasizes the importance of global perspectives.
Importance of Soft Skills (ES)	Denotes the growing recognition of the significance of interpersonal, communication, and emotional intelligence skills alongside technical expertise. This trend underscores the understanding that qualities like teamwork, adaptability, and effective communication are integral for success in the modern workplace, emphasizing a holistic approach to professional development.
Intercultural Skills (ES)	Recognizing the global movement of talent, this trend emphasizes the importance of diversity and multicultural skills.
Integrative Learning (ES)	A trend emphasizes a holistic approach to education, promoting the synthesis of diverse knowledge and skills across disciplines for a more comprehensive understanding and practical application.
Collaborative Learning (ES)	A trend promoting active student engagement, teamwork, and shared exploration, enriching the educational experience through collaborative problem-solving and the exchange of ideas.
Increasing Economic Divide	Youth (and their families) are increasingly struggling to meet basic needs and face financial challenges.
Hybrid/Online/Remote Work	Evolution in workplace practices toward hybrid models, incorporating remote and online work arrangements.
Rapidly Changing Labour Market	The increasing rate and scale of change/transformations in the job market
Artificial intelligence	Automation and changing jobs resulting in the reshaping the labor market
Skilled Labourers Shortage	The widespread shortage of individuals possessing specific, specialized skills needed in various industries.
Misinformation	With the increased role of social media, youth may struggle to understand what is true and false.
Skill Economy (ES)	The shift in focus to skills as currency in the job market, emphasizing the importance of diverse and adaptable skill sets for career success.
Rise of Gig Economy (ES)	The trend highlights the increasing prevalence of freelance and short-term work, encouraging flexibility and entrepreneurship in career choices.
Ongoing Technological Disruption (ES)	The rapid technological advancements are having significant impact on job roles and skills.
Rise of Green Economy (ES)	The growing importance of environmentally sustainable practices, this trend emphasizes careers in eco-friendly industries and the development of green skills.

Trend Relevance

Using the same list of trends, you will now ‘score’ them based on relevance. Relevance is defined as the level of importance or connection to the career educator's organization and the youth you are currently supporting.

1- Not at all relevant: This trend is completely irrelevant and has no connection to my context or current experiences.

2- Slightly relevant: This trend has minimal relevance and its connection to my context and current experiences is limited and relatively unimportant.

3- Somewhat relevant: This trend holds moderate relevance. I think that there are other trends that are more directly related to my context and current experiences and carry greater significance.

4- Moderately relevant: This trend is moderately relevant and has some importance within my context and current experiences.

5- Relevant: This trend is relevant and holds a significant degree of importance in relation to my context and current experiences.

6- Very relevant: This trend is highly relevant, and I consider it essential for understanding my context and current experiences.

7- Extremely relevant: This trend is of utmost relevance and is crucial or indispensable in fully comprehending my context and current experience.

This is the format for the Trend Relevance section within the online software. It will incorporate the entire above trend list

You did it!

Thank you for taking the time to complete Survey 2 (Getting Serious- Part 1).

This is the second of three surveys and is focused on helping to move toward a consensus of what this group of professionals view as the most important outcomes and trends which are most relevant and have the most potential impact. Responses here will help us filter the top picks and refine definitions, resulting Survey 3 (Getting Serious-Part 2) which will remove any trends or outcomes with an average score under 3.5.

Thank you again for participating in this project. Your insights, perspectives, and experiences are vital to help the field of youth career development continue to grow and thrive. We are in this together.

Just as a reminder, your participation in this is completely voluntary! If you have any questions or concerns about this project or your participation in it, please feel free to contact Joel Murphy

during regular work hours by phone (XXX) XXX-XXXX or anytime by email jmurphy@stfx.ca.

Thank you and be in touch soon!

Appendix J: Getting Serious – Part 2



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**CENTRE FOR
EMPLOYMENT
INNOVATION**

Title of Research: Futures of Youth Career Development Project

Thank you for completing the Getting Serious- Part 1 survey. It has been a while since that point in time, so thank you for your patience. We have now arrived at our final survey before our virtual or in-person workshops. Resulting from Getting Serious – Part 1 the list of outcomes has been refined to 22 and to 26 trends based on your scores and comments were also identified.

Survey 3 (Getting Serious- Part 2) is intended to help us move further toward a consensus of the most important outcome and the changes, trends, and patterns considered to have the most potential impact and relevance to your work.

Process:

Using descriptive statistical analysis method, outcomes and trends which scored below the weighted average (average of averages) were removed from the list. This was done in the following manner.

The scores for each outcome were added and then divided by the number of responses, resulting in the ‘median’ or average score for each outcome. To help in narrowing the outcomes, these averages were then added together and divided by the number of outcomes, resulting in the weighted average (average of averages) for all outcomes. This number was 5.29, any outcomes with an equal or lower score were removed from the list of outcomes.

A similar process for the trends was done, however, the final score combined the relevance and potential impact indicator (each indicator was weighted equally). The relevance and potential impact score were added together and then divided by number of responses, resulting in the median score for each trend. The weighted average (average of averages) was then identified as 5.55, any trend below this was removed.

If you wish for a list of the removed outcomes and trends, please reach out to Joel (jmurphy@stfx.ca).

Instructions:

Survey 3 is composed of the same sections as Survey 2, but with less trends and outcomes to review. Again, all you need to do is offer a quick score and if you want you can write long word responses (but that isn't necessary, based on your schedule or interest). It will take between 20-40 minutes to complete.

This survey will use the same criteria and ranking as Part 1. Please take time to read through each element and score them based on your perspective and contextual experience. There is an optional long worded question which can be filled in point form and is meant to help identify examples of current innovations.

Thank you again for participating in this project. Your insights, perspectives, and experiences are vital to help the field of youth career development continue to grow and thrive. We are in this together.

Just as a reminder, your participation in this is *completely* voluntary! If you have any questions or concerns about this project or your participation in it, please feel free to contact Joel Murphy during regular work hours by phone (XXX) XXX-XXXX or anytime by email jmurphy@stfx.ca.

Joel Murphy

If you have any questions or concerns about this project or your participation in it, please feel free to contact Joel Murphy during regular work hours by phone (XXX) XXX-XXXX or anytime by email jmurphy@stfx.ca.

