

University Students in Canada and Contextual Considerations:

A Rapid Scoping Review

by

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Dedication

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Introduction

The complex needs of university students are (and have been) present across the (globalized) Canadian landscape and continue to rapidly evolve with conditions and dynamic contextual settings in which students (and instructors) are situated. Although the importance of context is widely accepted and commonly emphasized across education literature (e.g., in bridging theory and practice), the complexity of context as a concept is evident through fragmented contextual discourse and understanding. Considering the complexities of context and its interrelated nature with other variables, a fragmented literature landscape and clarity issues surrounding terminology, distinct landscape in which university students in Canada are situated, along with diverse and evolving student needs: the aim of this study is to provide a preliminary exploration into what is known (and what is not known) about the concept of contextual considerations relating to students enrolled in Canadian public university institutions, and the practical application of these considerations in university teaching practice.

This review was modified from the standard scoping review process with the implementation of a rapid approach and structure which caters to a master's thesis project. The theoretical framework critical social theory and conceptual frameworks (1) adult education and lifelong learning discipline and (2) Bronfenbrenner's bioecological theory (process-person-context-time [PPCT] model) has been utilized. Scholarly literature has been primarily considered for this review (e.g., peer-reviewed journal articles), those of which were available in English and published between 2015 to 2025. Included sources offer discourse surrounding ideas of context and university students in public universities across the Canadian provinces. With only

one reviewer for this study, a few consultations were made with the project supervisor and a research librarian to support the project. A broad Novanet catalogue search was conducted and titles, abstracts, and full-text sources were screened. Data from included sources were extracted utilizing an extraction form in Excel. Data analysis was conducted through descriptive statistical analysis and descriptive content analysis, presented in tables added to the appendices. The PRISMA-ScR reporting criteria with updated guidance by Peters et al. (2020) supported in the structure of the following thesis.

CHAPTER 1: Literature Review

1.1) Background Landscape of Adult Learning & Education in Canada

The emergence of adult education and lifelong learning as a discipline and field of study within Canada extends from a long history of the utilization of learning, engagement with ideas of knowledge throughout societies, and interactions between people and their environments. From primeval times the presence of learning systems are evident, and the dynamics of such evolving systems across Canadian history continues to impact the landscape of learning today (Welton, 2013a, p. 20). From pre-colonial landscapes to colonialism (Welton, 2013b), technological advancements (Harasim, 2017), the industrial revolution and capitalist ideologies (Welton, 2013b), challenging social, economic, and political conditions prompting shifts in approach and engagement of civil and democratic participation, to the current neoliberal era (Welton, 2013b): learning systems have changed, adapted, and evolved with contextual environments, needs, and acquisition of knowledge.

Providing a Canadian perspective on contexts of learning and education, the adult education and lifelong learning discipline as it has emerged and developed and is situated within Canada provides general (and critical) approaches to exploration, understanding, and practice. With interdisciplinary (Draper & English, 2016) and philosophical underpinnings of the discipline and field with ties to critical social theory (CASAE, 2022; Welton, 2013b, p. 207-209), the adult education and lifelong learning lens draws attention to: individual and varied tiers of wider-level contextual positioning, impacts of socio-contextual factors and conditions on individual/societal needs (Benjamin & Haines, 2021; Draper & English, 2016; Long, 2023), practical and practice-oriented approaches to address social issues and needs (Brigham et al., 2021; Gouthro & Holloway, 2023; Taylor, 1993), and opposing and tackling the idea of universal realities through the interrogation of what one knows and how one knows it (Lange, 2021; Welton, 2013a).

This study explores the situated contextual positioning of university students in Canada, and as a lens adult education and lifelong learning provide a more holistic approach into this investigation of interrelations surrounding student context and considerations of context within the Canadian landscape. This holistic approach includes the recognition and exploration of students beyond their university institutional affiliations and situatedness, and reflects an increasing awareness of the student as a person/individual situated in wider levels of individual and social contexts outside of education institutions.

1.2) Literature Overview: Themes, Debates, Gaps

With interest in this theme of context and how it may be understood or operationalized in educational settings, a general overview of literature was conducted with relation to context and contextual integration in education/learning environments. Keeping in mind adult education and lifelong learning insights, and with particular focus on literature produced referencing post-secondary/higher education environments: the following articles represent common themes and debates present across the search, providing a background of literature with gaps identified which position the direction of this study.

Through a broad initial literature search, discussions were found referencing a diverse range of education/learning environments and age demographics of learners/students. While generally positioned through a westernized lens, the literature identified can be broadly grouped under the following categories: discussions relating to post-secondary and higher-education (e.g., college/university) environments (adolescent and adult age groups), ranging adult learning/education environments across social settings (e.g., community organizations, workplace), and primary and secondary education environments (children and adolescent age groups). An overarching theme in the literature is an emphasis on bridging the gap between theory and practice when it comes to teaching and learning, with integrated discussions and reference to context as playing an important role in this process. However, this is approached in different ways, through varied positionalities and points of view.

Varied Approaches to Context in Education Literature: Post-Secondary/Higher Education

Within this discourse on addressing the theory and practice divide, articles by Lund and Stains (2015), Huhn (2021), and Baker et al. (2009) were found during an initial (and broad) literature search, providing examples of ways context related to western post-secondary and higher education is being approached. While similarly connected through a teaching and instruction lens, these articles reflect the abstract nature of context and varied contextual discourse within this literature.

Lund and Stains (2015) indirectly challenge perceptual fallacies acknowledging only wide scale contextual differences. Through the recognition of the presence and impact of smaller scale contextual differences, discussions include the contextual diversity and nuance within their own university institution and amongst departments. They additionally emphasize the importance of contextual specificity and explicitly caution the application of overgeneralized findings from one institutional environment to another (Lund & Stains, 2015, p. 1). In another article by Huhn (2021), they provide an autoethnographic account and critical engagement discussing and evaluating their own pedagogical teaching practice (p. 689). This article further reflects the integral role of context and its consideration for understanding to navigate institutional conditions, realistic application of practice, and engagement in teaching and learning processes (p. 701-703). The last article by Baker et al. (2009) provides an example of context discussed through the frame of an active learning tool and pedagogical teaching practice (p. 6), implemented with consideration to their specific institutional environment (p. 15). Baker et al. (2009) indirectly prompted a reflection on the potential range of conceptualizations of 'context'

in literature, and the impact such conceptualizations may have on approaches to contextual integration within education environments.

Expanding View of Context: General Adult Learning & Education Literature

Expanding outside of post-secondary and higher education for further investigation of literature integrating discussions of context and (in particular) learning, Ranieri et al. (2019) and Folinsbee (2012) display a few related ideas which emerged across this search on adult learning and context: the notion of ecology (in relation to the learner and action of learning) as a way to conceptualize dynamic contributing elements on individual development, knowledge base, positionality, and the exploration of wider-level factors/influences on adult learning through a workplace lens.

The article by Ranieri et al. (2019) relates to the first three post-secondary/higher education literature articles through a similar focus on the instructor/educator, through the lens of teachers (primary/secondary level) as learners. Through a small-scale study the authors explore potential connections between the participants (teachers) learning ecologies and their professional identities (i.e., personal lens, teacher identity/pedagogy, and contexts of individual education/training/work background). Although learning ecologies are commonly interpreted in different ways (Ranieri et al., 2019, p. 1673), the authors recognize an interplay of individual and contextual elements (e.g., intrapersonal processes, motivations, interpersonal dynamics; formal/informal learning environments) within the concept of learning ecology (p. 1675-1676), while adding that context in this process could be further explored (p. 1673). Looking outside of the instructor/educator frame with a focus more on the learner lens, Folinsbee (2012) provided

added discourse which introduced further insight and reflection on a diverse range of potential factors which may impact the development and learning of an adult, along with the intricacies which accompany the practice of identifying and navigating contextual environments.

In an introductory commentary titled “Workplace Literacy and Essential Skills (WLES): A Complex Interplay of Workplace, Societal and Individual Factors” for the work of Merrifield, Folinsbee (2012) describes how Merrifield’s work offers “a clear analysis of the interconnectedness of societal, workplace and participant contexts, which create or limit opportunities for successful learning, and their potential impact on results” (p. 4). Through their experience in the adult education and lifelong learning field, Folinsbee (2012) articulates the ‘complexities’ and ‘messiness’ that come with the ‘terrain’ of WLES (p. 3). In a landscape where narratives surrounding adult learning are commonly situated in relation to the workforce, prominent discourse surrounding WLES consists of a push towards improved job proficiency, productivity, and enhanced performance (Folinsbee, 2012, p. 3). With this in mind, Folinsbee (2012) discusses how power dynamics and infrastructures at the systemic level in such landscapes may be carried out and differ through varied interests, approaches, and philosophies (p. 3-4). In the consideration of a range of factors that are constantly changing surrounding WLES (Folinsbee, 2012, p. 3), Folinsbee (2012) specifically notes how related elements like policies, conditions, cultures, and processes exist in a “constant state of flux” (p. 3): stating that Merrifield utilizes the “concept of social ecology as a means to describe all the dynamic elements at play in relation to a whole” (p. 4). Furthermore, they describe the idea of an

‘ecology’ as one which “reaffirms the need to understand all its parts – players, environments, processes and their interconnections” (Folinsbee, 2012, p. 4).

Although these discussions of adult learning and context have a primary focus on workplace environments and professional settings, they provide examples of wider level (i.e., expanded) considerations both within and outside those environments necessary for insight into the complex, multifaceted, and dynamic elements and factors present. Folinsbee (2012) highlights some examples of the intricacies which accompany the practice of identifying and navigating contextual environments. From this insight, an additional broad search was conducted returning to literature referencing formal education environments with a mirrored interest on direct and explicit contextual discourse, considerations for identifying and navigating contextual environments (i.e., contextual analysis), with the population of focus on students¹.

Explicit Discourse on Student Context: Formal Education Literature Landscape

With an interest and focus on students/learning and contextual discourse within formal education literature, where discussions align in contextual analysis and explicit engagement with ideas of ranging factors/elements for consideration, a common thread found across the search is literature situated more from primary and secondary-level education environments. As initial post-secondary and higher education literature commonly varied by contextual discourse, with findings generally more frequent and plentiful from the instructor/teaching lens, identifying literature which explicitly discuss and engage with this area was more of a challenge. On the

¹ Such as the potential ranging elements/factors both within and outside of the formal education environment (e.g., post-secondary/higher education).

other hand, literature identified situated from the primary and secondary-level education offered discourse more in line with this contextual analysis approach: expanding beyond the instructor/teaching frame and integrating with a focus on students/learning, through explicit discussions of student context alongside wider ranging elements, factors and conditions for consideration.

In the wake of the COVID-19 pandemic literature quickly arose in this area, such as the article written by Whitley et al. (2021) who touches on the significant upheaval and challenges experienced by children and youth in particularly vulnerable positions “due to education, environmental, and social factors” (p. 1693). These student/learning narratives incorporating influences on wellbeing, development, and learning processes and student engagement, such contextual considerations coincide with additional discussions on teaching narratives: from teacher background, conditions, and influences which may impact their teaching practice, engagement, and role in an environment with a variety of continually shifting factors and elements.

Recognizing these dynamic and intersectional considerations which can support the understanding and navigation of the education environment, a field of study found across the literature search aligned with this common thread of primary and secondary education: Sociology of Education. Reflecting some of these ideas can be found across discussions in the multi-volume work titled the *Sociology of Education: An A-to-Z Guide* by Ainsworth (2013). With the work of Ainsworth (2013) there are a few mentions into the educational area of higher education (and post-secondary), with discussions relating to the developmental period between

adolescence into young adulthood, and considerations of factors and influences which may impact a student's transition from secondary to post-secondary/higher education. The overlap in discussions across education environment (primary/secondary education and post-secondary/higher education) were noticed similarly within initial articles from the literature overview, with reference to teachers in the primary/secondary-level (e.g., Huhn (2021) article and Ranieri et al. (2019) article).

