International Journal of Doctoral Studies

An Official Publication of the Informing Science Institute
InformingScience.org

IJDS.org

Volume 21, 2026

EXPLORING CANADIAN COMPILATION DISSERTATION GUIDELINES—A SCOPING REVIEW

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ABSTRACT

Aim/Purpose	This study presented a scoping review of the context, key structural components, and publication requirements of Canadian doctoral compilation dissertations.
Background	The compilation model is an emerging alternative to the traditional monograph format, potentially increasing author publication credits and enhancing skill development. However, this relatively new dissertation model comes with diverse naming conventions (e.g., *alternative format, article-based, cumulative, integrated, journal format, manuscript, paper-based, PhD by publication, PhD by published work,* and *topic-based* and varying formats (e.g., *Scandinavian and Sandwich)*, making standardization or comparison challenging for students, supervisors, and graduate studies guideline designers.
Methodology	Following the PRISMA-ScR guidelines, this scoping review explored current guidelines for the compilation model of doctoral dissertations at 32 top-ranked Canadian universities.
Contribution	This paper presents foundational insight into the Canadian compilation dissertation model, following similar studies in other nations such as Australia, the United Kingdom, and the United States. We derive the insights from a study that produces a mapped framework of guideline elements and the quantified prevalence of key requirements based on top-ranked institutions and publicly available documents.

Accepting Editor Louise Underdahl | Received: October 8, 2025 | Revised: February 21, 2026 | Accepted: March 5, 2026.
Cite as: Craig, C. D., Stokes, J., & Kay, R. (2026). Exploring Canadian compilation dissertation guidelines—A scoping review. *International Journal of Doctoral Studies, 21,* Article 1. https://doi.org/10.28945/5744

Findings	The findings from the review mirror global challenges in adopting the compilation model, including vagueness regarding formatting, author contributions, the total number of articles required, and what the concept of publication or publishability entails.
Recommendations for Practitioners	Five practical recommendations for compilation model dissertations focus on author contributions, disclosure of artificial intelligence use, publication of the literature review, copyright, and acceptable articles.
Recommendations for Researchers	Researchers can examine their own institutional dissertation and thesis practices to identify existing benefits and challenges, develop nuanced insights, adopt external guidelines, synthesize outcomes, and diffuse findings to enhance emerging researchers' experiences and outcomes.
Impact on Society	The larger implications of the paper's findings include greater context on the changing state of higher education and recommendations to increase the potential diffusion of research-informed findings that might otherwise be hidden.
Future Research	Building on the foundational insight in this review, future studies can expand the scope to include more Canadian institutions and educational levels, involve more universities, and gather participant perspectives from students, supervisors, and administrators.
Keywords	dissertation, thesis, manuscript thesis, compilation model, sandwich thesis, doctoral studies, university, higher education, supervision, administration

INTRODUCTION

A thesis or dissertation is critical to achieving a doctoral degree, a credential indicating the highest educational attainment and one achieved by approximately 1 to 2 percent of the global population (Sarrico, 2022). The traditional dissertation process typically requires students to independently demonstrate their ability to analyze existing evidence critically, conduct research, and communicate complex insight on a specialized topic through a culminating tome known as a monograph thesis (Anderson et al., 2020; Duke & Beck, 1999). However, universities around the world are experiencing profound changes which prompt reflection into their existing practices to enhance their viability and opportunities for student development, like willfully embracing alternative and pragmatic forms of doctoral dissertations including the *compilation model* which can further improve espoused skills such as writing, research capacity, and mentorship (Elmgren et al., 2016; National Academies of Sciences, Engineering, and Medicine, 2018; Nyquist & Woodford, 2000; Porter et al., 2018; Sarrico, 2022; Walker et al., 2012).

Gustavii (2012) proposed the term 'compilation model' as an encompassing term for different formats, which is appropriate here. Notably, because there are often varying naming conventions for the same concept, including *alternative formats, article-based, cumulative, integrated, journal format, manuscript, paper-based, PhD by publication, PhD by published work,* and *topic-based* (Anderson et al., 2020; Freeman, 2018; Gustavii, 2012; Porter et al., 2018; Rigby & Jones, 2020). Further nuance reflects the prospective versus retrospective nature of the compilation dissertation in the context of attaining a doctorate (Chong & Johnson, 2022; Solli & Nygaard, 2023). Terms such as article-based and sandwich, which are newer and more common in Australia, New Zealand, Scandinavia, and North America, refer to a planned approach to degree attainment (Kubota et al., 2021; Paltridge & Starfield, 2023; Solli & Nygaard, 2023). In contrast, terms such as PhD by publication and PhD by published are more common in the UK and refer to a retrospective approach in which a doctorate is awarded based on a collection of published work over a career (Chong & Johnson, 2022; Solli & Nygaard, 2023). From an administrative perspective, a prospective compilation must include content produced during doctoral

studies that is published or publishable (Mason et al., 2025; Solli & Nygaard, 2023). However, additional challenges arise due to diverse naming conventions and the planned or retrospective approach to adapting or developing new policies or guidelines (Rosenberg, 2023; Solli & Nygaard, 2023).