If you have any comments or concerns resulting from your participation in this study that you can contact the Research Ethics Coordinator, Office of Research Ethics, at 902-457-6350 or ethics@msvu.ca.

Thank you!

To help support follow-up, please put your email below. Your responses WILL NOT be connected to your responses, to ensure confidentiality of responses.

Section 1: Outcomes

The following list was developed from responses to this question:

Based on your experiences, what are some of the best possible short & medium-term outcomes which can result from youth (ages 11-17) engaging in career development services, programs, or interventions, which will support the long-term outcome of meaningful workforce attachment?

Please review the following list of outcomes and rank their IMPORTANCE using the 7-point scale below. Importance is defined as the significance of outcomes resulting in catalyzing long-term attachment to the workforce in youth participants.

1. **Not at all important:** This outcome holds no significance or value whatsoever. It is considered completely unimportant.
2. **Slightly important:** This outcome has a minimal level of importance, but it is still considered relatively unimportant overall.
3. **Somewhat important:** This outcome is moderately important, but there may be other outcomes which hold greater significance.
4. **Moderately important:** This outcome holds a moderate level of importance; I would consider it fairly significant to support the long-term outcome of meaningful workforce attachment.
5. **Important:** This outcome is important and holds a considerable degree of significance.
6. **Very important:** This outcome is highly important and is considered crucial in supporting the long-term outcome of meaningful workforce attachment.
7. **Extremely important:** This outcome is of utmost importance and is essential or critical to supporting the long-term outcome of meaningful workforce attachment. It carries the highest level of significance.

Full List of Outcomes:

Outcomes	Description
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Career Exploration	The process of learning about career paths, job functions, industries, fields, and roles.
Career Planning	The process of evaluating and choosing the job that best suits your personality, skills, and interests.
Connection with Trusted Adults	Establishing meaningful relationships with supportive career development professionals.
Increased Self-Awareness	Develop a deeper understanding of personal strengths, values, and identity.
Increased Confidence	Develop a strong sense of self-confidence and assurance in personal abilities.
Identification of Personal Strengths and Skills	Youth recognize their individual strengths and skills and relate this to suitable career opportunities.
Goal Setting Skills	Cultivate the ability to set realistic and achievable career goals for continuous personal and professional growth.
Sense of Hope	Foster a positive outlook on future career prospects and personal development.
Motivation	Cultivate the drive and determination to pursue and achieve career aspirations.
Understanding and identification of Transferable Skills	Youth recognize that they have skills that can be applied across various roles and industries.
Exposure to relevant resources	Engagement with tools, networks, and information pertinent to career development.
Openness to New Career Paths	Youth will be receptive to exploring diverse career opportunities and adapting to changing circumstances.
Mitigate Stressful Career Questions	Youth's stress and concerns regarding their career decision-making will be lessened.
Understanding of training and Education options	An understanding of various educational pathways and training options available which will support youth in their career aspirations.
Increased understanding of the type of workplace they want to be connected to	Youth will grow in awareness of their preferences for workplace culture and what they need to be successful.
Understanding of what employers are looking for	Recognize and appropriately adapt to expectations and requirements of potential employers.
Critical thinking	Develop analytical and problem-solving skills.
Resilience	Ability to bounce back from setbacks and persist in the face of challenges.
Insights to Personal passions	Development of insights regarding personal passions and interests related to employment.

Exposure to diverse career options	Youth will have an increased awareness of potential careers outside of their personal experience or worldview.
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This is the format for the Outcome Importance section within the online software. It will incorporate the entire above outcome list

	1 - Not at all Important	2- Slightly Important	3- Somewhat Important	4- Moderately Important	5- Important	6- Very Important	7- Extremely Important
Career Exploration: The process of learning about career paths, job functions, industries, fields, and roles. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Career Planning: The process of evaluating and choosing the job that best suits your personality, skills, and interests. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Connection with Trusted Adults: Establishing meaningful relationships with supportive career development professionals. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased Self-Awareness: Develop a deeper understanding of personal strengths, values, and identity. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding of Labour Market Information: Gain insights into current job trends, demand, and skills required in the job market. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding of Professional Workplace Expectations: Acquire knowledge of the norms, expectations, and conduct within a professional work environment. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exposure to Professional Workplace: Gain firsthand experience in a professional setting. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Received Academic Support: Receive assistance with academic challenges to foster overall development and future career success. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Trends List

The following list is composed of content from survey responses and the environmental scan of relevant literature and content. The below question is what promoted the responses:

Have you noticed any changes, emerging trends, or patterns surfaced in the context of youth career development or/and in the needs and preferences of the youth (ages 11-17) you support? If yes, what changes, emerging trends, or patterns are you most curious, excited, intrigued by, or nervous about?

Please review the following list and rank their potential for POTENTIAL IMPACT and their RELEVANCE to you and your context, using the 7-point scales.

There were three areas in which the identified trends influence. One area was related directly to youth themselves, the second was the broad field of career development, and the final area was trends relating to the broad workforce.

Trend Impact:

We will start by considering the potential impact of the identified trends. Potential Impact is defined as trends, patterns, or changes that you believe will influence or cause change in the way you offer and provide services in the next 5-10 years.

1- No impact: I do not expect the proposed trend to have any significant impact or influence on the field of youth career development.

2- Very low impact: The potential impact of this trend is minimal and will have limited effects on the field of youth career development.

3- Low impact: This trend has relatively small potential impact and will have a modest effect on the field of youth career development.

4- Moderate impact: This trend has moderate potential impact but will have a noticeable effect on the field of youth career development.

5- High impact: This trend has significant potential impact and will have substantial effects on the field of youth career development.

6- Very high impact: This trend has substantial potential impact and will have a strong and transformative effect on the field of youth career development.

7- Extremely high impact: This trend has exceptional and profound potential impact and will have far-reaching and revolutionary effects on the field of youth career development.

Complete list of trends

Trend	Description
Interest in Trades	Growing enthusiasm among young individuals for trade careers.
Anxiety about Career Options	Youth are concerned about the way things are changing and about finding meaningful employment.
Anxiety about Finances	Youth are concerned about personal finances and therefore what their salary will be.
Cost Effective Career Development	Youth focused on affordable pathways for career development (example: Less inclined to take on school debt).