Further Literature Considerations in Post-Secondary/Higher Education

Recognizing overlapping discussions across environments and returning to the post-secondary and higher education literature landscape beyond initial literature outlined, some integration of 'teaching' and 'learning' narratives can be observed.

COVID-19 Pandemic: Literature Narratives & Debates

Over the past few years (like the primary and secondary education literature landscape) broader discussions appeared relating to the COVID-19 pandemic. These discussions included immediate structural/institutional changes required and quickly implemented across post-secondary and higher education environments in Canada (during the COVID-19 lockdowns), altering traditional modes of teaching and learning. Across literature discussions in the first few years, there was an uptake in discourse surrounding the importance of considerations toward individual and contextual factors (within and beyond the education institutional environment). In discussions of the COVID-19 pandemic's impact from various tiers of social environments (e.g., individual, community, provincial, national, and global levels) and interconnections with post-secondary and higher education, there were intersecting narratives from teaching, learning, and institutional

perspectives to navigate challenging conditions. With a resurgence of discussions on the teaching, learning, and institutional landscape needs during this time, ideas included post-lockdown considerations on practices and actions necessary to address evolving student needs: recognizing the complexities of student social, emotional, and developmental positioning.

Although, debates arose during this time on some perceptions of COVID-19 and relating actions/insights. An article written by Motta (2022) offers a discussion on the ‘politics of knowledge’ that contributes to accounts of the COVID-19 pandemic in an ‘apocalyptic’ light, suggesting a “great rupture into chaos” (p. 58). Motta (2022) challenges ‘modernity-coloniality’ claims perpetuating a universal reality and experience of the COVID-19 pandemic (claims neglecting wisdom, knowledges, and challenges outside of this lens) (p. 58). These perceptions which have neglected realities and experiences long prior to the COVID-19 pandemic (Motta, 2022, p. 59), relate to debates on insights that the events of COVID-19 rendered on the importance and (re)consideration of influential factors within and outside of the education institution which impact students, educators, and academic systems. Relating dialogue includes critiques on the relationship between institutional response based on determined needs through this lens, reinforcing visibility and tailored acknowledgement of those in historically and systemically privileged positions (Motta, 2022, p. 68).

Recognizing that complex and evolving student needs are (and have been) present requiring deliberate actions, the COVID-19 pandemic did present disruptions and challenges, highlighting (and worsening) pre-existing ‘cracks’ in the post-secondary and higher education sector (Brennan et al., 2021, p. 872). The emergence of the COVID-19 pandemic and its

implications on post-secondary and higher education teaching and learning reinforces paramount contextual considerations and intersecting teaching and learning narratives to navigate dynamic conditions and needs within and outside of the institution.

Relating Disciplines and Fields of Study

Considering areas with increased contextual considerations and intersecting narratives from teaching and learning, discussions can be found across disciplines relating to these ideas with strong ties to post-secondary and higher education.

Examples of disciplines include sociology, anthropology, and psychology. Considering social and interpersonal dynamics, along with intrapersonal factors and processes crucial to contextual discourse relating to teaching and learning, such disciplines offer foundational information. Amongst disciplinary ideas, particular fields of study relate to investigations within post-secondary and higher education literature. Areas such as cognitive psychology support understanding of intrapersonal elements and cognitive processes involved in learning and development (Ben-Eliyahu & Linnenbrink-Garcia, 2015; Chew, 2021; Sangrá et al., 2019). Furthermore, pulling from ideas across these disciplines forming interdisciplinary studies and fields, such as disability studies (Bruce, 2011; Rawson, 2022) or more specific fields like cross-cultural education, have long integrated discourse on individual and wider social implications of factors within and outside of academic institutions (e.g., exploring ideas of social inclusion and exclusion [Peters et al., 2014]) : supporting the importance of contextual understanding and promoting ideas of critical, informed, and inclusive educational practices. These related fields of study have touched on pedagogical applications leading to the development, implementation, and

re-evaluations of practice such as Inclusive Education (Bruce, 2011; Bunch, 1994; Weinkauf, 2002; Weinkauf, 2003), Universal Design for Learning (Centre for Excellence in Universal Design, 2024a, 2024b; Rose et al., 2007), and Culturally Responsive Pedagogy (Ragoonaden & Mueller, 2017).

With these discussions on areas integrating further contextual considerations within the post-secondary and higher education environment, additionally reflected upon is how various disciplines/fields of study may shape the nature of considerations being made. The article by Folinsbee (2012) provides a subtle example of this amongst the literature, positioned with an adult education and lifelong learning discipline lens, with noticeable distinctions in contextual consideration and understanding compared to general adult learning/education literature not similarly positioned.

1.3) Literature Review Discussion

The importance of context can be found across the literature review. With a focus on the university setting as the formal education environment for inquiry, discussions across the literature overview led to reflections on contextual discourse and considerations in this area: the extent of what context may entail (the vast and diverse range of potential factors and influences on teaching and learning), and fragmented/disjointed contextual discourse across literature (even more so when it comes to post-secondary and higher education [college/university]).

The initial (general) exploration of contextual discourse within the post-secondary and higher education environment found literature leaning more towards teaching narratives, although limited with results on contextual considerations (within and outside of the institution)

relating to more learning narratives (i.e., integrating student/learning considerations).

Recognizing that the way in which these ideas are outlined (teaching narratives versus learning narratives) may appear as binary-structured categories, they are far from isolated entities and often interconnect/overlap. Although potentially reductive, these terms are utilized in attempts to describe contextual discourse across literature with either the teacher (instructor/educator) or student (learner) as the body positioned within the environment, with contextual narratives and considerations reflecting such positioning.

With discussions provided across the literature review, the fragmented contextual discourses across literature (broadly speaking), and disconnect between teaching and learning narratives across post-secondary and higher education environments, it is necessary to bridge these discussions/discourses as a starting place for further exploration of contextual considerations related to teaching and learning (providing insight into the ‘complexities’ of context) in these environments. To support efforts in moving beyond implicit understandings of context and extrapolation of contextual considerations for teaching and learning in post-secondary and higher education settings²: this study works to explore the role of context in the practical application of teaching practice through examining contextual considerations relating to teaching and learning practice in Canadian university environments. To better understand, conceptualize, and investigate these ideas across the landscape of literature a scoping review approach will be utilized for this study.

² With consideration to the feasibility of the study (i.e., focus on university opposed to integration of college environments as well).

CHAPTER 2: Methodological Approach

2.1) Scoping Review Process

A scoping review methodological framework is utilized for this study, which was first outlined by Arksey & O'Malley (2005) who offer six-stages to the design: identifying the research question, identifying relevant studies, study selection, charting the data, collating, summarizing, and reporting the results, along with consultation (optional). As an emerging methodology the defining of scoping reviews has been an ongoing process, as initially articulated by Arksey & O'Malley (2005) who discussed the challenges to definitively define (beyond general characteristics) due to the potential variations in purpose of a study, and consistency differences in the degree to which a researcher may explore the 'breadth' and 'depth' of a research area (p. 21). However, a broad definition was recently developed by the JBI Scoping Reviews Methodology Group to describe the current state of the scoping review methodology (accommodating potential variations), which is described as follows:

Scoping reviews are a type of evidence synthesis that aim to systematically identify and map the breadth of evidence available on a particular topic, field, concept, or issue, often irrespective of source ([i.e.], primary research, reviews, non-empirical evidence) within or across particular contexts. Scoping reviews can clarify key concepts/definitions in the literature and identify key characteristics or factors related to a concept, including those related to methodological research. (Munn et al., 2022, p. 1)

Scoping reviews are a distinct type of evidence synthesis (Colquhoun et al., 2014, p. 1294).

Although with some similarities, scoping reviews and systematic reviews differ in purpose, aim,

and process which is suited for their respective goals for synthesizing evidence. Systematic reviews attempt to “identify, appraise, and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a specific research question” (Cochrane Library, 2025). The narrower parameters and focused research question (SFU, 2025) with this key component of appraisal situates a different approach, process, analysis, and aim of synthesis compared to the scoping review. Scoping reviews offer an opportunity to investigate broader research areas and more exploratory research questions, descriptively summarizing findings across a range of evidence potentially available to establish an understanding of what is known versus what is not known (Pollock et al., 2022a; Tricco et al., 2018b). They further differ from literature reviews, as they utilize a “systematic process for reviewing a heterogenous³ body of literature” (Samuel, 2024, p. 215) and entail a rigorousness and transparency with discernible methodological processes (Munn et al., 2018; Peters et al., 2020; Tricco et al., 2018b).

Over the past two decades since the Arksey & O’Malley (2005) article, significant efforts have been made to clarify, enhance, and advance the understanding and undertaking of scoping reviews, while addressing reported challenges, refining definitions and guidelines, and offering recommendations to support sound methodological processes and reporting (Colquhoun et al., 2014; Levac et al., 2010; Peters et al., 2020; Pham et al., 2014; Pollock et al., 2022a; Pollock et al., 2023; Tricco et al., 2018b). Collaborative and contributing efforts supported the emergence of works such as: Levac et al. (2010) in the enhancement and clarification in each of the six-stages of the scoping review framework; Colquhoun et al. (2014) with recommendations for

³ A diverse range and type of literature.

consistency in language use referencing scoping reviews and clarity in defining; Tricco et al. (2018b) in the development of the PRISMA-ScR⁴ (Preferred Reporting Items for Systematic Reviews and Meta-Analyses, extension for Scoping Reviews), which offers guidelines and recommended reporting items for increased methodological transparency in conducting scoping reviews (Tricco et al., 2018b, p. 7); along with updates to these guidelines as outlined by Peters et al. (2020), and ongoing efforts by the JBI Scoping Reviews Methodology Group in providing methodological resources and practical recommendations/guidance for conduct (Aromataris et al., 2024; JBI, 2022).

Although initially developed and commonly used throughout health/medical fields, scoping reviews have continued to be adopted in additional fields of study (e.g., education) (Colquhoun et al., 2014; Levac et al., 2010; Pham et al., 2014; Pollock et al., 2022a; Samuel, 2024). As a useful methodology across disciplines with a growing uptake in cross-disciplinary use, continued and on-going efforts are required to ensure continued methodological rigor, transparency, and effective use in these disciplinary research contexts. Prior to considering the use of a scoping review for a research study, it is necessary to assess whether this approach is appropriate (Arksey & O'Malley, 2005; Levac et al., 2010; Tricco et al., 2018b; Peters et al., 2020). Considering the extent, range, and fragmented nature of contextual discourse in western education literature across various fields/disciplines, with the disconnected discussions relating to university students and considerations of context (the research area for this study), the scoping

⁴ The culmination of effort and works contributing to the emergence of the PRISMA-ScR: Situated from the initial work of Arksey & O'Malley (2005) and Levac et al. (2010), the Joanna Briggs Institute published guidance for the conduct of scoping reviews in 2015, updated in 2017, and then considered further as articulated by Tricco et al. (2018b) in the development and publishing of reporting guidelines for scoping reviews (i.e., PRISMA-ScR).

review methods provide a suitable way to address the following: clarifying the concept of context/contextual considerations, identifying what key characteristics or factors relating to what this concept may entail, and synthesizing literature that is available across a wide range of evidence sources surrounding the practicality of such considerations in context.