While the practices associated with compilation dissertations have been reviewed in other nations such as Australia, the United Kingdom, and the United States (Mason et al., 2025; Solli & Nygaard, 2022), this scoping review uniquely explores how the top Canadian universities embrace change by exploring the diffusion of compilation models through publicly accessible guidelines. At its foundation, a thesis or dissertation represents an opportunity for graduate students to position themselves as qualified academics with the potential to make a significant and unique contribution to knowledge in a particular field (Dunleavy, 2003; Larivière et al., 2008; Porter et al., 2018; Yoels, 1974). A dissertation helps prepare students for future academic pursuits and employment in research, often with the message that revising their tome can lead to a journal publication (Dunleavy, 2003; Freeman, 2018; Gross et al., 2012; Shirazi, 2018). Research output and the resulting publications are integral to the Canadian higher education system, as they align with its positioning as a top-performing, highly ranked nation for overall education attainment and quality (The Conference Board of Canada, 2024; Organization for Economic Co-operation and Development, 2025; Schneider et al., 2023; Wahid et al., 2022). The research demonstrates an institution's capacity to generate new academic knowledge and practical information, which is associated with institutional funding, sustainability, and student recruitment (Bekhradnia, 2016; Brankovic & Cantwell, 2022; Sarrico, 2022).

Unfortunately, the traditional monograph thesis is not considered a peer-reviewed document, and its value to the academic community has steadily declined over the last century (Evans et al., 2018; Larivière et al., 2008; Scholz, 2022; Yoels, 1974). Additional changes and challenges are associated with digital technologies and their impact on research access, practice, and writing (Hamaniuk et al., 2025; Johnson et al., 2018; Palmer, 2024). Globally, the monograph thesis offers relatively limited opportunities for publication (Asanov et al., 2024; Elmgren et al., 2016; Evans et al., 2018; National Academies of Sciences, Engineering, and Medicine, 2018; Smaldone et al., 2019), resulting in reduced academic capital, funding, and employment opportunities (Fyfe et al., 2017; McGrail et al., 2006). One approach to addressing publication challenges is to adopt the compilation model, in which chapters comprise a series of published or publishable papers (Mason et al., 2025; Porter et al., 2018; Solli & Nygaard, 2023). Conceptually, each has a single narrative or focal point; however, the monograph is a long-form novel, and a compilation is a series of short stories.

Dissertations Background

Dissertations emerged in European universities in the sixteenth and seventeenth centuries as a textual accompaniment to oral public disputations focusing on a specific topic (Duke & Beck, 1999; Scholz, 2022). In the early days of dissertations, they often held little value and were considered a near-worthless artifact in a grey zone of writing that could go up in smoke, as students would use them to light tobacco or as baking parchment (Scholz, 2022). However, with time, the writing structures became formalized, and the resulting tome spread across the globe. Over the last century, the dissertation has been a means of making a unique knowledge contribution, focusing on a single audience or subject, to earn a doctoral degree in the form of a monograph (Anderson et al., 2020; Duke & Beck, 1999; Scholz, 2022).

While we now hold dissertations in higher regard, many monograph dissertations do not receive attention in the context of being read or cited, have limited potential for being published due to scope and format, and students graduate without the experience of submitting publications to journals (Asanov et al., 2024; Evans et al., 2018; Freeman, 2018; Kousha & Thelwall, 2019; Larivière et al., 2008; Yoels, 1974). As the publication submission process can be uniquely challenging, the opportunity to publish during doctoral studies is also a skill-development opportunity. Furthermore, when a *focus-down* model of writing occurs, which often includes nebulous chapters and an emphasis on content volume over the research or writing itself, the total time to write a thesis can be extended by years,

which can be confusing when mentorship is limited, cause distress and isolation, offer limited potential for article readership, and can result in student attrition (Anderson et al., 2020; Council of Canadian Academies, 2021; Duke & Beck, 1999; Dunleavy, 2003; Freeman, 2018). Consequently, the findings and research results of traditional dissertations often go unnoticed, even when they contain valuable information (Evans et al., 2018; Franco et al., 2014).

Dissertation change state

Digital technologies influence how graduate students engage in, and with, research and writing (Bornmann et al., 2021; Hannan & Liu, 2023; Johnson et al., 2018). For example, due to changes in the digital diffusion of research, such as open-access protocols, graduate students now have increased access to academic articles that are not bound to location, borrowing terms, or cost (Konlan et al., 2025; Lu & Lin, 2024; Morrison et al., 2022; Tri-Agency Canada, 2025). Until the late 2000s, the number of academic publications had consistently increased by approximately 3.5% for over three centuries; however, following the mass diffusion of the internet in the 1990s and mobile computing in the early 2010s, the number has nearly doubled (Bornmann et al., 2021; Johnson et al., 2018; Naughton, 2016). For example, the estimated number of articles published in 2022 was 5.14 million, which jumped nearly 47% since 2016 or 23% from 2018 (Curcic, 2023; Hanson et al., 2024). Increased publications, in turn, lead to greater access to research and diverse insights that can influence the direction of a dissertation and shorten the time required for a narrative literature review. However, the number of publications also challenges supervisors and students to stay current.

Building on open-access protocols, generative artificial intelligence (GenAI) has also changed how researchers can access insights, data, and more (Hannan & Liu, 2023). GenAI, which includes popular tools such as Google Gemini™ and OpenAI's ChatGPT™, presents students working on their dissertations with diverse opportunities, including data analysis, summarization, and translation (Ontario Council on Graduate Studies, 2024). While the use of machine learning is not new, the rapid diffusion of GenAI since the launch of ChatGPT in 2022 has led students and institutions to adjust at varying rates. As a result, lingering concerns about academic integrity, data security, and ethical use necessitate transparency and the disclosure of AI tools in research (Ontario Council on Graduate Studies, 2024).