Mental Health Struggles	Youth are struggling with their mental wellbeing and present with increased anxiety, loneliness, and other mental health elements.
Interest in Entrepreneurship	Growing enthusiasm among young individuals for entrepreneurial ventures as a viable and attractive career option.
Highly Diverse Generation (ES)	Generation Z (outside of Gen A) is the most diverse generation.
Lack of connection between career development and educational institutions	Educational institutions are unaware or not interested in working with career development professionals and leveraging their expertise and the services they offer.
Racial equity and inclusion strategies (ES)	Recognition of the historical and institutional barriers for equity seeking communities and adapting approaches and content to support equitable learning opportunities.
Relational Approach (ES)	Emphasizing the significance of relationships between educators and students, this trend underscores the value of mentorship and personalized guidance to enhance the learning experience.
Importance of Lifelong Learning (ES)	To support success, supporting youth to continuously engage in skill development.
Youth Centric Approach (ES)	Focusing on the needs, preferences, and interests of students, this trend advocates tailoring educational experiences to individual learners, fostering engagement and relevance in the learning process.
Competency Based Education (ES)	This trend promotes a personalized learning journey where students advance upon mastering specific competencies, ensuring a more flexible and individualized educational experience.
Importance of Soft Skills (ES)	Denotes the growing recognition of the significance of interpersonal, communication, and emotional intelligence skills alongside technical expertise. This trend underscores the understanding that qualities like teamwork, adaptability, and effective communication are integral for success in the modern workplace, emphasizing a holistic approach to professional development.
Intercultural Skills (ES)	Recognizing the global movement of talent, this trend emphasizes the importance of diversity and multicultural skills.
Collaborative Learning (ES)	A trend promoting active student engagement, teamwork, and shared exploration, enriching the educational experience through collaborative problem-solving and the exchange of ideas.
Increasing Economic Divide	Youth (and their families) are increasingly struggling to meet basic needs and face financial challenges.
Hybrid/Online/Remote Work	Evolution in workplace practices toward hybrid models, incorporating remote and online work arrangements.
Rapidly Changing Labour Market	The increasing rate and scale of change/transformations in the job market

Artificial intelligence	Automation and changing jobs resulting in the reshaping the labor market
Skilled Labourers Shortage	The widespread shortage of individuals possessing specific, specialized skills needed in various industries.
Skill Economy (ES)	The shift in focus to skills as currency in the job market, emphasizing the importance of diverse and adaptable skill sets for career success.
Rise of Gig Economy (ES)	The trend highlights the increasing prevalence of freelance and short-term work, encouraging flexibility and entrepreneurship in career choices.
Increased Immigration Rates (ES)	Demographic trend relating to the increased rate of immigrant and refugee entering Canada.
Digital Literacy (ES)	This trend refers to the skill of understanding and navigating digital tools and platforms.
Ability to engage in Self-Directed Learning (ES)	This trend underscores the importance of youth being able to take initiative and responsibility for their own learning journey.

This is the format for the Trend Impact section within the online software. It will incorporate the entire above trend list

	1 - No Impact	2- Very Low Impact	3- Low Impact	4- Moderate Impact	5- High Impact	6- Very High Impact	7- Extermely High Impact
Interest in Trades: Growing enthusiasm among young individuals for trade careers. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Youth Starting Working at Younger Age: Increasing trend of young people entering the workforce earlier. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxiety about Career Options: Youth are concerned about the way things are changing and about the prospects of finding meaningful employment. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxiety about Finances: Youth are concerned about personal finances and therefore what their salary will be. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost Effective Career Development: Youth focused on affordable pathways for career development (example: Less inclined to take on school debt). <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Struggle with Social Skills: Youth show a diminishing ability to effectively engage and communicate in interpersonal relationships. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Trend Relevance

Using the same list of trends, you will now ‘score’ them based on relevance. Relevance is defined as the level of importance or connection to the career educator's organization and the youth you are currently supporting.

1- Not at all relevant: This trend is completely irrelevant and has no connection to my context or current experiences.

2- Slightly relevant: This trend has minimal relevance and its connection to my context and current experiences is limited and relatively unimportant.

3- Somewhat relevant: This trend holds moderate relevance. I think that there are other trends that are more directly related to my context and current experiences and carry greater significance.

4- Moderately relevant: This trend is moderately relevant and has some importance within my

context and current experiences.

5- Relevant: This trend is relevant and holds a significant degree of importance in relation to my context and current experiences.

6- Very relevant: This trend is highly relevant, and I consider it essential for understanding my context and current experiences.

7- Extremely relevant: This trend is of utmost relevance and is crucial or indispensable in fully comprehending my context and current experience.

This is the format for the Trend Relevance section within the online software. It will incorporate the entire above trend list

	1 - Not at all Relevant	2- Slightly Relevant	3- Somewhat Relevant	4- Moderately Relevant	5- Relevant	6- Very Relevant	7- Extremely Relevant
Interest in Trades: Growing enthusiasm among young individuals for trade careers. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Youth Starting Working at Younger Age: Increasing trend of young people entering the workforce earlier. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxiety about Career Options: Youth are concerned about the way things are changing and about the prospects of finding meaningful employment. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxiety about Finances: Youth are concerned about personal finances and therefore what their salary will be. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost Effective Career Development: Youth focused on affordable pathways for career development (example: Less inclined to take on school debt). <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Struggle with Social Skills: Youth show a diminishing ability to effectively engage and communicate in interpersonal relationships. <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Long Word Question:

Have you implemented or seen any new strategies, approaches, or techniques as a career development professional in response to this trend?

You did it!

Thank you for taking the time to complete Survey 3 (Getting Serious- Part 2).

This is the final survey and is focused on helping to move toward a consensus of what this group of professionals' view as the most important outcomes and trends which are most relevant and have the most potential impact. Responses here analyzed using the same process as used on responses to survey 2.

The next step is the development of a theoretical framework, the expectation is that this will take several months, at which point a proposed model will be shared with you.

Thank you again for participating in this project. Your insights, perspectives, and experiences are vital to help the field of youth career development continue to grow and thrive. We are in this together.