2.2) Rapid Scoping Review Approach

As this review has been conducted in the context of a master's thesis project, the scoping review methodology was integrated with further requirements for this project as stipulated by the academic institution. As such, some modifications to the standard process and reporting format/structure were necessary.

Considering the time and resources which were available for this research, the review has been conducted through a rapid scoping review approach. Although such a process has yet to be clearly defined with little to no guidance available, for the purposes of this study I describe the rapid scoping review approach utilizing similar terminology as outlined by Tricco et al. (2022) on standard rapid reviews (i.e., modified systematic reviews), which may involve the “omission, abbreviation, or simplification of traditional steps” (p. 947)⁵. Although not ideal, it is necessary in the confines of this particular project. Significant efforts have been made to clearly document, detail, and transparently report this process across all stages of the research which is reflected throughout this paper.

⁵ Rapid reviews are currently not a formal type of evidence synthesis and have minimal methodological guidance, as they may be modified in various ways or tailored for specific circumstances or needs (Tricco et al., 2022). As such, rapid reviews therefore are not a methodology but a way of undertaking a particular review (JBI, 2022). Although discourse has increased surrounding rapid reviewing processes for scoping reviews, guidance is similarly and further limited for this type of synthesis.

2.3) Theoretical Framework

A theoretical framework for a research study serves as the researcher's lens, positioned through the utilization of an existing theory which has been verified through previous scholarly use, testing, and validation (Grant & Osanloo, 2014, p. 16). The theoretical framework implemented in this study is critical social theory.

To assist in navigating the complexities of contextual examination and support understanding of what contextual considerations may entail, critical social theory has offered a critical lens which contributes to a critically grounded and interdisciplinary philosophical stance for this project. Gouthro & Holloway (2023) argue that “critical social theory exists across a spectrum and is informed by a consideration of how societal variables impact upon different learning contexts and thus on adult learners’ experiences” (p. 328); Such variables include “broader social, cultural, and economic structures shaping learning experiences” (Gouthro & Holloway, 2023, p. 328). Considerations of both individual needs and social structural factors coincide with considerations of power, and how ‘power permeates’ contexts relating to adult teaching, learning, and education (Gouthro, 2022, p. 107). Critical social theory has developed from standpoints such as the importance of interrogating power (e.g., power structures) and how ideologies may “inform and affect research” (Savin-Baden & Major, 2012, p. 22), with understanding that realities emerge resulting from a range of forces (e.g., social, race, class, gender) (Savin-Baden & Major, 2012, p. 38). This lens supports the consideration of “social purpose and equity issues” (Gouthro, 2022, p. 107) and conscious efforts to recognize onto-epistemological biases (Motta, 2022, p. 62), providing operational and philosophical principles

to consider on personal (i.e., research) conduct, approach, and engaging with the scope of concepts and variables from a socially conscious standpoint.

2.4) Conceptual Frameworks

Conceptual frameworks offer an opportunity to make sense of different ideas within a study and a background explanation into the potential relationship between them, providing insight for the readers on the ontology and epistemology underlying the study (Grant & Osanloo, 2014, p. 19). A few key components of the investigation for this study include learning (e.g., action, process), student (e.g., population, person, role), and context (i.e., individual and wider level environments and factors). These components which are far from simple in explanation, are dynamic both on their own and to a greater extent in relation with each other. To embrace the complexities of interrelated aspects, the acknowledgment and integration of their ambiguity will be implemented into the framework of this study. For a clearer conceptual positioning of such elements both individually and in relation with each other, two conceptual frameworks will be utilized for this study.

Adult Education and Lifelong Learning Discipline

Providing a Canadian contextual perspective on learning and education, the adult education and lifelong learning discipline as it has emerged, developed, and is situated within Canada provides general (and critical) approaches to exploration, understanding, and practice. Through the interdisciplinary (Draper & English, 2016) and philosophical underpinnings of the discipline and field with ties to critical social theory (CASAE, 2022; Welton, 2013b, p. 207-209), this adult education and lifelong learning lens draws attention to related areas of interest to the research

topic: individual and varied tiers of wider-level contextual positioning, impacts of socio-contextual factors and conditions on individual/societal needs (Benjamin & Haines, 2021; Draper & English, 2016; Long, 2023), practical and practice-oriented approaches to address social issues and needs (Brigham et al., 2021; Gouthro & Holloway, 2023; Taylor, 1993), and opposing and tackling the idea of universal realities through the interrogation of what one knows and how one knows it (Lange, 2021; Welton, 2013a).

Considering the key constructs of adult education and lifelong learning conceptually, adult education recognizes adults as learners (e.g., their diverse positioning, experience, knowledge) while lifelong learning reflects the diverse practice and process of learning (e.g., acquiring new knowledge, a developing knowledge base) across the life course. Diverse practices and processes of learning take place over the life course, across varied environments and through different types of learning (e.g., formal, informal, and non-formal), all of which relate with an underlying theme of development. With the areas of focus for this study on university students in Canadian public institutions and a greater understanding of their contextual positioning (e.g., individual, social, and those within/outside of the institutional environment), this lens will contribute to both background and contextual understanding of the research landscape.

Bronfenbrenner's Bioecological Theory (PPCT Model)

The bioecological theory and process-person-context-time (PPCT) model reflects a 'mature version' of Urie Bronfenbrenner's theory on ecological systems (Tong & An, 2024, p. 2), which evolved in attempts to address this research gap articulated by Bronfenbrenner: "In place of too

much research on development 'out of context,' we now have a surfeit of studies on 'context without development' (Bronfenbrenner, 1986a, p. 288, as cited in Bronfenbrenner, 1992, p. 188). Advancements were enriched by scholars and research in human development (Bronfenbrenner, 1992; Bronfenbrenner & Morris, 2006), leading evolutions towards the bioecological structure and perspective. As such, the theory and model can be described as “an evolving theoretical system for the scientific study of human development over time” (Bronfenbrenner, 2005, as cited in Bronfenbrenner & Morris, 2006, p. 793). Although almost two decades have passed since this description was provided, it accounts for ongoing efforts for further advancement which may be necessary today with additional insights, changes, and challenges identified accompanying the 21st century era (Guy-Evans, 2024; Guy-Evans, 2025; Merçon-Vargas et al., 2020; Navarro & Tudge, 2023; Rosa & Tudge, 2013; Tong & An, 2024; Tudge et al., 2016).

The bioecological theory and PPCT model were established to comprehend, consider, and operationally approach the complexities and multifaceted interrelations of individual, social, contextual, and developmental elements at play (Tong & An, 2024, p. 3). Tong & An (2024) caution the overestimation or underestimation of the ‘power’ any individual factor may have, reinforcing the theoretical positioning of the bioecological theory and model to not view these factors in isolation, rather through understanding and consideration of their interactions with

each other (p. 3)⁶: These considerations which include the synergistic⁷ dynamics of those interactions (Bronfenbrenner, 1992; Rosa & Tudge, 2013; Tong & An, 2024). Development is described by Bronfenbrenner & Morris (2006) as the following:

In the bioecological model, development is defined as the phenomenon of continuity and change in the biopsychological characteristics of human beings, both as individuals and as groups. The phenomenon extends over the life course, across successive generations, and through historical time, both past and future. (Bronfenbrenner & Morris, 2006, p. 793)

Developmental discourse from the bioecological theory reflects a view contrasting the assumption of factors producing simply ‘additive effects’ to development, where varied interactions of factors and their diverse range of possible presentations can lead to different ‘developmental consequences’ (Bronfenbrenner, 1992; Tong & An, 2024). This perspective not assuming the nature of developmental implications, accounts for the range of possible developmental implications (e.g., constructive versus unconstructive, functional versus dysfunctional) and is intentionally left open for exploration utilizing the PPCT model (Bronfenbrenner, 1992, p. 191). Through this theoretical positioning and development conceptualization, Bronfenbrenner & Morris (2006) argued that “in accord with specifications of

⁶ Tong & An (2024) describe an acknowledgement from Bronfenbrenner across his work on “the complexity and ambition of such a comprehensive paradigm, recognizing that very few researchers can address all its components simultaneously in one comprehensive analysis” (Bronfenbrenner, 1986a; Bronfenbrenner, 1988; Bronfenbrenner, 1999, as cited in Tong & An, 2024, p. 5). Furthermore, they articulate the argument by Bronfenbrenner that “it is more feasible for researchers to break down these components into smaller combinations that work together cohesively” (Bronfenbrenner, 1999, as cited in Tong & An, 2024, p. 5).

⁷ Bronfenbrenner (1992) provides the following definition: “The term *synergism* is use[d] to describe a phenomena of this kind, in which *the joint operation of two or more forces produces an effect that is greater than the sum of the individual effects*” (p. 199).

the bioecological model, different pathways through space and time lead to different [developmental] outcomes” (Bronfenbrenner & Morris, 2006, p. 825).

Process-Person-Context-Time (PPCT) Model

The components of the PPCT model include process (proximal processes), person (demand/resources/force characteristics), context (micro-, meso-, exo-, macro-system levels), and time (consistency/frequency/interval of time). Recognizing the “interdependency and contextual variations among influencing factors” (Tong & An, 2024, p. 3), the PPCT model allows for the comprehensive consideration of the “interactions among developmental processes, contextual and individual biological characteristics, and temporal aspects” (Tong & An, 2024, p. 2). These considerations can be explored through the different components integrated within the PPCT model, which are elaborated in the following paragraphs.

1. Process

As the first component of the model, process (proximal processes) relates with the varied interactions between people and their environments occurring over time and impacting the human development process. These processes may differ with the variation in characteristics of the developing person, situated across immediate and remote environmental contexts, and time periods (Bronfenbrenner & Morris, 2006, p. 795). As Tong & An (2024) articulated, process can be “defined by its functional relationship both to the environment and to the characteristics of the developing person” (p. 3). With these elements in mind, Tong & An (2024) offer a concise definition of proximal processes as the “reciprocal, enduring, and progressively more complex

interaction between an active, evolving biopsychological human organism and the persons, objects and symbols in its immediate external environment” (Tong & An, 2024, p. 6).

Proximal processes are referred to as the primary ‘mechanism’ (Rosa & Tudge, 2013, p. 244) and ‘engine’ (Bronfenbrenner & Morris, 2006, p. 798) which propels development. According to Bronfenbrenner (1992), “the range of possible processes have broadened both in variety and complexity, but the prospect of sorting them out is now considerably brighter” (p. 200)⁸. As proximal processes are closely linked and overlap with other concepts (e.g., the person, varied characteristics, interactions, developmental outcomes), attempts to differentiate proximal processes was made by Bronfenbrenner & Morris (2006) who described the initial defining properties of the concept, the operational context of the properties, while expanding with further explicit descriptions of key features (p. 797-799). Some of these features are reflected in the concise description of proximal processes by Tong & An (2024) as outlined above. Merçon-Vargas et al. (2020) provides some clarification⁹ on proximal processes and further exploration to distinguished related concepts and interactions, such as between processes and environmental influences, drawing attention to (and differentiation of) mechanisms which may produce

⁸ This is further reinforced in Bronfenbrenner’s later works with the complete PPCT model (i.e., expanding from PPC model to the integration of the *time* element).

⁹ Merçon-Vargas et al. (2020) argues the need for further research and continued efforts to distinguish proximal processes. Their attempts to do so led to the conceptualization of inverse proximal processes. Merçon-Vargas et al. (2020) suggests that both proximal processes and inverse proximal processes can contribute to further understanding and exploration of these processes and their relationship with developmental outcomes (from person’s characteristics) in different environment (p. 329-330).

development and the interactive processes which may promote it (Merçon-Vargas et al., 2020, p. 331).