Institutional decision-makers can reinvigorate the dissertation process and adapt to structural changes by reflecting on current student and institutional needs, and by planning for the future to ensure relevance for diverse goals, through a compilation format. The adaptation, however, does require key considerations regarding the foundational attributes associated with doctoral credentials and dissertations globally, which include the demonstration of knowledge in an area of study through rigour and appropriate methods and an ability to generate original contributions to knowledge that are suitable for peer-reviewed publication (Elmgren et al., 2016; National Academies of Sciences, Engineering, and Medicine, 2018; Nyquist & Woodford, 2000; Porter et al., 2018; Walker et al., 2012).

Compilation Model of Dissertations

Many disciplines have adopted the alternative approach of a compilation thesis to address challenges related to nebulous work and limited publication potential (Mason et al., 2025; Porter et al., 2018; Solli & Nygaard, 2022). Broadly, the model consists of two primary formats and builds from the German *cumulative dissertation*, which is first referenced in the nineteenth century before it spread globally, first through the University of Cambridge in the 1960s, followed by various U.S. higher education institutions (Anderson et al., 2020; Bao et al., 2018; Gustavii, 2012; Rigby & Jones, 2020; Solli & Nygaard, 2023). The first format is called *Scandinavian* and includes a summary chapter and research papers appearing as they are when published (Gustavii, 2012). For example, the chapters will include unique journal letterheads, table and figure numbering, logotypes, and original pagination. The second is the *sandwich* format, which includes an introduction, reformatted papers to follow institutional guidelines, and a final chapter. The collected version of the Scandinavian approach has the aesthetic

of a scientific journal, while the sandwich model is more streamlined, like a book, and affords personalization or alignment under institutional guidelines (Gustavii, 2012).

Departments and faculties, including late adopters such as Social Sciences and Humanities, that embrace the compilation models typically notice their publication rate increases (Asanov et al., 2024; Evans et al., 2018; Rigby & Jones, 2020). Globally, monograph theses in various disciplines are three to four times less likely to be adapted and published in a peer-reviewed context, receive a third of total citations compared to the compilation model, or are often published well after student graduation, which is less than helpful in a competitive job market that leans on academic capital (Asanov et al., 2024; Elmgren et al., 2016; Evans et al., 2018; National Academies of Sciences, Engineering, and Medicine, 2018; Smaldone et al., 2019). Through the publication process, students can then also develop academic capital, the opportunity to collaborate, advance their writing capacity, learn the process of academic publication, engage in peer review with feedback, and receive mentorship rather than supervision (Dunleavy, 2003; Jalongo, 2024; Kubota et al., 2021; Smaldone et al., 2019).

Additionally, students are often able to complete their dissertations within the advertised program time following the standard recommendation of attempting a yearly publication, and the opportunity to experience social connection through mentorship and collaboration may also improve retention rates (Council of Canadian Academies, 2021; Jalongo, 2024; Mason et al., 2020; Merga et al., 2020). However, regarding student attrition retention, further research is required (Chong & Johnson, 2022; Solli & Nygaard, 2023) The compilation format can be less psychologically overwhelming and isolating due to segmentation into smaller, defined tasks achieved through intervals with increased mentorship and support, while the small, consistent goals can enhance student motivation and sense of "self" in the process (Chong & Johnson, 2022; Freeman, 2018; Swank et al., 2021). However, the model can present unique challenges, including time-based factors and institutional culture.

Time-based challenges include the article submission rollercoaster and timeline anxiety during the prospective compilation dissertation process. Some students may need time to refine communication, task management, and resiliency skills as they navigate the challenging emotional states (such as a fear of rejection and critical feedback) which may necessitate a rebuilding of confidence while navigating multiple deliverables at varying timelines (Chong & Johnson, 2022; Jalongo, 2024; Mason et al., 2020; Merga et al., 2020; Paltridge & Starfield, 2023; Solli & Nygaard, 2022). Timeline anxiety will vary by experience as the newness of the process can heighten emotion and will often require emotional resilience (Chong & Johnson, 2022; Paltridge & Starfield, 2023). However, a loss of timeline control is likely, given the liminal space between submission and acceptance, which heightens awareness of the resulting implications for thesis timelines (Chong & Johnson, 2022; Paltridge & Starfield, 2023).

Institutional culture and underlying subcultures will also impact a student's dissertation experience. For example, as the format is less common, the process may meet with internal and external skepticism and further challenges associated with a lack of guidance for expectations and formatting, as well as finding a supervisor who can provide the support required for student success (Chong & Johnson, 2022; Paltridge & Starfield, 2023; Solli & Nygaard, 2023; Swank et al., 2021). Additionally, the lack of guidelines is a global issue regarding the number of required publications, publication status, format, and author contributions, and a lack of naming consistency can make it difficult to refer to earlier successful submissions to understand expectations (Mason et al., 2025). Finally, authorship and credit can be subject to power imbalances and authorship politics, which can create additional friction between students and their supervisors or their committee (Chong & Johnson, 2022; Gross et al., 2012).

Also, as compilation formats are less common, the process may meet with internal and external skepticism and face further challenges due to a lack of guidance on expectations and formatting, as well as on finding a supervisor who can provide the support that the student needs. The lack of guidelines is a global issue regarding the number of required publications, publication status, format, and author

contributions, and a lack of naming consistency can make it difficult to refer to earlier successful submissions to understand expectations (Mason et al., 2025).