Just as a reminder, your participation in this is completely voluntary! If you have any questions or concerns about this project or your participation in it, please feel free to contact Joel Murphy during regular work hours by phone (XXX) XXX-XXXX or anytime by email jmurphy@stfx.ca.

Thank you and be in touch soon!

Appendix K: Development of Future Narrative

Trend	Retroductive Reasoning Explanations	Possible Future Contextual Narrative
Anxiety about Career Options	This trend connects and intersects with several other trends (rapidly changing labour market, anxiety about finances). However, it helps to articulate a significant future contextual layer, which warrants consideration.	In 2030, youth must navigate a rapidly changing and increasingly competitive labour market (infra-structure). Beyond this concerns finding stable, financially advantageous, full-time employment (infra-structure), negatively affects the mental health of many young people (Individual).
Anxiety about Finances	This trend translated well into an articulate and succinct future contextual layer.	In 2030, youth are increasingly considering and aware of their financial needs, which has direct effect on their mental wellbeing and decision making regarding possible employment and career (Individual)

Mental Health Struggles	This represents a broad but clear contextual layer. It would be possible to extrapolate out key contributors to mental health struggles, but for this research this is not required.	In 2030, youth will struggle with mental health and wellbeing (individual)
Racial equity and inclusion strategies (ES)	This trend and its description articulate a clear and important contextual layer. The language used in the narrative was intended to describe a future context where it is expected that these strategies are in place.	In 2030, educational institutions are challenged to address systems of oppression and to adapt their educational approaches to ensure more inclusive and equitable learning experiences (Interpersonal/Institutional).
Relational Approach (ES)	Like the trend of youth-centric approach. This trend represents contextual layers relevant to educational approach (interpersonal/institutional) which is informed by the changing expectations of youth (individual).	In 2030, youths' expectations of educators will be one where they desire for a more relational and empathetic approach (Individual). Educators strive to develop trust and respect, as a foundational component to supporting their educational practice (Interpersonal/Institutional)

Youth Centric Approach (ES)	<p>Retroductive thinking led to the consideration of both the educational (interpersonal/institutional) contextual layer represented within this trend and the individual contextual layer, represented in the implicit perspective of young people. The identification of the two distinct contextual layers provided a greater depth of understanding of the future context represented by this trend.</p>	<p>In 2030, youth will expect educators to support their individual needs (individual), resulting in the increased need for personalized educational experience (Interpersonal & Institutional)</p>
Importance of Soft Skills (ES)	<p>This trend represents a straightforward future contextual layer. While the term ‘soft skills’ is quite broad, for the purpose of this research a deeper level of description and analysis of specific skills was not required. Considering this from a career</p>	<p>In 2030, employers, while valuing technical (hard skills), are equally interested in what ‘soft skills’ possible employees hold (Infra-structural)</p>

development perspective, it represents an important contextual layer which can shape both approach and content of interventions.

Intercultural Skills (ES)	<p>Retroductive thinking led to the surfacing of three distinct but important future contextual layers relevant to career educators.</p> <p>Underlying this trend is the increased cultural diversity present within Nova Scotia, which then holds relevance to all layers of the 4 I's framework, as articulated within the narrative.</p>	<p>In 2030, Nova Scotia will be increasingly composed of individuals from around the world (infra-structural), all bringing their cultural traditions and worldviews into their places of education (Interpersonal & Institutional) and places of work (Individual).</p>
Increasing Economic Divide	<p>Retroductive thinking helped to not only validate this trend as a contextual layer, but also helped to extrapolate out an individual contextual layer resulting from this trend. This contextual layer is important for career development as it again emphasizes the human</p>	<p>In 2030, the economic struggles of middle-lower class families have increased (Infra- Structural). Many youths and their families struggle with transportation, to find affordable housing, and meet basic household needs (food, etc.) (individual).</p>

condition, which is present and directly influences educational activities.

Hybrid/Online/Remote Work

This trend is well established and shaping the workplace context now. An important contextual layer not captured within this trend, which was extrapolated out, was the implication of this infra-structural layer on the skills that individuals will need. This individual layer is important as it has a direct connection to educational priorities (concept of motivation).

In 2030, many workplaces will have adopted hybrid, remote, and online approaches to employment (Infra-structural), which has established the important skill set of personal accountability and internal motivation for employees and they no longer work in physical locations (individual).

Rapidly Changing Labour Market

This trend represents a clear future contextual layer. Further analysis and critique of what is causing the rate of change to occur, has been done. Forces such as technology, conflict, natural disasters, geo-politics, and

In 2030, the nature of the labour force is one of constant change. Employment opportunities and the skills they require are constantly changing and in flux (Infra Structural).

economics all have been identified as contributors labour market changes. However, for this research's purpose, the broad future contextual layer of rapid change is formative enough to help direct the realist review.

AI Impact on Labour Market

The contextual implications of this trend were greatly informed by current literature surrounding artificial intelligence and future of work. Specifically, the changes which AI will bring to the workforce (automation, job transformation), but also the emerging skill of individuals needing to be able to work with and leverage AI technology.

These are two future contextual layers which have direct implication for career development professionals.

In 2030, the work experience will be shaped in every way by AI technology resulting in the loss and development of new employment opportunities (Infra Structural). In many places of work, employees will be expected to have a level of familiarity and comfortability in working with various AI technology (individual).