2. Person

Intertwined particularly with proximal processes, the person conceptualization reflects cognitive and socioemotional characteristics (Tong & An, 2024, p. 4), such characteristics of disposition, resource, and demand (Bronfenbrenner & Morris, 2006, p. 795-796), which can influence proximal processes as well as be influenced by the interplay of elements outlined in the PPCT (Tong & An, 2024; Bronfenbrenner & Morris, 2006). The characteristics which are argued as “measures of developmental outcomes” (Tong & An, 2024, p. 4), can be briefly defined as follows:

a. Force (Disposition) Characteristics

Tong & An (2024) define ‘force/disposition’ (p. 4) characteristics as the “cognitive, social, emotional, and motivational factors associated with temperament and personality” (p. 6).

Furthermore, they can be described as the “active behavioural dispositions that can set proximal processes in motion and sustain their operation” (Bronfenbrenner & Morris, 1998, p. 1009, as cited in Tong & An, 2024, p. 6).

b. Resources Characteristics

Resources characteristics are defined as “characteristics relating to mental and emotional resources [which are] not immediately visible but sometimes are induced from demand characteristics” (Tong & An, 2024, p. 6).

c. Demand Characteristics

With this reference to demand characteristics, they can be defined as “personal characteristics that act as an immediate stimulus to another person [which] may influence initial interactions due to the expectations formed immediately” (Tong & An, 2024, p. 6).

3. Context

The third component of the model is context, which encompasses the core elements of the ecological paradigm (i.e., ecological systems)¹⁰. The four environmental systems (micro-, meso-, exo-, macro-) under the bioecological theory and model serve as contexts of development (Bronfenbrenner, 1992).

a. Microsystem

Adding to the previous definition of the microsystem reflecting the renewed insights, consideration, and integration of development, Bronfenbrenner (1992) reflects these additions in italics and provides the following definition:

A microsystem is a pattern of activities, roles, and interpersonal relations experienced by developing person in a given face-to-face¹¹ setting with particular physical and material

¹⁰ With later ideas integrated as additions to the earlier conceptions of Bronfenbrenner’s work on the ecological systems, reflecting the contribution of developmental insights.

¹¹ Given the exponential growth, ability, and uptake in technological communication with the advancements in technology throughout the 21st century, further considerations and modifications have been proposed, as digital/virtual (i.e., beyond face-to-face) interactions and environments need to be considered in the digital era (Guy-Evans, 2024; Navarro & Tudge, 2023).

features, and containing other persons with distinctive characteristics of temperament, personality, and systems of belief. (Bronfenbrenner, 1992, p. 227)

b. Mesosystem

The mesosystem is defined by Bronfenbrenner (1979) as follows:

A mesosystem comprises the interrelations among two or more settings in which the developing person actively participates (such as, for a child, the relations among home, school, and neighborhood peer group; for an adult, among family, work, and social life)... a mesosystem is thus a system of microsystems. (p. 25)

c. Exosystem

Further within Bronfenbrenner's (1979) work exosystem is defined:

An exosystem refers to one or more settings that do not involve the developing person as an active participant, but in which events occur that affect, or are affected by, what happens in the setting containing the developing person. (p. 25)

d. Macrosystem

Like the microsystem definition, the macrosystem was revised by Bronfenbrenner (1992) who highlights the changes in italics with the accompanied definition:

The *macrosystem* consists of the overarching pattern of micro-, meso-, and exo-systems characteristic of a given culture, subculture, or other broader social context, *with particular reference to the developmentally-investigative belief systems, resources, hazards, life styles, opportunity structures, life course options, and patterns of social interchange that are embedded in each of these systems.* The macrosystem may be thought of as a societal blueprint for a particular culture, subculture, or other broader social context. (p. 228)¹²

4. Time

The prior conceptualization of time by Bronfenbrenner which supported the emergence and framing of this time model is the chronosystem. The chronosystem supported the insight of not only accounting for the “constancy and change [in] the person, but also in the environment” (Bronfenbrenner, 1992, p. 201). Further advancements led to the conceptualization of the dimensions of time across the micro-, meso-, and macro-system levels.

a. Microtime

Microtime can be described as the level of consistency over time through engagement and/or interactions (i.e., spectrum between consistent versus inconsistent). More concisely put, Bronfenbrenner & Morris (2006) describes that “microtime refers to continuity versus discontinuity in ongoing episodes of proximal process” (p. 796).

¹² Christensen (2010) provides a critique of the model highlighting the lack of explicit features relating to global considerations (p. 117) and international levels (p. 121). Suggesting an ‘ex-macro level’ to account for these components, Christensen (2010) argues that “global factors such as political, economic, social and environmental factors on the ex-macro level in relation to the individual level need to be further understood” (p. 124-125).

b. Mesotime

Expanding from the microtime description, *mesotime* “is the periodicity of these episodes across broader time intervals, such as days and weeks” (Bronfenbrenner & Morris, 2006, p. 796).

c. Macrotime

The last conceptualization of time across the macro-system level, *macrotime*, is described to focus on “the changing expectations and events in the larger society, both within and across generations, as they affect and are affected by, processes and outcomes of human development over the life course” (Bronfenbrenner & Morris, 2006, p. 796).

Bioecological Theory/Model: Conceptual Framework Use

Although Bronfenbrenner’s ‘mature’ work is commonly used as integrated methods in a research design, for the purposes of this study these bioecological elements have been utilized as a conceptual framework to both conceptualize and organize different variables and their interrelations which arose throughout the review. More recent evolutions to this work which have been integrated in this study include the idea of inverse proximal processes by Merçon-Vargas et al. (2020) and an addition of an ex-macro level (i.e., global) by Christensen (2010).

2.5) Positionality Statement

Research is not value free (Holmes, 2020, p. 1) and those conducting research are not inherently neutral nor objective (Edgley, 2023, para. 3). Researchers hold significant power, influence, and are impactful agents across all aspects of a study. For these reasons, it is crucial for the positionality of a researcher to be considered and discussed as any other element of the research design would be.

Implemented in the research design is the theoretical framework of critical social theory as a philosophical stance and lens within the review. The principles which underly this stance extends beyond theoretical relevance and operationally calls to critically examine (e.g., interrogate and challenge) areas of individual positioning, subjectivities, and power dynamics. This is relevant with the belief that varied realities and experiences exist, which emerge and are impacted through a range of forces (Savin-Baden & Major, 2012); A view which is reflected across the proposed study and topic areas. This view is an extension of my own background and experiences in academic, personal, and professional settings which across these areas have intersected with a value of social equity and inclusion.

In my graduate education there was a focus on real-world engagement, navigation, and practical relevance and application. Discussions surrounding this focus included formal, informal, and non-formal learning environments, positioning practice and principles with consideration to context. Extending beyond academia similar intersecting narratives and an emphasis on context has been present, contributing to my orientation towards practice that is practically situated within real-world settings and informed by lived experiences. Within the past few years I began the start of my work-related and professional experience working with university students. This experience fostered a deep awareness and empathy for the potential complexity of student life and ranging possibilities of what students may be facing along with their pursuit of formal education endeavours; students who are richly and widely diverse with experiences, knowledge bases, backgrounds, and identities.

Working with students in different capacities within a university environment (e.g., academic and student supports) has further prompted a deeper engagement with limits to my own experiential knowledge and the partiality of my individual understanding and experience as a white, cis-gendered, heterosexual woman (i.e., ongoing efforts in unravelling areas of my own identity, understanding, lens, bias, and privileges). I can also empathize with the demands and challenges of competing responsibilities and navigating varied facets of human experience alongside the complexities of student life; With personal and familial experiences navigating challenges and security surrounding varied personal, social, economic, and educational conditions, this in part adding into an awareness of the critical need for strong community support networks and a reflective lens of care and empathetic understanding.

These academic, professional, and personal experiences contribute to my individual positionality and underlying subjectivities. Furthermore, with added work experience mentoring students on library research skills and best practices, this has supported my own development of strong research skills and practices which has been an essential and invaluable asset to this thesis. The topic of study on university students in Canada and contextual considerations has been an area of individual interest, and aspects of the literature focus reflect this positioning (e.g., student demographic, university environment, provincial Canadian landscape). With a commitment to methodological integrity, transparency, and rigor: safeguards have been implemented within the methods and throughout the research process to mitigate power imbalance and biases, with ongoing reflexive engagement to remain attentive to my social positions, role and influence as the researcher.

2.6) Methods

Research Protocol

Item 5: Protocol & Registration

In the early stages of this research project after the scoping review methodology was determined to be an appropriate approach, a detailed plan was outlined in the research proposal for this master's thesis. A crucial first-step in the scoping review process is a detailed protocol which will support a well-thought-out plan of action (Peters et al., 2020, p. 2122). As this study has been conducted for a thesis project, modifications to the standard scoping review protocol format and process were required to adhere to the procedures and structure outlined by the associated academic institution for this thesis. With some noticeable overlap between protocol and proposal development, the process and efforts of curating a protocol were integrated into the development of the thesis proposal, which resulted in a proposal document that served as the guiding protocol for this study. This included the 'predefinition' of elements such as objectives, questions, and methods while structuring and identifying the starting framework for intentional, transparent, and unbiased reporting (Peters et al., 2020, p. 2122). This proposal (protocol) was not made publicly available/published for access as is common for scoping reviews, however descriptions outlining changes to this proposal (protocol) have been integrated into this thesis (Peters et al., 2020, p. 2122).

The following subsections reflect the iteratively refined methods utilized in the final review and is broadly structured utilizing Arksey & O'Malley's (2005) six-stage scoping review framework, the PRISMA-ScR reporting criteria provided by the JBI group (Tricco et al., 2018b),

with further recommendations on reporting items from the updated guidance for conducting scoping reviews as published by Peters et al. (2020).

Review Question

Framework Stage 1: Identifying the Research Question

Item 3: Rationale

Reflected across the broad initial literature search (throughout the literature overview) is the complexity of context as a concept through fragmented contextual discourse surrounding university students (i.e., student context, what this may entail, along with practical application considerations and insight for university teaching practice). There are limited explicit discussions in the (general) western education literature landscape encompassing direct focus and attention to university/student context, along with deeper level and increasingly nuanced contextual exploration and discourse. There is evidence that relevant and related information may be available, however distributed across a range of potential sources and scattered throughout a large scope of literature. There is further a lack of clarity on the concept of ‘context’ and accompanied terminology, conceptual ideas like ‘contextual considerations’, and on key characteristics and/or factors surrounding this topic area. The implications of this may include further reliance on implicit (or subjective) understanding, continued perpetuation of ambiguity, and extrapolated insights necessary for practice.

Considering the complexities of context and its interrelated nature with other variables, the fragmented literature landscape and clarity issues, distinct landscape in which university students in Canada are situated, along with diverse and evolving student needs, this study is

necessary to begin to address this identified gap and problem. The scoping review methodology will support this endeavor.

Item 4: *Objectives*

As the aim of this study was to provide a preliminary exploration into what is known (and what is not known) about the concept of contextual considerations relating to students enrolled in Canadian public university institutions, and the practical application of these considerations in university teaching practice, the objectives identified for this review are to:

- Clarify the construct of contextual consideration(s)
- Identify key characteristics and factors of contextual considerations which relate to students enrolled in Canadian public university institutions.
- Compile and examine information pertinent to the practical application of contextual considerations in university teaching practice within Canada.