Beyond the rigour associated with peer-reviewed publication processes (Drozdz & Ladomery, 2024), the compilation model must achieve the foundational attributes of doctoral credentials. As the process of publishing has many moving parts and timelines, some key considerations that graduate studies departments, supervisors, and students must consider, which require early planning and careful consideration, include the following:

- how the research questions and theme align (Freeman, 2018; Kubota et al., 2021; Mason et al., 2025);
- a cohesive, streamlined approach that includes an introduction chapter and potentially a robust discussion that congruently positions, then reflects on, the findings (Freeman, 2018; Kubota et al., 2021; Lewis et al., 2021);
- publication copyright and an author's rights for reproduction, as some journals retain the publication copyright (Freeman, 2018; Gustavii, 2012; Shirazi, 2018); and
- how a student will be the solitary or primary contributor to the research and writing of the included articles, with explicit reference to each author's contributions when required (Gustavii, 2012; Mason et al., 2025).

Objectives

Grounded in a pragmatic approach and guided by the *population, concept,* and *context* (PCC) framework (Munn et al., 2018), the purpose of this study is to present a scoping review of top-ranked Canadian university guidelines for doctoral compilation dissertations. Specifically, to outline (a) the context, (b) key structural components, and (c) the publication requirements of the compilation models.

Methodology

We used Tricco et al.'s (2018) *Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews* (PRISMA-ScR) to conduct the scoping review, ensuring that the mapped evidence is clear and transparent. The process follows five methodological steps, outlined in further detail below, including: *Information sources, search process and inclusion criteria, data charting,* and *analysis and synthesis*. The authors report low potential bias following the completion of van der Steen et al.'s (2018, 2019) taxonomy of bias determinants based on the categories of *motivations, means, conflicts of interest,* and *pressures from science and society*.

Information Sources

The information sources included the graduate websites for 33 universities listed within the *Times Higher Education* (THE) World University Rankings (2025). The rankings were selected as a filter because they provide a comprehensive overview of global universities that are open access, have an established history, and have research as one of the core evaluation pillars (Depo, 2024; Times Higher Education, 2025). The 33 universities encompass approximately 157,062 (79%) full-time and 38,596 (68%) part-time graduate students enrolled nationally (Universities Canada, 2024). As of the 2022/2023 academic year, 9,531 students were enrolled in Canadian doctoral programs, with an average time to graduation of 5.43 years (Statistics Canada, 2025).

Search Process and Inclusion Criteria

Following university selection, we conducted a series of exploratory searches within Google, which has the largest webpage index (Wakabayashi, 2020), using dynamic search strings to locate each university's public guidelines. A results limit of four results pages per university was set to align with manageable results, timelines, and to account for decreased relevance after page one (Google, n.d.;

Rethlefsen et al., 2021). Resources needed to originate from university-hosted websites, and the university websites, in turn, could serve as a secondary search tool if further resources were required. Each dynamic search string paired variations that started with the university's name, followed by the term "dissertation," "thesis," "guidelines," or "format." When the process provided no results from the specific university's graduate studies website, the terms *article-based, manuscript,* and *sandwich* were added. When possible, the source documents needed to originate from a university's graduate department; however, when absent, we collected faculty department resources.

The preliminary search was conducted on March 3, 2023, and the primary search on January 19, 2025. A final resource update search was completed on September 27, 2025, which included adding resources outlining policy or guidelines for the use of GenAI in dissertation creation (Figure 1). The search strategy included a trifurcated Boolean search targeted at the top 33 Canadian universities to remain within the word query limit. To enhance reproducibility, the search strings followed the same format with each institution's second-level domain (SLD) acting as the site variable combined with keywords associated with compilation-based dissertations and Generative AI (GenAI): *site:.ca ([SLD OR SLD OR SLD etc.]) AND ("alternative format" OR "article-based" OR "cumulative" OR "integrated" OR "manuscript" OR "sandwich" OR "Scandinavian") AND ("dissertation" OR "thesis") AND ("generative AI" OR "GenAI")*. The searches yielded 32 of the 33 institutions providing graduate- and/or faculty-specific documentation, including policies and guidelines. One university did not recognize or mention any variation of the compilation format. Twenty-five universities provided guidelines or policy documents regarding the use of GenAI.

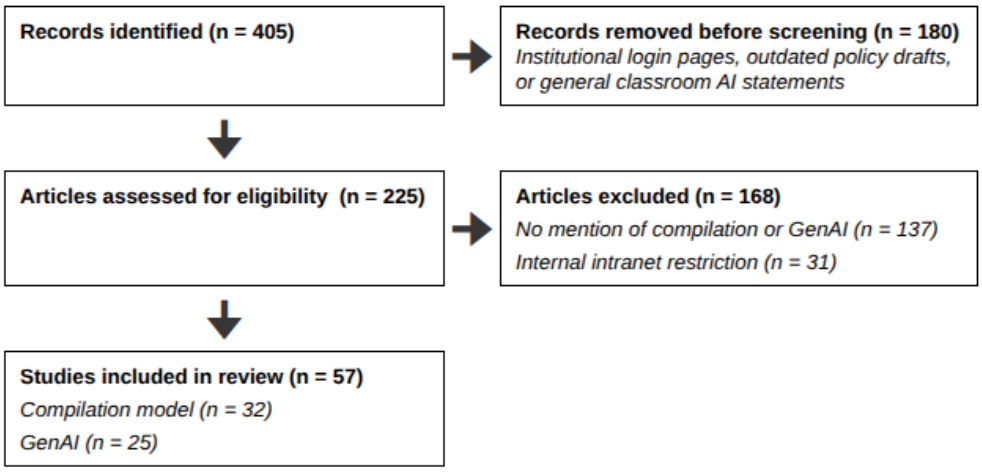

Figure 1. Search flow diagram

Data Charting

To articulate the context of each university's compilation of dissertation guidelines, we structured a spreadsheet with columns to chart data for *context, key structural components of the compilation models*, and *article or chapter publication requirements*. Additional codes included *provincial location, naming conventions,* and *resource host link*. All but one resource was English language-based. The one French-based resource was reviewed via Google Translate, with a secondary check performed by a bilingual speaker.