Digital Literacy (ES)	<p>Like the trend of self-directed learning, the broader future infra-structural layer of digitalization, was important to establish the importance of digital literacy.</p>	<p>In 2030, the skill of understanding current and emerging technology, coupled with competence in their use, is essential (Individual) to ensure individuals can navigate a highly digitalized workplace (infra-structural).</p>
<p>Ability to engage in Self-Directed Learning (ES)</p>	<p>A significant force elevating this trend is the rapid rate of change, which was also identified as one of the top trends. Its inclusion here helps to confirm the nature of the individual layer of self-directed learning.</p>	<p>In 2030, the skill and ability to engage in self-directed learning is integral to navigate the scale and rate of change occurring within the labour market (infra-structure). The skill of self-directed learning supports employee's ability to maintain current skills and the development of new skills, supporting positive career advancement (individual)</p>

Appendix L: Full Realist Review

Citation	Empiric al or Theoreti cal	Relevant Theories
Ahmet, K. (2024). Empirical Investigation of the Career Construction Model of Adaptation. <i>Anatolian Journal of Education</i> , 9(1), 195–214.	Empiric al	Career Construction Model
Aley, M. R., & Levine, K. J. (2020). From Whom Do Young Adults Actively Seek Career Information? An Ego-network Analysis of Vocational Anticipatory Socialization. <i>Communication Studies</i> , 71(2), 351–367. https://doi.org/10.1080/10510974.2020.1735465	Empiric al	Vocational Anticipatory Socialization Career Choice Confidence
Amalba, A., Abantanga, F. A., Scherpbier, A. J. J. A., & van Mook, W. N. K. A. (2017). Community-based education: The influence of role modeling on career choice and practice location. <i>Medical Teacher</i> , 39(2), 174–180. https://doi.org/10.1080/0142159X.2016.1246711	Empiric al	Community- Based Education and Service Role Modeling
Amir, T., & Gati, I. (2006). Facets of Career Decision-Making Difficulties. <i>British Journal of Guidance & Counselling</i> , 34(4), 483–503. https://doi-org.ezproxy.msvu.ca/https://taylorandfrancis.metapress.com/link.asp?id=RQL7U30064T032J5	Empiric al	Adaptive readiness Hope Theory Career Construction Theory

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- Anderson-Butcher, D., Stetler, E. G., & Midle, T. (2006). A case for Empiric Community-
expanded school-community partnerships in support of positive youth al Based Learning
development. *Children & Schools*, 28(3), 155–163.
<https://doi.org/10.1093/cs/28.3.155>
-
- Ashby, J. S., & Schoon, I. (2012). Living the Dream? A Qualitative Empiric Life-Span Model
Retrospective Study Exploring the Role of Adolescent Aspirations al of Motivation
across the Life Span. *Developmental Psychology*, 48(6), 1694–1706. Social
<https://doi.org/10.1037/a0027297> psychology
-
- Betz, N. E., & Voyten, K. K. (1997). Efficacy and Outcome Empiric Self-efficacy
Expectations Influence Career Exploration and Decidedness. Career al theory
Development Quarterly, 46(2), 179–189. ERIC.
-
- Bhatia, K.V., Pathak-Shelat, M. & Arora, P. (2024). DIY Education in Empiric Self-
the Digital Era: Youth-Driven Learning Strategies and Curricula for al Determination
the Future of Work Opportunities. *Education and Information Theory*
Technologies, 29(2), 1407–1426. [https://doi.org/10.1007/s10639-023-
11750-4](https://doi.org/10.1007/s10639-023-11750-4) Personalized
Education
Design Thinking
Peer-Based
learning
Iterative Learning
Processes
-
- Bhatt, I., & MacKenzie, A. (2019). Just Google it! Digital literacy and Empiric Epistemologies
the epistemology of ignorance. *Teaching in Higher Education*, 24(3), al of Ignorance
302–317. <https://doi.org/10.1080/13562517.2018.1547276>
-

		Social Theory of Literacy
Borgen, W., Buchanan, M., Mathew, D., & Nishikawara, R. (2021). Career Transition of Immigrant Young People: Narratives of Success. <i>Canadian Journal of Counselling & Psychotherapy / Revue Canadienne de Counseling et de Psychothérapie</i> , 55(1), 158–182. https://doi.org/10.47634/cjcp.v55i1.69129	Empiric al	Social Cognitive Theory Life Designing Paradigm
Bouckenooghe, D., Kanar, A., & Klehe, U.-C. (2022). A latent transition analysis examining the nature of and movement between career adaptability profiles. <i>Journal of Vocational Behavior</i> , 136, N.PAG. https://doi.org/10.1016/j.jvb.2022.103728	Empiric al	Career construction theory Person-Centred Approach Regulatory focus theory Career Adaptability
Bradford, E., & Lyddon, W. J. (1994). Assessing adolescent and adult attachment: An update. <i>Journal of Counseling & Development</i> , 73(2), 215–219. https://doi.org/10.1002/j.1556-6676.1994.tb01739.x	al	Theoretic Attachment Theory
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Colburn, A. A. N., & Herrera, I. M. (2022). Over the Rainbow: A Career Development Group for LGBTQ+ Teens. <i>Journal of College Access</i> , 7(1), 116–129.	Theoretic Group Career Counseling model
Colvert, A. (2022). Dreams of time and space: Exploring digital literacies through playful transmedia storytelling in school. <i>Literacy</i> , 56(1), 59–72. https://doi.org/10.1111/lit.12271	Empirical Digital Literacy
Conkel-Ziebell, J. L., Gushue, G. V., & Turner, S. L. (2019). Anticipation of Racism and Sexism: Factors Related to Setting Career Goals for Urban Youth of Color. <i>Journal of Counseling Psychology</i> , 66(5), 588–599. https://doi.org/10.1037/cou0000357	Empirical Career Decision Self-Efficacy Outcome Expectations Career Self-Management Framework Social Cognitive career theory
Conkel-Ziebell, J. L., Gushue, G. V., & Turner, S. L. (2019). Anticipation of Racism and Sexism: Factors Related to Setting Career Goals for Urban Youth of Color. <i>Journal of Counseling Psychology</i> , 66(5), 588–599. https://doi.org/10.1037/cou0000357	Empirical Career Self-Management Social Cognitive Career Theory

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Esters, L. T., & Retallick, M. S. (2013). Effect of an Experiential and Work-Based Learning Program on Vocational Identity, Career Decision Self-Efficacy, and Career Maturity. <i>Career & Technical Education Research</i> , 38(1), 69–83. https://doi.org/10.5328/cter38.1.69	Empiric Student-centered al learning Psychological Constructivism Experiential learning
Evans, C. (2016). Moving away or staying local: The role of locality in young people’s ‘spatial horizons’ and career aspirations. <i>Journal of Youth Studies</i> , 19(4), 501–516. APA PsycInfo. https://doi.org/10.1080/13676261.2015.1083955	Empiric Theory of Social al Structures