To systematically explore the broad range of literature across different types of sources and spanning varied disciplines and fields of study, the guiding research question for this review is as follows:

What is known about the concept of contextual considerations relating to students enrolled in Canadian public university institutions and the practical application of these considerations in university teaching and learning practice?

Utilizing the population-concept-context (PCC) framework to conceptualize the research question and objectives (Peters et al., 2020; Tricco et al., 2018b), the key elements incorporated

are university students (population), contextual considerations (concept), and Canadian public university settings (context [i.e., setting]).

Search Strategy

Framework Stage 2: Identifying Relevant Studies

As this study required an exploration of a broad range of literature across various disciplines and sources, and considering recommendations across the scoping review literature on search strategies (Arksey & O'Malley, 2005; Levac et al., 2010; Tricco et al., 2018b; Peters et al., 2020), predetermined strategies were developed to support identifying relevant studies through a rigorous and systematic search process. This review initially considered both scholarly (e.g., peer-review journal articles, books) and grey literature (e.g., government documents, reports from various institutional departments and/or organizations, conference papers/commentaries from associations, open-access resources, etc.). However, throughout the search process the focus was primarily on scholarly literature (i.e., peer-reviewed journal articles).

Digital search engines were utilized throughout the search process, such as Novanet (version access affiliated with the Mount Saint Vincent University Library) and Google Scholar for identifying scholarly sources, as well as Google for initial searches into potential grey literature available. Specific methods for searching which were carried out include database searches, browsing through reference lists, and a few manual searches across websites/digital platforms. Predetermined key terms for the search input were tested in the early stages of the search and refined both in consultation with an academic research librarian and iteratively. To clearly document this search process and the refinements along the way, and as an integral

citation/source management and organization tool, the Zotero (version 7.0.17) application was utilized.

Study/Source of Evidence Selection

Framework Stage 3: Study Selection

Item 6: Eligibility Criteria

The main eligibility criteria which served as the preliminary guide for the inclusion and exclusion of sources of evidence were informed by the PCC framework, which focuses on university students as the population, contextual considerations as the concept, and Canadian public university settings as the context. The specifics of the inclusion and exclusion criteria were refined in the early stages of the search process for the final review as detailed below.

This review sought sources of evidence which directly related to university students (population) in discussions of context and contextual considerations. The inclusion of students reflects the population demographic identified across the background literature (literature overview), and the gap in literature surrounding explicit discussions on contextual considerations with direct relation to students. The added limit to students in university (opposed to both university and college) was decided based on the feasibility for conducting this study, where this focus within itself is broad in scope and given that university students within Canada are highly diverse (even within an individual institution, let alone on a national level).

I've described the concept of contextual considerations as varied individual and wider level factors, elements, influences which can be diverse, dynamic, and encompass many facets and intersecting pieces. However, this description was extrapolated and subjectively defined

from the literature discourse within the literature overview. To assist in the conceptual clarification of contextual considerations and what they may entail, further sources of evidence were sought which offer explicit descriptions/discussions surrounding ideas of this concept. Throughout the review the eligibility criteria was widened to further include sources which may not be explicitly stated but could support in the conceptualization of contextual considerations as well as student context. To identify what characteristics/factors may include surrounding student context and contextual considerations in relation to university students in Canadian public universities, this review additionally included sources of evidence outlining characteristics/factors both within and outside of the academic institution. The conceptual frameworks within this study contributed to the categorization and organization of these findings. Throughout the review process, an added exclusion criteria included sources on contextualized learning practice, which is an active learning tool for students to engage further in learning processes. Although context terminology was utilized with these ideas, discourse did not fit with the particular focus on student context and considerations which is the purpose of this exploration.

The last PPC framework criteria element is context (i.e., setting), which for this review includes Canadian public universities. Sources of evidence either relating to or having a direct focus on public university institutions/settings across the Canadian provinces were eligible to be included. As it was preliminarily considered that this distinction between private and public institutions may not be made within the literature, this limit was only enforced if the distinction was explicitly made. Across the national landscape Canada is diverse through social, cultural,

political, educational, geographic, and governing ways: encompassing ten provinces and three territories. As the territories are distinct landscapes themselves, direct attention and consideration for the territories is warranted given the specific contexts in which students and university institutions are situated within. With this reasoning along with returning consideration to the feasibility of this study, the territories have been excluded from this study¹³. Relating to the discussion of population, universities will be included while colleges are excluded (as these institutional contexts are each distinct themselves). Further limits included universities which are public institutions, as public and private institutions are funded differently and have institutional/structural differences. Throughout the review search process an added eligibility criteria was added surrounding cross-sectional studies, so long as Canada was still integrated.

For eligibility criteria which extends beyond the PCC framework, limitations include sources published/produced from 2015 to 2025 for more recent data with relevance to current educational landscapes, and those published/produced in English considering the resources available for this study.

Item 7: Information Sources

As described in the search strategy, both published and unpublished sources through scholarly and grey literature were initially considered for use within the review, however it was quickly apparent across both these areas the minimal evidence sources available encompassing this review's particular focus. Recognizing that this was going to be an increasingly more demanding

¹³ Offering another potential area for future research.

task ahead, the focus was narrowed primarily to scholarly literature (i.e., peer-review journal articles). Initial searches were conducted in individual databases (e.g., Education Resource Complete [EBSCO]) however lower numbers of results were found and minimal articles were identified for the specific aspects this review was looking for. For this reason, the main Novanet catalogue search bar accessing the entire collection was utilized. Although not typically recommended, this was necessary for this particular (and interdisciplinary) topic to support in identifying sources which may relate to the focus of inquiry but not be accessible in the initial databases searched.

Item 8: Search

It is standard for scoping reviews to have a team of three or more reviewers throughout the project, especially within the search and screening processes. With this scoping review being conducted in the context of a master's thesis with limited resources available, a rapid scoping review approach was implemented and modification to this standard was required. Throughout this study there is only one primary reviewer¹⁴ who carried out the study.

Turning to reporting on the search, a full search strategy for one database is typically recommended to be included in a scoping review. The pre-determined database identified in the proposal for these purposes was Education Resource Complete (EBSCO), including publications from 2015 to 2025, and documenting items such as the specific search terms used, Boolean operators, further search filters/limits, and results. However, as this study required a broader

¹⁴ Although there is only one primary reviewer, as this study is being conducted for a university master's thesis it will be overseen by a faculty supervisor for consultation and feedback.

preliminary search within the main Novanet catalogue, the Education Resource Complete (EBSCO) database search process has not been included.

For the Novanet catalogue search, the following search terms with Boolean tools (e.g., asterisks) were utilized, and tried in different combinations along with Boolean operations (e.g., AND, OR): Context*, Student*, Canad*, Universit*. Filters were additionally utilized in this search such as: ‘Available Online’, ‘Peer-reviewed Journals’, ‘Articles’, ‘2015 to 2025’ (creation date), ‘English’ (language).

Item 9: Selection of Sources of Evidence

With the inclusion and exclusion criteria for this study at the forefront of the search, the selection of sources of evidence¹⁵ began with the search process and initial screening of both the title and abstract for potentially relevant sources. Sources identified were saved to the Zotero (7.0.17) application to be collated, followed by the removal of duplicates, review of full, and the determination of included and excluded sources based on the inclusion criteria. For a systematic screening process a screening tool was utilized in the Excel application (version 16.98). See Appendix A.

Data Extraction

Framework Stage 4: Charting the Data

Item 10: Data Charting Process

¹⁵ Tricco et al. (2018b) further defines *sources of evidence*: “A more inclusive/heterogenous term is used to account for the fact that different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, policy documents) may be eligible in a scoping review, as opposed to only studies. This is not to be confused with *information [sources]*” (p. 24).

After full-text screening, included sources were extracted for data by the one primary reviewer. This process entailed the use of a charting table/form which was iteratively refined and revised throughout extraction and analysis process, to ensure extracted data is relevant and aligns to the individual scoping review, including a ‘mixture’ of general and specific information (Arksey & O’Malley, 2005, p. 27; Peters et al., 2020; Tricco et al., 2018b). A draft of the data extraction tool had been created prior to the review so it could be pilot-tested¹⁶ (on a minimum of three sources) by the individual reviewer for insight on further developments and specifics necessary dependent on what was found. After multiple refinements, a final data extraction table was drafted to accommodate the analysis process.

Item 11: Data Items

Prior to the review a data extraction form was drafted holding (qualitative) data items preliminarily identified according to the general focus of the proposed study. These items were grouped relating to their situated role spanning from documenting general source information to identifying specifics relevant to the review.

After multiple revisions and iterative refinements carried out throughout the review process, the finalized data items utilized to extract data from the included sources are: (1) author/year; (2) title; (3) discipline/field; (4) country of origin (source); (5) type of study/work (i.e., research); (6) province/location (Canada); (7) institution type; (8) country/location (outside Canada); (9) education environment terms used (e.g., university, college, postsecondary, higher

¹⁶ As recommended by Peters et al. (2020) the form should be piloted “on at least two to three studies prior to use to ensure that all necessary data will be captured appropriately” (p. 2124).

education); (10) context terms count (number of times utilized); (11) process (bioecological component); (12) person (bioecological component); (13) context (bioecological component); (14) time (bioecological component); (15) student subgroups; (16) defining context concept(s). See Appendix B.

Data Analysis & Presentation

Framework Stage 5: Collating, Summarizing, and Reporting the Results

Item 12 (Optional): Critical Appraisal of Individual Sources of Evidence

Critical appraisal is an optional component to include in a scoping review, only incorporated if required or deemed necessary depending on the study specifics or focus (Tricco et al., 2018a; Peters et al., 2020; JBI, 2022, 17:45-18:45). This was not required or necessary for this study, so critical appraisal has been excluded.

Item 13: Synthesis of Results

The accumulation of data collected across all included sources using the data extraction form has been collated and summarized through descriptive statistical analysis and basic (descriptive) qualitative content analysis (Pollock et al., 2023). Descriptive statistical analysis (e.g., basic frequency counts) has been used to organize and summarize quantifiable data items such as general source characteristics for clear and concise reporting. Basic (descriptive) qualitative content analysis has been used also for text-based data items extracted in the review (e.g., elements across the bioecological components).

Pollock et al. (2023) describe basic qualitative content analysis as “a descriptive approach to analysis [which] involves a process of open coding to code concepts or characteristics into

overall categories” (p. 11). A few approaches to this type of analysis for scoping reviews are outlined further by Pollock et al. (2023), including an inductive approach which has been utilized in this study. The conceptual framework for this study, Bronfenbrenner’s bioecological theory and PPCT model, was a foundational framework integrated into the analysis providing options for categorization to support the synthesis and organization of some data items for content analysis. Considering all the key components reflecting the research question and objectives within the extraction table, however, this framework alone for coding did not reflect the entirety of the data and evidence needed. For this reason, an inductive approach over a deductive approach has been identified. Because of this approach, a variable was identified on student subgroups and added. For descriptive statistical analysis components, they were broadly organized with the general framework of the PCC (person, concept, context) components in mind.

Pollock et al. (2023) provides a detailed overview with descriptions and practical discussions of an inductive approach to basic qualitative content analysis. JBI (2022) concisely summarize these processes included in an inductive approach, which guided the extraction, analysis, and reporting for this review: (1) Immersion in data, (2) open coding, (3) develop coding framework, (4) extraction and organizing, (5) categorization (JBI, 2022, 38:20-39:46; Pollock et al., 2023, p. 13-14). The results of this data extraction and analysis has been narratively summarized in the upcoming sections, and tables have been created and included in the appendices to present the data.