Analysis and Synthesis

The analysis and synthesis of the guidelines' numeric and textual data were summarized through a qualitative assimilation of findings from a mixed-methods research design to foster collective insight (Sandelowski et al., 2006, 2012, 2013). Specifically, we focused on the completed thesis structure, the total number of articles required, the paper format, the author's level of contribution, whether the articles needed to be published or were publishable, and thesis publication embargo options if using

published articles is challenging. The integrated synthesis included consolidating numerical and descriptive insights to better understand the context, format, and structure, and organizing chapters by publication, as outlined in detail below.

RESULTS

Of the 33 universities reviewed, 32 recognized compilation dissertations, and they are included in this review. The context outlines the geographic location, source of the guidelines, and commonly used names. Next, we outline the format and structure section, which reflects the nuances of the content guidelines and the concept and considerations of chapters by publication.

CONTEXT

Thirty-two of the top 33 (97%) ranked Canadian universities across nine provinces (Figure 2) recognized the compilation model as an alternative to monograph-style doctoral dissertations, with accompanying policy or guidelines for its format and submission, albeit with differing naming conventions. Graduate Studies departments accounted for 94% (n = 30) of the guidelines, with insight from the remaining two universities derived from faculty-level documentation (e.g., the *School of the Environment* and the *School of Planning*). Twenty-two universities outlined guidelines, while ten provided context via policy or mandatory standards (Appendix A). Twenty-four compilation guidelines stated that different departments or faculties could provide more refined or alternative directives. The most common name for a composition format thesis included variations with the root noun *manuscript* (n = 18 guidelines), such as *manuscript-based and manuscript-style*. Further names included *articles format* (n = 3), *integrated* (n = 3), *paper-based* (n = 2), *sandwich* (n = 2), *thesis by articles* (n = 2), *publication-based* (n = 1), and *series of papers* (n = 1; Appendix A). The institutions indicated that the final defence or examination practices were commonly shared for manuscript and compilation submissions without variation.

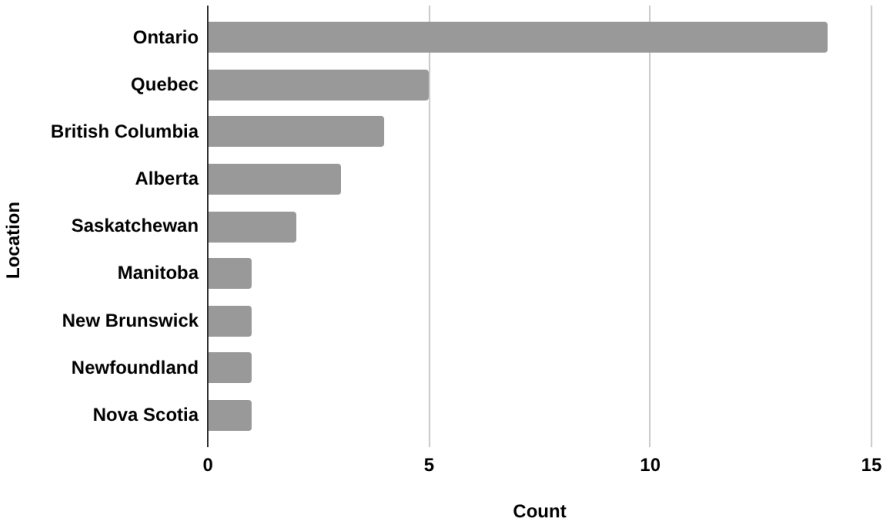

Figure 2. Guidelines per province

STRUCTURE

The commonalities and variations among the universities' compilation structures are as follows, with additional details in Appendix B. A constant for each was that the standardized front matter included the title page, abstract, acknowledgements, table of contents, and lists (e.g., tables). Formatting typically included changing the pagination and margins of published or publishable articles, renumbering tables and figures, using a specified font, and double-spacing. Most universities (n = 28 guidelines, 88%) included an outline of author contributions in the front matter.

A majority of the compilation structure guidelines followed what Gustavii (2012) defined as the *sandwich* model, which includes an introduction (n = 29, 91%), reformatted published or publishable papers to match university guidelines (n = 25, 78%), and a final chapter (discussion, conclusion, which are terms that may vary by discipline) (n = 28, 88%). However, universities differed in their detailed requirements (Table 1). Within the introduction, half of the university guidelines required a compilation dissertation to include an extended literature review.