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<p>Feldt, R., Bejar, M., Lee, J., & Louison, R. (2021). Vocational Identity Resources in Emerging Adulthood: Associations With Facets of Dispositional Mindfulness. <i>Career Development Quarterly</i>, 69(1), 2–18. https://doi.org/10.1002/cdq.12245</p>	<p>empirica Social Cognitive Career Theory Dispositional mindfulness</p>
<p>Felsman, D. E., & Blustein, D. L. (1999). The Role of Peer Relatedness in Late Adolescent Career Development. <i>Journal of Vocational Behavior</i>, 54(2), 279–295.</p>	<p>Empiric al Psychology of Working Theory Identity formation</p>
<p>Fiebig, J. N. (2008). Gifted American and German adolescent women: A longitudinal examination of attachment, separation, gender roles, and career aspirations. <i>High Ability Studies</i>, 19(1), 67–81. Academic Search Premier.</p>	<p>Empiric al Student-Centred Learning</p>
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<p></p>	<p>tor Professional Identity Theory Concept of critical life events Ecological Systems theory Experiential Learning Theory</p>

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Gfrörer, T., Stoll, G., Rieger, S., & Nagengast, B. (2024). The effects of unstructured out-of-school engagement in science on adolescents' vocational interests, occupational aspirations, competencies, school grades, and ability self-concepts. <i>Journal of Educational Psychology</i> , 116(5), 742–761. https://doi.org/10.1037/edu0000867	Empirical	Theory of Vocational Personalities and Work Environments
Gianakos, I. (1999). Patterns of Career Choice and Career Decision-Making Self-Efficacy. <i>Journal of Vocational Behavior</i> , 54(2), 244–258.	Empirical	Social Cognitive Career Theory Self-Concept Theory Self-Efficacy theory
Godden, L. (2015). Youth Unemployment and Localized Impact: A Career Studies Teacher's Story. <i>Exceptionality Education International</i> , 25(1), 136–157. https://doi-org.ezproxy.msvu.ca/https://ir.lib.uwo.ca/eei/vol25/iss1/7/	Empirical	Ecological systems theory

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<p>Guichard, J., Pouyaud, J., & de Calan, C. (2012). Identity Construction and Career Development Interventions with Emerging Adults. <i>Journal of Vocational Behavior</i>, 81(1), 52–58. https://doi.org/10.1016/j.jvb.2012.04.004</p>	<p>Theoretical System of Subjective Identity Forms</p>
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<p>Hirschi, A. (2009). Career Adaptability Development in Adolescence: Multiple Predictors and Effect on Sense of Power and Life Satisfaction. <i>Journal of Vocational Behavior</i>, 74(2), 145–155.</p> <p>https://doi.org/10.1016/j.jvb.2009.01.002</p>	<p>Empiric Career Adaptability Positive Youth Development Motivational System Theory Human Capital</p>
<p> Holding, A. C., St-Jacques, A., Verner-Filion, J., Kachanoff, F., & Koestner, R. (2020). Sacrifice—but at what price? A longitudinal study of young adults’ sacrifice of basic psychological needs in pursuit of career goals. <i>Motivation & Emotion</i>, 44(1), 99–115.</p> <p>https://doi.org/10.1007/s11031-019-09777-7</p>	<p>Empiric Motivational al Theory of Life- Span Development Self- Determination Theory Basic</p>

		Psychological
		Needs Theory

Howard, K. A. S., & Ferrari, L. (2022). Social-emotional learning and Theoretic		Lifespan
career development in elementary settings. British Journal of	cal	Developmental
Guidance & Counselling, 50(3), 371–385.		Models
https://doi.org/10.1080/03069885.2021.1959898		System models
		Ecological
		Systems Theory
		Socio-Historical
		Theory
		Social and
		Emotional
		Learning

Howard, K. A. S., & Ferrari, L. (2022). Social-emotional learning and Theoretic		Career Choice
career development in elementary settings. British Journal of	cal	and Attainment
Guidance & Counselling, 50(3), 371–385.		Model
https://doi.org/10.1080/03069885.2021.1959898		Social and
		Emotional
		Learning
		lifespan
		developmental
		models
		Transformative
		SEL

	Developmental contextualism
	socio-historical theory
	psychosocial theory of development of Erikson

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Hynes, K. (2012). Next steps for research and practice in career programming. <i>New Directions for Youth Development</i> , 2012(134), 107–114. https://doi.org/10.1002/yd.20019	Theoretic Educational Scaffolding Career Exploration
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<p>Ketterson, T. U., & Blustein, D. L. (1997). Attachment Relationships and the Career Exploration Process. <i>Career Development Quarterly</i>, 46(2), 167–178. ERIC.</p>	<p>Empiric Attachment Theory al Theory</p>
<p>Khan, N., Sarwar, A., Chen, T. B., & Khan, S. (2022). Connecting Digital Literacy in Higher Education to the 21st Century Workforce. <i>Knowledge Management & E-Learning</i>, 14(1), 46–61. https://doi.org/10.34105/j.kmel.2022.14.004</p>	<p>Empiric Digital Literacy al</p>
<p>Kim, H. Y., & Kim, G. U. (2018). The Effect of Self-Directedness in Learning on Employment Readiness of Undergraduates in South Korea. <i>Journal of Education and Learning</i>, 7(3), 125–133.</p>	<p>Empiric Self-Directedness al Directedness</p>
<p>Kim, S. (2018). “It was kind of a given that we were all multilingual”: Transnational youth identity work in digital translanguaging. <i>Linguistics & Education</i>, 43, 39–52.</p>	<p>Empiric Theories of Translanguaging al Semiotic</p>
<p>https://doi.org/10.1016/j.linged.2017.10.008</p>	<p>Participatory</p>