Consultation

Framework Stage 6: Consultation (Optional)

Consultation is not required within the current reporting guidance for scoping reviews, however, can be useful for some scoping review studies depending on the specific purpose and use of those consults (Arksey & O'Malley, 2005; Levac et al., 2010). The framing of consultation has been enhanced more recently, reflecting broader considerations to what this component may include. In shifting the language from consultation to co-collaboration with 'knowledge users' (Pollock et al., 2022b, p. 969-970), reflected is the variety of potential types of 'knowledge users' and how engagements "can occur through various ways and times throughout the review processes" (Pollock et al., 2022b, p. 973). Collaboration with 'knowledge users' was not included within this review, however with this topic area considerations of integrating this component in future research may be beneficial.

2.7) Ethical Considerations

Within this review literature publicly available and made accessible through legislation/regulation was the main source of information collected for analysis and discussion, posing minimal risk. There were no recruited participants as this research utilized a scoping review methodology, and adherence was made to guidelines as understood and issued through the TCPS 2 (2022). See Appendix F. As a safety measure, clearance for a research ethics exemption was obtained from the University Research Ethics Board (UREB) from Mount Saint Vincent University.

CHAPTER 3: Review Results & Discussion

3.1) Results

Selection of Sources of Evidence

After removing 8 duplicates, the results of the search process included the identification of 164 individual sources to be screened each by abstract and title. Out of these, 130 sources were excluded from eligibility for full-text review. The full-text of 34 individual sources were screened, following another 27 sources to be excluded for the following reasons: for 1 source the full-text was unable to be accessed, 2 sources the full-text was not available in English, 3 sources were not specific to the Canadian setting, 5 sources were specific to college environments, 4 sources had a primary/secondary education level focus, and lastly 5 sources the term/concept of context were not references again in the body of the text. The results of this screening process found 7 sources to be included in the review. See Appendix C.

Characteristics of Sources of Evidence

Relating to descriptive statistical data, each source of evidence information characteristics are provided, including the title, discipline/field, source country of origin, and type of research study/work. Characteristics of the context (setting) are further provided, such as the province/location within Canada, institution type (e.g., public or private), country/location outside of Canada, and education environment terms used (e.g., university, college, higher education, postsecondary). Further provided was data on the number of times the term/related terminology of context was utilized within the source. See Appendix D.

Relating to descriptive content analysis data, data from each source surrounding characteristics of the bioecological framework components are provided. This includes the process (e.g., proximal processes, inverse proximal processes), person (demand characteristics, resource characteristics, force characteristics, and unspecified), context (e.g., microsystem, mesosystem, exosystem, macrosystem, ex-macrosystem), and time (micro-time, meso-time, macro-time). See [Appendix E](#). Additionally, data on student subgroups are also added. See Table E9.

Results of Individual Sources of Evidence & Synthesis of Results

The articles included in the review are by Anakin et al. (2018), Brennan et al. (2021), Gfellner & Cordoba (2020), Huot et al. (2020), Lindsay et al. (2023), Othman et al. (2019), and Rusticus et al. (2020), of which are representative of the current literature landscape identified surrounding the topic of university student context and considerations in Canada. The characteristics of interest for this review can be categorized in two broad groups based on type of analysis. The first consists of descriptive statistical analysis items, categorized under the subgroups of source information, context (setting), and concept (context terms). See [Appendix D](#).

From the articles included within the review four out of the seven articles have some form of terminology surrounding context within the title. Three articles out of seven are produced from and interdisciplinary discipline/field (Anakin et al., 2018; Brennan et al., 2021; Huot et al., 2020), another three articles from psychology (Gfellner & Cordoba, 2020; Lindsay et al., 2023; Rusticus et al., 2020), and one from health sciences (Othman et al., 2019). Five out of the seven articles had its source origin solely from Canada (Brennan et al., 2021; Huot et al.,

2020; Lindsay et al., 2023; Othman et al., 2019; Rusticus et al., 2020) , while two are from co-collaborating countries: the first with collaborations from Canada, the United Kingdom, and New Zealand (Anakin et al., 2018) while the other from Canada and Spain (Gfellner & Cordoba, 2020). Five of the articles are research qualitative research studies (Anakin et al., 2018; Huot et al., 2020; Lindsay et al., 2023; Othman et al., 2019; Rusticus et al., 2020). One source is a report (Brennan et al., 2021) and one other a quantitative research study (Gfellner & Cordoba, 2020). See Table D1. Out of the context (setting) subgroup, the most significant finding is the use of education environment terms (e.g., university, college, postsecondary, higher education) of which were frequently used interchangeably and often ill-defined in use. Brennan et al. (2021) provided a clearer description than the rest in utilizing post-secondary and higher education with the added terminology of ‘sector’ to describe their use as umbrella terms encompassing different education or training environments (such as colleges, and universities). See Table D2. Additionally charted is the number of times the term context along with related terminology were included in the body of the full-text source (except for the references): Context and varied terminological uses of this were identified 35 times in the source for Anakin et al. (2018), 9 times for Brennan et al. (2021), 61 times for Gfellner & Cordoba (2020), 12 times for Huot et al. (2020), 16 times for Lindsay et al. (2023), 18 times for Othman et al. (2019), and 2 times for Rusticus et al. (2020). These results reflect the common terminology use surrounding context and related terms, however not reflective of the level of depth to which ideas of student context are being explored.

The second group based on type of analysis consists of descriptive content analysis items, categorized under the bioecological components (process, person, context, and time) and with added student subgroup descriptions. Data items extracted under the process component are compiled in Table E1 and Table E2, the person component are compiled in Table E3 and Table E4, the context component in Table E5 and Table E6, along with the time component in Table E7 and Table E8. Across the review and throughout these tables it is evident how highly interrelated characteristics and elements are across multi-variant levels relating to students, student contexts, and contextual considerations. Also apparent is the need for further context-based research inquiry across varied levels of context (from individual to wider levels).

3.2) Results Discussion

Summary of Evidence

There has been an increasing presence of literature (especially throughout the past decade) exploring ideas of education, teaching, and learning contexts. Integrating discourse on contexts of education, teaching, and learning include varied sectors such as primary/secondary schooling, college/university institutional environments, and adult education (e.g., community and vocational environments). This was evident across the rapid scoping review search and screening processes. However, no empirical evidence was identified in defining student context and contextual considerations related to Canada (specifically the nuanced discourse and holistic integration of considerations both within and beyond the university institution). Increasing discourse surrounding the importance of holistic and person/student-centered approaches, and understandings of students with relation to contextual elements may be promising to offer further

insights into different components of context: student contexts and considerations of what this may entail (i.e., explorations beyond the university environment). Utilizing the bioecological components as an organizational tool was useful in consolidating the range of interrelated elements which can be challenging to conceptualize, and of which may support further efforts to explore this immense undertaking of direct context-based student research inquiry (as well as the potential landscape of additional context-based research opportunities for other populations as well).

Identified throughout the review is how context and related terminology is heavily utilized throughout education literature, although literature is limited surrounding direct focus on understanding, defining, and exploring what student context is and what its considerations may entail. Context terminology use has been operationalized in numerous ways, though there are clarity issues due to the lack of explicitly defining of use. The Merriam-Webster Dictionary (2025) provides two definitions for the use of the term context, which are (1) “the parts of a discourse that surround a word or passage and can throw light on its meaning” and (2) “the interrelated conditions in which something exists or occurs: environment, setting”. Throughout the literature identified and included within the rapid scoping review, both uses are reflected with lacking delineation of use (i.e., not explicitly defined). In terms of this context-based research inquiry the ambiguity of terminology makes the dissemination of articles (which may be relevant to student context) significantly more challenging: especially considering the level of complexity surrounding the quantity of potential interrelations. Additional challenges surrounding terminology identified relates to the ambiguity in use of education environment terms (e.g.,

university, college, higher education, post-secondary OR postsecondary). Multiple of these terms were utilized throughout each included source within the review, some of which used these terms more loosely and interchangeably while other were slightly more consistent and specific. With the focus of university student context in this study, these findings are significant for consideration for future research approaches.

Limitations

Limitations for this study include time and resource constraints. To accommodate the timeline allotted and resources available for the thesis project, considerations surrounding the streamlining of the research process were required, with modifications necessary to the standard scoping review process (e.g., one reviewer). Language restrictions on sources eligible (e.g., english only) and the refined focus on primarily scholarly literature are potential further limitations to this study, however are opportunities for further additions to future research.

Conclusions

The aim of this rapid scoping review was to provide a preliminary exploration into what is known (and what is not known) about the concept of contextual considerations relating to students enrolled in Canadian public university institutions, and the practical application of these considerations in university teaching practice. No empirical evidence was identified in defining student context and contextual considerations related to Canada. However utilizing the bioecological components as an organizational tool was useful in consolidating a range of interrelated elements which can be challenging to conceptualize, providing examples of elements

which could be related to student context, and supporting further efforts to explore this immense undertaking of direct context-based research inquiry. The scoping review methods were a useful guide for this search.

The ambiguity of terminology made the dissemination of articles (which may be relevant to student context) significantly more challenging. Recommendations for future research include the defining and consistency of use of educational terminology (e.g., university, college, higher education, and postsecondary), along with the defining of use and reference to ‘context’ and related terminology in education research (especially in cases where context terminology is being used for different purposes in the same paper). As a contemporary area of inquiry, this research area is timely and future research is necessary to support further explorations into student context and what considerations may entail. Further explorations across both scholarly and grey literature sources are recommended. Furthermore, interdisciplinary collaboration and connections with diverse range of knowledge users (e.g., students, instructors, staff, administrators, practice and policy makers, adult educators, and researchers) may be beneficial.

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Appendix A

Screening Tool Utilized for Source Selection

Table A*Screening Tool Utilized in Excel Application*

Preliminary Screening Items	Cell Drop Down Menu Options (If Applicable for Items)
Author	
Year	
Title	
Citation	
Method Used (To Find Source)	
Date Found/Screened	
Screening Status	(screened, not screened, partly screened)
Screening Type	(title, abstract, title/abstract)
Within Eligible Date Range?	(yes, no, uncertain)
Source Available in English?	(yes, no, uncertain)
Related to Population?	(yes, no, uncertain)
Related to Concept?	(yes, no, uncertain)
Related to Context?	(yes, no, uncertain)
Additional Information Relevant to Eligibility (or Ineligibility)	
Full Text Available?	(yes, no, not applicable)
Copyright Information	
Eligible for Full Text Review?	(yes, no, uncertain)
Duplicate?	(yes, no, uncertain)
Date of Full Text Screening	
Full Text Screening Findings	(included, excluded)
Exclusion Reasoning	
Notes	

Appendix B

Data Extraction (Charting)

Table B*Initial Extraction Table*

	Preliminary Extraction Items	Examples/Descriptions of (easily interpretable) Items
1	Author/Year	
2	Title	
3	Discipline/Field	(e.g., authors affiliated discipline/field)
4	Country of Origin (Source)	(e.g., where source was originally developed for or published in)
5	Type of Study/Work	(e.g., qualitative or quantitative, specific methodologies)
6	(Canada) Province & Location	(e.g., Canada, [specific] province)
7	Institution Type	(e.g., public or private)
8	(Outside Canada) Country & Location	(i.e., for cross-sectional studies)
9	Education Environment Terms Used	(e.g., university, college, postsecondary, higher education)
10	Context Term Count	(i.e., number of times term was utilized within source, except for the references)
11	Bioecological Component: Process	(e.g., data relating to proximal processes, inverse proximal processes)
12	Bioecological Component: Person	(e.g., data relating to demand characteristics, resource characteristics, force characteristics, and unspecified [i.e., uncertain where they may be situated, but data relates to the person])
13	Bioecological Component: Context	(e.g., data on students situated across microsystems, mesosystems, exosystems, macrosystems, ex-macrosystems [i.e., global])
14	Bioecological Component: Time	(e.g., data related to micro-time, meso-time, macro-time)
15	Student Subgroups	(e.g., undergraduate, graduate, etc.)
16	Defining Context Concept(s)	(e.g., N/Av)