Table 1. Dissertation content guidelines (n = 32 universities)

Chapter	Total institutions
The introduction contains an extended literature review	16 (50%)
A minimum of two articles as chapters	4 (13%)
Minimum of three articles as chapters	8 (25%)
An undefined number of articles as chapters	20 (63%)
Final references (Introduction and conclusion)	10 (31%)

Most universities did not specify the exact number of necessary publications for inclusion. However, several universities stipulated that two (n = 4) or three (n = 8) published or publishable articles were needed. Regarding the placement of references for the published works, 28 university policies or guidelines (88%) required their inclusion; however, the exact placement (e.g., at the end of the article or the end of the dissertation) was not specified.

Publication Requirements

Using individual articles is acceptable, but the required publication status for each article differs (Figure 3). From the 32 compilation policies or guidelines, 29 universities (91%) stated articles could be published, while 24 (75%) indicated that chapters should be publishable (Appendix C). However, the concepts of *published* and *publishable* were vague. In the context of publication, some guidelines required the inclusion of only peer-reviewed journal articles and conference proceedings, while others accepted non-peer-reviewed academic book chapters.

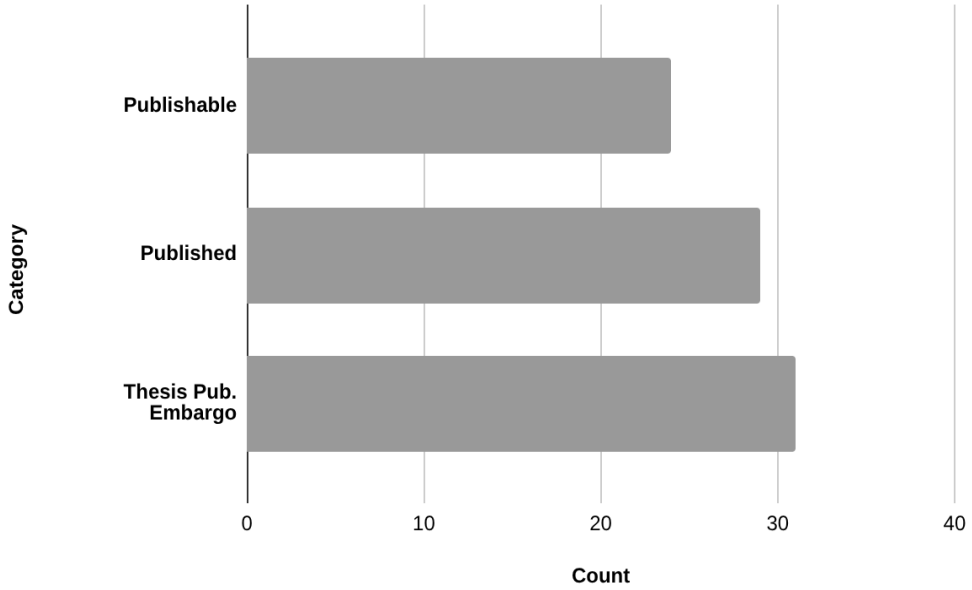

Figure 3. Authorship and publication

Regarding the concept of publishable, little support was added (e.g., total pages, citations, methodological type or rigor, etc.). However, one commonality was that the publication status of an article or chapter did not override reviewer critique, meaning that the articles in the final thesis may differ in content from the published articles if a reviewer required revisions.

As universities often publish doctoral theses, chapters based on published or publishable research, including those under peer review, can pose challenges under copyright and licensing. Each university stated that it was the author's responsibility to seek and retain documentation, such as email confirmation, that would allow them to republish any materials within their dissertation. Recognizing that challenges may arise regarding dissertation publication timeline delays associated with copyright and publication agreements, 31 universities explicitly stated that authors may seek an embargo to delay publication (Appendix C). For example, if a published article were available only through a journal for a year before authors could share it in an approved repository (e.g., at a university or on ResearchGate), the dissertation publication could be delayed by that time.

Contribution

Contribution reflects the role that additional authors, beyond the doctoral student and GenAI tools, play in the research and development of the dissertation. Thirty compilation guidelines (94%) indicated that the submitting author could be an individual or a co-author if they contributed substantially to the research and accompanying article. Two universities did not explicitly require the inclusion of contributions (Appendix C). Twenty-five universities provided guidelines for the use of GenAI in research and academic work, each requiring disclosure or transparent use practices. However, while loose guidelines for placement and context were offered, none outlined a framework or formal guidelines for the format or structure that would direct how students should be transparent and disclose their AI use.

Discussion

This scoping review outlined the guidelines and practices used by 32 top-ranked Canadian universities for doctoral dissertations, focusing on the context, structure, and publication requirements. Of the 33 potential universities, 32 provided guidelines, indicating that the compilation model is widely accepted nationally. Most universities used the sandwich format; however, there were significant variations in the naming conventions, dissertation structure, and publication expectations, congruent with Mason et al.'s (2025) findings from other nations.

The findings highlight an opportunity to augment existing guidelines with recommendations to expand and improve the integration of a compilation thesis for graduate departments, students, and faculty. Future research opportunities include expanding the search parameters to include a broader range of Canadian and international universities, outlining the benefits and challenges of compilation thesis processes, and exploring the subsequent variations influenced by discipline. The following section outlines potential opportunities for universities to reduce specific challenges associated with the compilation model thesis.

Recommendations for Compilation Dissertations

The results of this review on compilation dissertations mirror global experiences outlined by Mason et al. (2025). Based on the common challenges, we outline five recommendations to improve the precision and quality of the compilation thesis, including *author contributions, accepting rigorous literature reviews as publications, AI disclosure, limiting the implications of journal article copyright,* and *offering more clarity on what is accepted as a published resource*. Each recommendation is pragmatic and intended to increase clarity while maintaining broad parameters to accommodate various disciplines and perspectives.