	Social
	Practice/Multimedial Crafting
Kivunja, C. (2015). Teaching Students to Learn and to Work Well with 21st Century Skills: Unpacking the Career and Life Skills Domain of the New Learning Paradigm. <i>International Journal of Higher Education</i> , 4(1), 1–11.	Theoretical Framework for 21st Century Learning Self-Directed Learning
Kolbert, J. B., Hilts, D., Crothers, L. M., & Nice, M. L. (2021). School Counselors' Use of Marcia's Identity Status Theory for Career Advisement and Consultation and Collaboration. <i>Journal of School Counseling</i> , 19(21).	Empirical Four Identity Statuses Identity Commitment
Korobkova, K. A., & Rafaflow, M. (2016). Navigating Digital Publics for Playful Production: A Cross-Case Analysis of Two Interest-Driven Online Communities. <i>Digital Culture & Education</i> , 8(2), 77–89.	Empirical Transmedial Ecologies
Kvitkovičová, L., Umemura, T., & Macek, P. (2017). Roles of attachment relationships in emerging adults' career decision-making process: A two-year longitudinal research design. <i>Journal of Vocational Behavior</i> , 101, 119–132. <i>Education Research Complete</i> . https://doi.org/10.1016/j.jvb.2017.05.006	Empirical Attachment Theory Self-concept clarity
Lac, V. T. (2017). In Real Time: From Theory to Practice in a Critical Race Pedagogy Classroom. <i>I.e.: Inquiry in Education</i> , 9(1).	Empirical Critical Race Pedagogy

Lai, A. H. Y., Wong, E. L. Y., Lau, W. S. Y., Tsui, E. Y. L., & Leung, C. T. C. (2024). Life-World Design: A career counseling program for future orientations of school students. <i>Children and Youth Services Review</i> , 161, 1–13. https://doi.org/10.1016/j.chidyouth.2024.107627	Empiric Skills learning and development approach Life course perspective on career development Process Theory of Future Orientation
Lapan, R. T., Marcotte, A. M., Storey, R., Carbone, P., Loehr, L. S., Guerin, D., Thomas, T., Cuffee, G. D., Coburn, A., Pfeiffer, T., Wilson, L., & Mahoney, S. (2016). Infusing career development to strengthen middle school English language arts curricula. <i>The Career Development Quarterly</i> , 64(2), 126–139. https://doi.org/10.1002/cdq.12046	Empiric Agency Positive Future Orientation
Laughland-Booÿ, J., Newcombe, P., & Skrbiš, Z. (2017). Looking forward: Career identity formation and the temporal orientations of young Australians. <i>Journal of Vocational Behavior</i> , 101, 43–56. https://doi.org/10.1016/j.jvb.2017.04.005	Empiric Time Perspective Four Identity Statuses
Lazarides, R., Dicke, A.-L., Rubach, C., & Eccles, J. S. (2020). Profiles of Motivational Beliefs in Math: Exploring Their Development, Relations to Student-Perceived Classroom	Empiric Expectancy-Value Theory Self-

Characteristics, and Impact on Future Career Aspirations and Choices. Journal of Educational Psychology, 112(1), 70–92. https://doi.org/10.1037/edu0000368	Determination Theory Stage- Environment Fit Theory
Lent, R. W., Wang, R. J., Morris, T. R., Ireland, G. W., & Penn, L. T. (2019). Viewing the Career Indecision Profile within a theoretical context: Application of the social cognitive career self-management model. Journal of Counseling Psychology, 66(6), 690–700. https://doi.org/10.1037/cou0000367	Social Cognitive Career Theory Career Self- Management Model
Li, X., & Que, H. (2016). Integration and Career Challenges of Newcomer Youth in Newfoundland in Canada. FIRE: Forum for International Research in Education, 2(3), 44–62.	Empiric Ecological al systems theory
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<p>Lyons, H. Z., Brenner, B. R., & Lipman, J. (2010). Patterns of career and identity interference for lesbian, gay, and bisexual young adults. <i>Journal of Homosexuality</i>, 57(4), 503–524.</p> <p>https://doi.org/10.1080/00918361003608699</p>	<p>Empiric Social Cognitive al Career Theory Social Cognitive Theory</p>
<p>Mameli, C., Molinari, L., & Passini, S. (2019). Agency and Responsibility in Adolescent Students: A Challenge for the Societies of Tomorrow. <i>British Journal of Educational Psychology</i>, 89(1), 41–56. https://doi.org/10.1111/bjep.12215</p>	<p>Empiric Student agency al Educational responsibility Basic Psychological Needs Career Decision- Making Self- Efficacy</p>
<p>Mameli, C., Molinari, L., & Passini, S. (2019). Agency and Responsibility in Adolescent Students: A Challenge for the Societies of Tomorrow. <i>British Journal of Educational Psychology</i>, 89(1), 41–56. https://doi.org/10.1111/bjep.12215</p>	<p>Empiric Self- al Determination Theory Basic Psychological Needs Theory</p>

		Self-efficacy
		Agency
Matli, W., & Ngoepe, M. (2021). Extending the unified theory of acceptance and use of technology with the problems of digital access to (re)connect the disconnected NEETs. <i>Innovation: The European Journal of Social Sciences</i> , 1–20. https://doi.org/10.1080/13511610.2021.1978281	Empirical	Structuration theory Unified Theory of Acceptance and Use of Technology
Mihailidis, P., & Cohen, J. N. (2013). Exploring Curation as a Core Competency in Digital and Media Literacy Education. <i>Journal of Interactive Media in Education</i> .	Empirical	Self-Curation
Miller, S. M. (2013). A Research Metasynthesis on Digital Video Composing in Classrooms: An Evidence-Based Framework toward a Pedagogy for Embodied Learning. <i>In Journal of Literacy Research</i> (Vol. 45, Issue 4, pp. 386–430). https://doi.org/10.1177/1086296X13504867		Socio-Cultural Theory Embodied cognition
Napolitano, C. M., Hoff, K. A., Ming, C. W. J., Tu, N., & Rounds, J. (2020). Great expectations: Adolescents' intentional self-regulation predicts career aspiration and expectation consistency. <i>Journal of Vocational Behavior</i> , 120. https://doi.org/10.1016/j.jvb.2020.103423	Empirical	Life-Span Development Perspective/Psychology Intentional Self-Regulatory Skills Career Aspirations