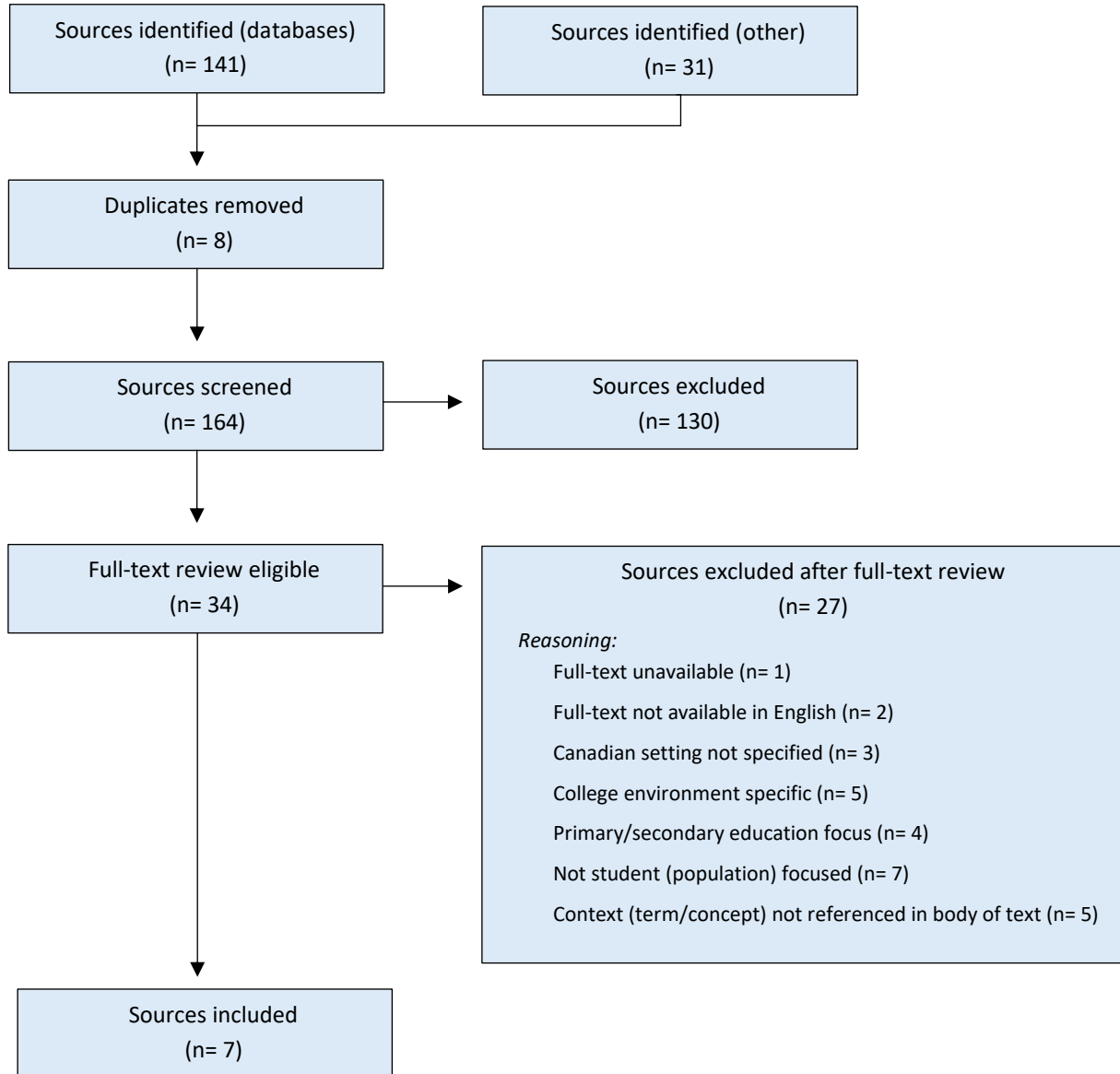
Note: This table underwent alterations and refinements from the initial extraction table draft outlined in the proposal... however, the proposal draft table was initially inspired by “Scoping Reviews: Expanding Methodological Approaches to Literature Reviews in Adult Education” by A. Samuel, 2024, *Adult Learning*, 35(4), p. 222 (<https://doi.org/10.1177/10451595231201346>). Copyright 2023 by Anita Samuel.

Note: The acronym(s) which will be utilized throughout include ‘N/Av’ (Not Available), ‘N/Ap’ (Not Applicable), and ‘N/I’ (Not Identified).

Appendix C

Figure 1

Selection of Sources of Evidence: Flow Chart



Appendix D Data Extraction (Results)

Table D1

Data Extraction Items: Source Information

CHARACTERISTICS OF SOURCES OF EVIDENCE							
DATA CHARACTERISTICS	EVIDENCE SOURCES						
SOURCE INFORMATION							
Author/Year	Anakin et al. (2018)	Brennan et al. (2021)	Gfellner & Cordoba (2020)	Huot et al. (2020)	Lindsay et al. (2023)	Othman et al. (2019)	Rusticus et al. (2020)
Title	The contextual nature of university-wide curriculum change	Investing in a better future: higher education in Canada and post-COVID Canada	A closer look at economic context in identity distress, identity development, and adjustment to university	Tackling complex social challenges within neoliberal constraints: The context shaping 'intellectual quality of life' (iQoL) in a Canadian University Context	Understanding the connection between student wellbeing and teaching and learning at a Canadian research university: A qualitative student perspective	Perceived impact of contextual determinants on depression, anxiety and stress: A survey with university students	What are the key elements of a positive learning environment? Perspectives from students and faculty
Discipline/Field	Interdisciplinary	Interdisciplinary	Psychology	Interdisciplinary	Psychology	Health Sciences	Psychology
Source Origin (Country)	Canada, United Kingdom, New Zealand	Canada	Canada & Spain	Canada	Canada	Canada	Canada
Type of Study/Work	Qualitative (case-study)	Report	Quantitative (cross-sectional)	Qualitative (case-study)	Qualitative	Qualitative (cross-sectional)	Qualitative

Appendix D

Data Extraction (Results)

Table D2*Data Extraction Items: Context (Setting)*

CHARACTERISTICS OF SOURCES OF EVIDENCE							
DATA CHARACTERISTICS	EVIDENCE SOURCES						
<i>CONTEXT (Setting)</i>							
Author/Year	Anakin et al. (2018)	Brennan et al. (2021)	Gfellner & Cordoba (2020)	Huot et al. (2020)	Lindsay et al. (2023)	Othman et al. (2019)	Rusticus et al. (2020)
(Canada) Province & Location	Canada (Hamilton, Ontario)	Canada	Canada (non-metropolitan city)	Canada	(Western) Canada	Canada (Toronto, Ontario)	Canada
Institution Type	N/Av	N/Av	Public	N/Av	N/Av	N/Av	N/Av
Country & Location (Outside Canada)	United Kingdom, [Gloucestershire]	N/Ap	Spain (metropolitan city)	N/Ap	N/Ap	N/Ap	N/Ap
Education Environment Terms Used	University, higher education	College AND University, Postsecondary education (PSE) sector, Higher education sector, Higher education	Postsecondary, university, college	University, higher education	University, postsecondary, higher education	Postsecondary, post-secondary	University, post-secondary

Note: The acronym(s) 'N/Av' refers to 'not available' while 'N/Ap' refers to 'not applicable'.

Note: The data characteristic of 'Context Terms Used (Number)' was determined using the 'command find' function with the input term 'context'. The number of times this term and related vocabulary/terminology integrating 'context' was identified in the source was reported (excluding those appearing in the reference list).

Appendix D Data Extraction (Results)

Table D3

Data Extraction Items: Concept (Context Terms/Use)

CHARACTERISTICS OF SOURCES OF EVIDENCE							
DATA CHARACTERISTICS	EVIDENCE SOURCES						
<i>CONCEPT (Context Terms/Use)</i>							
Author/Year	Anakin et al. (2018)	Brennan et al. (2021)	Gfellner & Cordoba (2020)	Huot et al. (2020)	Lindsay et al. (2023)	Othman et al. (2019)	Rusticus et al. (2020)
Context Term Count (Number)	Context and varied terminological uses of this were identified 35 times in the paper (excluding reference list)	Context and varied terminological uses of this were identified 9 times in the paper (excluding reference list)	Context and varied terminological uses of this were identified 61 times in the paper (excluding reference list)	Context and varied terminological uses of this were identified 12 times in the paper (excluding reference list)	Context and varied terminological uses of this were identified 16 times in the paper (excluding reference list)	Context and varied terminological uses of this were identified 18 times in the paper (excluding reference list)	Context and varied terminological uses of this were identified 2 times in the paper (excluding reference list)

Appendix E

Data Extraction (Results)

Table E1

Data Extraction Items: Process (Bioecological Model Element 1)

BRONFENBRENNER & COLLABORATORS		EVIDENCE SOURCES		
BIOECOLOGICAL COMPONENT	CHARACTERISTICS OF COMPONENT	ANAKIN ET AL. (2018)	BRENNAN ET AL. (2018)	GFELLNER & CORDOBA (2020)
Process	Proximal Process	<ul style="list-style-type: none"> Curriculum, practice approach; co-construction of knowledge amongst students and teacher Student-oriented versus teacher-oriented instruction 	<ul style="list-style-type: none"> Higher education practices nurturing student development 	<ul style="list-style-type: none"> Social support (or lack thereof) Involvement with classmates and faculty Conditions Friendships
	Inverse Proximal Process			

Table E2

Data Extraction Items: Process (Bioecological Model Element 1)

BRONFENBRENNER & COLLABORATORS		EVIDENCE SOURCES			
BIOECOLOGICAL COMPONENT	CHARACTERISTICS OF COMPONENT	HUOT ET AL. (2020)	LINDSAY ET AL. (2023)	OTHMAN ET AL. (2019)	RUSTICUS ET AL. (2020)
Process	Proximal Process	<ul style="list-style-type: none"> Social and relational climate Solitary versus social aspects of academics Bullying, harassment 	<ul style="list-style-type: none"> Relational practices between teachers and learners (e.g., instructor flexibility, fairness and transparency, communication and collaboration, focus on applied learning) Instructor support 	<ul style="list-style-type: none"> Individual and group level activities Social relations (e.g., social exclusion, discrimination [race, ethnicity, gender]) Family relations (e.g., family conflict, obligations, expectations) Interpersonal factors/relations Person and environmental contributions to mental health (e.g., stress, anxiety, depression) External expectations (e.g., instructor) 	<ul style="list-style-type: none"> Student and faculty members interrelations; Both key players in educational learning environment (e.g., experiences and expectations co-created) Teacher-student and student-peer interrelations and curriculum. Student learning environment (i.e., persons, interactions, systems) Engagement with learning Relationships (e.g., faculty support, peer interaction, group work)
	Inverse Proximal Process				

Appendix E

Table E3

Data Extraction Items: Person (Bioecological Model Element 2)

BRONFENBRENNER & COLLABORATORS		EVIDENCE SOURCES		
BIOECOLOGICAL COMPONENT	CHARACTERISTICS OF COMPONENT	ANAKIN ET AL. (2018)	BRENNAN ET AL. (2018)	GFELLNER & CORDOBA (2020)
Person	Demand Characteristics	N/I	<i>Multiple identities</i> <ul style="list-style-type: none"> • Race • Gender 	<ul style="list-style-type: none"> • Age • Ethnicity • Language • Gender • Sex
	Unspecified		<i>Multiple identities</i> <ul style="list-style-type: none"> • Nationality • Citizenship • Disability • Sexuality 	<ul style="list-style-type: none"> • <i>Identity</i> <ul style="list-style-type: none"> ◦ Sexual orientation ◦ Religion • Program of study (e.g., professional versus general academic university programs)
	Resource Characteristics	N/I	<ul style="list-style-type: none"> • Economic resources • Non-economic resources • Financial resources (e.g., higher demands for international students: tuition and living financial resources required) <ul style="list-style-type: none"> • Employment status • Ties to communities locally, regionally, nationally, internationally • Technology literacy • Technology access • Accessibility needs • Inclusion 	<ul style="list-style-type: none"> • Cultural factors • Culture • Economic factors • Employment • Parental education • (Public) Lack of academic preparation at the post-secondary level (Canada) • Developmental stage • Country/location of origin • Prior education experiences
	Unspecified			<ul style="list-style-type: none"> • Academic, social, personal-emotional adjustment to university (<i>dimensions of student functioning</i>)
	Force Characteristics	N/I	N/I	<ul style="list-style-type: none"> • Adaptive functioning • Ruminative exploration (<i>maladaptive process</i>) • Personality traits • Mental health • <i>Identity domains</i> <ul style="list-style-type: none"> ◦ Commitment making

Note: The acronym 'N/I' refers to 'not identified'.