Author contributions

Two guidelines for author contributions might be helpful. First, policies regarding doctoral student and supervisor authorship could benefit from reflecting on ethical co-authorship practices outlined by the *National Research Ethics Committees* and the *Vancouver Convention* (hosted by the *International Committee of Medical Journal*) (Hofmann, 2025; International Committee of Medical Journal Editors, 2026). The guidelines outline foundational ethical guidelines that current and aspiring academics should follow. Second, universities could adopt the *Contributor Role Taxonomy* (CRediT), which comprises 14 potential categories for outlining author contributions. CRediT has become a common standard used during the scientific journal publication process and is maintained by the National Information Standards Organization (NISO) under the American National Standards Institute (ANSI; Brand et al., 2015; Contributor Role Taxonomy, n.d.). Depending on institutional preference, taxonomy is viable in various locations, such as the dissertation front or back matter, or accompanying each chapter where required. The co-authorship guidelines and CRediT provide extensive guidelines for diverse disciplines and can be adapted to the field of study or situation.

Artificial intelligence use disclosure

The relationship between GenAI, graduate education, and research is complicated but increasingly interconnected (Hamaniuk et al., 2025). The hype and trust issues associated with AI further complicate the relationship (Rudolph et al., 2025; Schilke & Reimann, 2025). Regardless of the current state of diffusion and understanding, there is an increased need for transparency and disclosure (Koul, 2023; Ontario Council on Graduate Studies, 2024; Schilke & Reimann, 2025). Unfortunately, 78% of universities offered guidelines and policies for dissertation preparation, but none provided a framework for graduate students or supervisors to follow, as there are few pragmatic solutions. Weaver's (2024) *Artificial Intelligence Disclosure* (AID) Framework builds on existing practice and emerges as the first adaptable open resource providing universities with an opportunity to present clear transparency guidelines. Specifically, the principles of CRediT inspired the framework to address the diverse affordances of AI tools in research and writing (Weaver, 2024). While CRediT clarifies the "who did what" question in a research team, AID clarifies "what did AI do." Weaver (2024) proposes 14 potential headings (e.g., *conceptualization, methodology, data analysis,* and *writing (reviewing & editing)*), provides definitions for clarity, and offers examples for each, which emerging researchers can use as they navigate the complex relationship between AI, education, and research.

Literature review publication

The standard requirement for most universities is to include an introductory chapter with a broad review of the thesis subject matter. One alternative to this requirement might be to introduce a chapter with a published or publishable scoping or systematic review. The recommendation builds on the existing focus-down approach to dissertation writing, which emphasizes an extensive literature review but requires a definitive goal, mentorship, academic rigour, and a publishable article. Rigorous reviews, such as those outlined by the *Joanna Briggs Institute* (JBI) or *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) (e.g., Page et al., 2021; Tricco et al., 2018), are becoming increasingly accepted aspects of modern doctoral studies (e.g., Cerezo-Pizarro et al., 2024; Puljak & Sapunar, 2017). Additionally, conducting a rigorous review provides students and supervisors with an updated understanding of a specific subject amid the consistently increasing rates of scientific publication (Curcic, 2023; Hanson et al., 2024; Pautasso, 2013; Robinson et al., 2021; Snyder, 2019). A rigorous review process can serve as a map to navigate the existing research, helping identify research gaps or flaws in a proposed research objective and potentially saving aspiring researchers time and money.

Copyright

While many journals, conferences, and books apply strict copyright protocols to published articles, the open-access movement provides an alternative path for publication. Specifically, authors can seek publishers that apply Creative Commons (CC) copyright licenses, allowing them to reuse their work with proper attribution (Creative Commons, 2019). CC licenses are commonly used for open-access

journals and offer two potential benefits. First, open publications often have a larger readership and greater potential for citation (Brainard, 2024). Second, authors face fewer barriers to obtaining the necessary approvals for republication or modification, which can be unnecessary hurdles to completing or submitting a dissertation. Recognizing that many higher-tier journals have greater academic capital and do not follow this practice, or that their open publishing costs are prohibitive, the decision on publication location should be an early discussion among students, supervisors, and graduate departments.

Acceptable articles

Given the diverse guidelines regarding the publication expectations and definitions for articles in a compilation thesis, universities may find it beneficial to follow a similar approach to how the institution defines publication and information communication for academic promotion. As a doctoral degree is commonly associated with the transition to a professorship (Council of Canadian Academies, 2021), providing doctoral thesis guidelines consistent with the expectations for professors requires limited effort for graduate departments while supporting an authentic learning experience. What is considered acceptable will likely vary based on institution and faculty. For example, while many institutions require research publications for academic promotion, the definition and impact of research vary across countries, institutions, and departments or faculties (Lim et al., 2025; Netter et al., 2018; Schimanski & Alperin, 2018).

With publication status in mind, key considerations for graduate or faculty departments include how similar the practices should be. For example, will the same parameters be applied to doctoral students if promotion committees consider metrics such as journal reputation or bibliometric statistics for faculty academic promotion? Additionally, some faculties may deem an edited (but not peer-reviewed) academic book chapter or conference proceeding acceptable as a form of information dissemination in an academic CV. Similarly, some universities will require peer-reviewed research as part of research communication but place greater value on community engagement or alt metrics than others (Schimanski & Alperin, 2018).