		Theory of Vocational Personalities Social Cognitive Career Theory
Negru-Subtirica, O., Pop, E. I., & Crocetti, E. (2015). Developmental trajectories and reciprocal associations between career adaptability and vocational identity: A three-wave longitudinal study with adolescents. <i>Journal of Vocational Behavior</i> , 88, 131–142. https://doi.org/10.1016/j.jvb.2015.03.004	empirica l- survey	Career Adaptability Vocational Identity
Nelson, E. L., Perry, M., & Rogers, T. (2020). Introducing Offlineness: Theorizing (Digital) Literacy Engagements. <i>Journal of Literacy Research : JLR.</i> , 52(1), 101–107. https://doi.org/10.1177/1086296X19898003	Theoret cal	Offlineness Generational Theory Post-Internet Digital Monism
Nota, L., Soresi, S., Ferrari, L., & Ginevra, M. C. (2014). Vocational designing and career counseling in Europe: Challenges and new horizons. <i>European Psychologist</i> , 19(4), 248–259. https://doi.org/10.1027/1016-9040/a000189	Theoret cal	Social Cognitive Career Theory Life Design Theory of Circumscription and Compromise and Self- Creation

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		Action Theory
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Appendix M: Knowledge Translation- Research Brief

THE FUTURES-ORIENTED FRAMEWORK FOR YOUTH CAREER DEVELOPMENT

Research Overview

The intention and purpose of this research was to develop a futures-oriented theoretical framework composed of theories, which could support career development professionals (CDPs) to proactively consider and design youth career development interventions and programs for the year 2030. It was developed using insights of CDP's working in Nova Scotia.

Trend	Outcome
Anxiety about Career Options	Increased Confidence
Anxiety about Finances	Exposure to relevant resources
Mental Health Struggles	Increased Self-Awareness
Racial equity and inclusion strategies (ES)	Career Exploration
Relational Approach (ES)	Understanding and identification of Transferable Skills
Youth Centric Approach (ES)	Exposure to diverse career options
Importance of Soft Skills (ES)	Connection with Trusted Adults
Intercultural Skills (ES)	Identification of Personal Strengths and Skills
Increasing Economic Divide	Insights to Personal Passions
Hybrid/Online/Remote Work	Understanding of training and Education options
Rapidly Changing Labour Market	
AI Impact on Labour Market	
Digital Literacy (ES)	
Ability to engage in Self-Directed Learning (ES)	

Futures-Oriented Theoretical Framework

Through 9 phases of data collection and analysis (including 3 online survey) the identification of five broad theories which are uniquely relevant to supporting the identified outcomes in light of the trends identified. The framework is proposed that when applied in concert, these theories provide a comprehensive, multilayered understanding of how career development outcomes can be meaningfully shaped within future contextual layers. Recognizing that every context is unique, this broad framework is meant to be flexible and adaptive to support interventions that are responsive to local needs and contexts.

<p>Critical Digital Literacy (CDL)</p>	<p>What it means: Goes beyond just knowing how to use technology. CDL is about understanding how digital tools, algorithms, and online spaces shape opportunities—and recognizing bias and inequity in digital environments.</p> <p>Why it matters: By 2030, most career exploration, applications, and training will happen online. CDL helps youth critically navigate these spaces and equips CDPs to design programs that close digital gaps.</p>
<p>Basic Psychological Needs Theory</p>	<p>What it means: Humans thrive when three needs are met:</p> <ul style="list-style-type: none"> ● Autonomy (choice and ownership) ● Competence (confidence and mastery) ● Relatedness (connection and belonging) <p>Why it matters: Supporting these needs boosts mental health, adaptability, and motivation, which is crucial as youth face anxiety, hybrid work, and rapid labour market changes.</p>
<p>Emotional Intelligence (EQ)</p>	<p>What it means: The ability to recognize, understand, and manage emotions (our own and others’).</p> <p>Why it matters: Youth entering hybrid, AI-driven workspaces need emotional skills to build resilience, self-awareness, and adaptability. EQ also supports soft skills like communication, empathy, and teamwork—highly valued in future workplaces.</p>
<p>Intersectionality Theory</p>	<p>What it means: Recognizes that youth experience the world differently depending on overlapping factors such as race, gender, class, and culture.</p> <p>Why it matters: Helps CDPs design equity-informed programs, recognize systemic barriers, and foster intercultural humility. By 2030, as Canada’s workforce becomes increasingly diverse, this perspective will be essential.</p>
<p>Possible Selves Theory</p>	<p>What it means: Explores how people imagine their future selves—the ones they hope to become, expect to become, or fear becoming.</p> <p>Why it matters: Supports youth in building motivation, resilience, and realistic yet hopeful visions for the future of work. CDPs can use this to help youth set meaningful goals and navigate uncertainty.</p>

Recommendations

Grounded in the research (and aligned with academic/policy literature), we highlight six actionable recommendations, three for career development organizations and three for governments/funders.

For Career Development Organizations

Adopt Futures Literacy as a Core Competency

Build anticipatory, systems, and reflective capacities. Consider micro-credentials (e.g., adaptive leadership, futures thinking) with post-secondary partners.

Evaluate Programs for Futures-Orientation

Use futures-focused assessment (e.g., UNESCO futures literacy, Futures Consciousness Scale) to ensure services meet both present and emerging needs.

Advocate for Career Development in Education Policy

Work with system partners to embed career development across K–12 and post-secondary curricula as lifelong, interdisciplinary learning.

For Government and Funding Bodies

Invest in Participatory Foresight with Youth

Support creative, rigorous methods (e.g., arts-based, scenario-based, YPAR) that build agency, imagination, and innovation.

Incentivizes Intersectoral Collaboration

Use policy and funding levers to link education, social services, health, justice, and the private sector into a coherent career development ecosystem.

Evolve Evaluation Strategies

Complement traditional metrics with approaches like developmental evaluation, contribution analysis, appreciative inquiry, SROI, and social impact assessment to reflect expanded notions of work, purpose, and wellbeing.

Conclusion

These recommendations aim to translate the framework into practical shifts at multiple levels of Nova Scotia's career development system. They are intended to provoke imagination, support adaptation, and sustain meaningful change, not to prescribe one "right" model. This research was motivated by a desire to help contribute to improving career development services for youth, ensuring that programs remain responsive, resilient, and forward-thinking in an era of rapid social, technological, and economic change.

Thank you for your interest in this research. The perspectives, experiences, and insights of Nova Scotian career development professionals shaped this framework and the recommendations that follow. This project would not have been possible without the commitment and openness of these individuals.

If you are interested in learning more about the framework and subsequent research, or applying it to your context, please reach out to Joel Murphy at Joel.murphy@acadiiau.ca.