Appendix E

Table E4

Data Extraction Items: Person (Bioecological Model Element 2)

BRONFENBRENNER & COLLABORATORS		EVIDENCE SOURCES			
BIOECOLOGICAL COMPONENT	CHARACTERISTICS OF COMPONENT	HUOT ET AL. (2020)	LINDSAY ET AL. (2023)	OTHMAN ET AL. (2019)	RUSTICUS ET AL. (2020)
Person	Demand Characteristics	N/I	<ul style="list-style-type: none"> Gender Age Ethnicity 	<ul style="list-style-type: none"> Gender Age group Language Ethnicity 	<ul style="list-style-type: none"> Gender
	Unspecified		<ul style="list-style-type: none"> Personal characteristics 	<ul style="list-style-type: none"> Social factors Program of study (major) 	<ul style="list-style-type: none"> Sense of community, belonging
	Resource Characteristics	<ul style="list-style-type: none"> Responsibilities outside of academics Balancing multiple responsibilities (e.g., graduate students) 	<ul style="list-style-type: none"> Perceptions of teaching/learning context Social characteristics 	<ul style="list-style-type: none"> Migration Immigration Country born in Housing Socioeconomic factors (e.g., commuting to school/work) Family Developmental stage Relationship status Obligations apart from university Health Employment Year of study 	<ul style="list-style-type: none"> Year of study Work-life balance Commuting
	Unspecified		<ul style="list-style-type: none"> Wellbeing Mental and physical health 	<ul style="list-style-type: none"> Adjustment to new environment 	<ul style="list-style-type: none"> Emotional climate
	Force Characteristics	N/I		<ul style="list-style-type: none"> Mental health 	<ul style="list-style-type: none"> Mental health Cognitive functioning Stress

Note: The acronym(s) 'N/I' refers to 'not identified'.

Appendix E

Table E5

Data Extraction Items: Context (Bioecological Model Element 3)

BRONFENBRENNER & COLLABORATORS		EVIDENCE SOURCES		
BIOECOLOGICAL COMPONENT	CHARACTERISTICS OF COMPONENT	ANAKIN ET AL. (2018)	BRENNAN ET AL. (2018)	GFELLNER & CORDOBA (2020)
Context	Microsystem	<ul style="list-style-type: none"> Lecturer social context (e.g., teaching environment) Disciplinary culture (e.g., relationship to teaching and learning; approaches taken within environment) Departmental social context 	<ul style="list-style-type: none"> Home environment (e.g., campus housing) Local communities Individual university institution (e.g., interactions with particular cohort of faculty, staff, students/peers) 	<ul style="list-style-type: none"> Public university environment Communities
	Mesosystem	<ul style="list-style-type: none"> Departmental and lecturer social context 	<ul style="list-style-type: none"> Local and regional communities Relational dynamics across university environments (e.g., interactions with particular cohort of faculty, staff, students/peers) 	<ul style="list-style-type: none"> Public university environment and local area situated within (e.g., city) Home, local community, and university environment and experiences
	Exosystem	<ul style="list-style-type: none"> Departmental social context Lecturer social context Institutional social context 	<ul style="list-style-type: none"> Relational dynamics between community groups and multi-level government entities Individual ties to national and international communities Provincially allotted (varied) public funding/investments to universities Universities legislative governing Intergenerational inequities Provincial/federal policies, legislation 	<ul style="list-style-type: none"> Multiple levels of government (federal, provincial, etc.)
	Macrosystem	<p><u>University</u></p> <ul style="list-style-type: none"> Cultural environment factors (e.g., communication) Sociocultural environment Disciplinary culture (e.g., relationship to teaching and learning; approaches taken) 	<p><u>Postsecondary Institution</u></p> <ul style="list-style-type: none"> Sector diversity (e.g., particular cohort of faculty, staff, and students) Public funding (e.g., availability of public funding for universities; public investments) Historical Structural biases <p><u>Canada</u></p> <ul style="list-style-type: none"> Societal inequities Federal (National) policies, legislation Social, political, environmental challenges Internationalization (e.g., policies, processes, resources) Historically embedded systemic and structural policies, practices, and relations (e.g., colonial lens) 	<p><u>Macro-environmental circumstances</u></p> <ul style="list-style-type: none"> Social changes Political changes Economic changes Changes in contemporary societies <p><u>Canada</u></p> <ul style="list-style-type: none"> National economic stability Social, political, economic, cultural context/factors Social norms (e.g., lessening of traditional social norms; diverse, pluralistic societies) Globalization Individualist society
	Ex-Macrosystem (Global)			<ul style="list-style-type: none"> Pandemic Climate Change Colonization

Appendix E

Table E6

Data Extraction Items: Context (Bioecological Model Element 3)

BRONFENBRENNER & COLLABORATORS		EVIDENCE SOURCES			
BIOECOLOGICAL COMPONENT	CHARACTERISTICS OF COMPONENT	HUOT ET AL. (2020)	LINDSAY ET AL. (2023)	OTHMAN ET AL. (2019)	RUSTICUS ET AL. (2020)
Context	Microsystem	<ul style="list-style-type: none"> Social and relational climate at university institution Work/academic conditions (e.g., workloads, interpersonal relations) 	<ul style="list-style-type: none"> Physical teaching and learning environment (e.g., faculty policies, procedures teaching and learning practices) Classroom Virtual teaching and learning environment 	<ul style="list-style-type: none"> Campus life Family Community Work 	<ul style="list-style-type: none"> Classroom <ul style="list-style-type: none"> Physical, virtual
	Mesosystem	<ul style="list-style-type: none"> Home, work, university 	<ul style="list-style-type: none"> Physical and virtual learning environments Departments, programs, instructors 	<ul style="list-style-type: none"> Campus life, family, and community Social environments University, community, local environments 	<ul style="list-style-type: none"> Learning environment (e.g., psychological, social, cultural, physical settings in which learning occurs)
	Exosystem	<ul style="list-style-type: none"> Social and relational climate at university institution Institution (e.g., environment, structures, leadership, governance, management, policies, public funding) University administration (e.g., decision-making) Faculty working conditions (e.g., administrative, bureaucratic influences) Disciplinary structures (e.g., traditional disciplinary structures versus specialized, individualized structures) 	<ul style="list-style-type: none"> Teacher 'contexts' Departments 	<ul style="list-style-type: none"> Political environment (e.g., local, national, global news and events) Social environment 	<ul style="list-style-type: none"> Faculty backgrounds, environments, co-worker collaborations
	Macrosystem	<ul style="list-style-type: none"> Neoliberal contexts (e.g., influences, conditions) Reduction in public funding for institutions 	N/I	<ul style="list-style-type: none"> Political environments (e.g., national news and events) Social environment 	<p><u>University/Institution</u></p> <ul style="list-style-type: none"> Physical structure Expectations Overall culture (e.g., class sizes, community relations)
	Ex-Macrosystem (Global)	<ul style="list-style-type: none"> Global and social problems Increasingly globalized world Health pandemics Climate change Global refugee crises 	N/I	<ul style="list-style-type: none"> Political environment (e.g., global news and events) 	

Appendix E

Table E7

Data Extraction Items: Time (Bioecological Model Element 4)

BRONFENBRENNER & COLLABORATORS		EVIDENCE SOURCES		
BIOECOLOGICAL COMPONENT	CHARACTERISTICS OF COMPONENT	ANAKIN ET AL. (2018)	BRENNAN ET AL. (2018)	GFELLNER & CORDOBA (2020)
Time (Environment)		Continuity of university leadership support for student-centered practice/curriculum innovation	N/I	N/I
Time (Student)	Micro-Time	N/I	Inequitable or equitable spaces, practices	N/I
	Meso-Time	N/I	Inequitable or equitable spaces, practices	N/I
	Macro-Time	N/I	Generational differences, developmental differences in navigating space in contemporary times	N/I

Note: The acronym(s) 'N/I' refers to 'not identified'.

Table E8

Data Extraction Items: Time (Bioecological Model Element 4)

BRONFENBRENNER & COLLABORATORS		EVIDENCE SOURCES			
BIOECOLOGICAL COMPONENT	CHARACTERISTICS OF COMPONENT	HUOT ET AL. (2020)	LINDSAY ET AL. (2023)	OTHMAN ET AL. (2019)	RUSTICUS ET AL. (2020)
Time (Environment)		<ul style="list-style-type: none"> Global and social problems changing over time 	N/I	N/I	N/I
Time (Student)	Micro-Time	N/I	N/I	N/I	N/I
	Meso-Time	N/I	N/I	N/I	N/I
	Macro-Time	N/I	N/I	Transitional life-stages	N/I

Note: The acronym(s) 'N/I' refers to 'not identified'.

Appendix E

Data Extraction (Results)

Table E9

Data Extraction Items: Descriptors of Student Subgroups (Within Evidence Sources)

EVIDENCE SOURCES	STUDENT SUBGROUPS
ANAKIN ET AL. (2018)	<ul style="list-style-type: none"> • Undergraduate • Graduate • First-year students
BRENNAN ET AL. (2018)	<ul style="list-style-type: none"> • International students • Domestic students • Undergraduate students • Graduate students • Out-of-province students
GFELLNER & CORDOBA (2020)	N/I
HUOT ET AL. (2020)	<ul style="list-style-type: none"> • Graduate students • Doctoral students
LINDSAY ET AL. (2023)	<ul style="list-style-type: none"> • Professional program students • Undergraduate students • Graduate students
OTHMAN ET AL. (2019)	<ul style="list-style-type: none"> • Undergraduate students • Graduate students • First-generation
RUSTICUS ET AL. (2020)	<ul style="list-style-type: none"> • Undergraduate students • Upper-year students

Note: The acronym(s) 'N/I' refers to 'not identified'.

Appendix F

TCPS 2: CORE 2022 Certificate of Completion

Figure 2

Certificate of Completion (TCPS 2: Core 2022)



Note: Image of a certificate awarded for the successful completion of the online tutorial for research ethics guidance by the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2: Core 2022)