The concept of *publishable* should also be addressed to limit confusion at all levels of dissertation creation and finalization. As different disciplines have varying research and publication requirements (e.g., visual arts and computer engineering), graduate departments can coordinate with other departments to create specialized dissertation guidelines or recommend that they do so independently if they wish to offer the opportunity. The process could be supported by conducting a rapid review of the journal requirements of the selected discipline to determine standardized guidelines. For example, articles focusing on the physical sciences are often 2,500 words, those on the social sciences are 4,300 words, and those on educational studies are 5,000-6,000 words (Fairbairn et al., 2008; Nature, n.d.). However, conventional section recommendations – background, research questions, research method, measures, data analysis, and results (Sword, 2012) – can serve as foundational guidance for what to include in a publishable article.

Limitations & Future Research

Four primary limitations of the scoping review and directions for future research include:

1. **Scope**. While high-ranking universities provide a solid sample, a review of all Canadian universities with doctoral programs could offer a broader perspective.
2. **Public digital documents**. Using publicly accessible documents can limit insight into nuanced and informal institutional culture. Future research could involve individuals from individual institutions to help provide additional perspectives.
3. **Translation**. The translation of French-based text has the potential for misinterpretation. In line with the scope and public digital documents, future research could include French-speaking university representatives to ensure accuracy.

4. **Participant perspectives**. The study lacks insight into the personal experiences of individuals involved in the dissertation compilation process, who could offer unique perspectives beyond the guidelines. Qualitative studies recruiting doctoral students, supervisors, and graduate administrators can provide greater context into the lived experiences, benefits, and challenges.

Conclusion

This scoping review provided an overview of existing practices for compiling a dissertation across 32 top Canadian universities, followed by five recommendations to improve clarity and precision. Compilation model dissertations offer Canadian universities opportunities to improve the student experience through authentic skill development, an emphasis on mentorship rather than supervision, a potential reduction in time commitment, and increased publication potential. The latter is important not only for students' academic capital but also for institutional reputation and national innovation goals. Further research and the development of more formalized guidelines can help guide student development and enhance university research output.

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APPENDIX A. OVERSIGHT

ID	Grad Studies/Faculty	Compilation name	Policy/guideline
EA28D570	Grad Studies	Integrated	Policy
177D5FCF	Grad Studies	Manuscript	Guideline
77C07467	Faculty	Manuscript	Guideline
60D57C5F	Grad Studies	Manuscript	Guideline
7A4B8292	Faculty	Manuscript	Guideline
B9FC484B	Grad Studies	Manuscript	Guideline
0F52A70E	Grad Studies	Sandwich	Guideline
CBBD8784	Grad Studies	Manuscript	Guideline
8A07B561	Grad Studies	Manuscript	Guideline
ACA2AEE9	Grad Studies	Manuscript	Policy
201DCAB8	Grad Studies	Paper-based	Guideline
73E97165	Grad Studies	Manuscript	Guideline
39919851	Grad Studies	Articles Format	Guideline
E85BD396	Grad Studies	Articles Format	Guideline

ID	Grad Studies/Faculty	Compilation name	Policy/guideline
86E4F27D	Grad Studies	Paper-Based	Guideline
A5744BB4	Grad Studies	Manuscript	Guideline
393C21C3	Grad Studies	Manuscript	Policy
4FD48B3B	Grad Studies	Sandwich	Guideline
5FC8EDA9	Grad Studies	Thesis by articles	Guideline
D1205559	Grad Studies	Thesis by articles	Policy
03F295A2	Grad Studies	Manuscript	Policy
E299A2AC	Grad Studies	Manuscript	Policy
8AEF3ADE	Grad Studies	Publication-based	Guideline
A3848A29	Faculty	Manuscript	Guideline
58F64437	Faculty	Integrated	Guideline
D1F6170F	Grad Studies	Manuscript	Policy
280DA06C	Grad Studies	Manuscript	Guideline
69BA4178	Grad Studies	Articles format	Policy
7FA8E962	Grad Studies	Series of papers	Guideline
8AB69714	Grad Studies	Integrated	Policy
5D6C295D	Grad Studies	Manuscript	Guideline
1C32C23B	Grad Studies	Manuscript	Policy

APPENDIX B. STRUCTURE AND FORMAT

ID	Intro	Intro Lit. Review	2 papers	3 papers	Undefined total papers	Final chapter	Ref/ each chapter	Cumulative references	Dept. variation	Reformat papers
EA28D570	1	1	0	0	1	1	1	0	0	1
177D5FCF	1	1	0	0	1	1	0	1	1	1
77C07467	0	0	0	0	1	0	0	0	1	0
60D57C5F	1	0	0	0	1	1	0	0	1	0
7A4B8292	1	0	1	0	0	1	1	0	1	1
B9FC484B	1	1	1	0	0	1	1	0	1	1
0F52A70E	1	1	0	1	0	1	1	0	1	1
CBBD8784	1	1	0	0	1	1	1	0	1	1
8A07B561	1	0	0	0	1	1	0	0	0	1
ACA2AEE9	1	0	1	0	0	1	0	1	0	1
201DCAB8	1	0	0	0	1	1	0	0	0	1
73E97165	1	0	0	1	0	1	0	1	1	1
39919851	1	1	0	0	1	0	1	1	1	1

ID	Intro	Intro Lit. Review	2 papers	3 papers	Undefined total papers	Final chapter	Ref/ each chapter	Cumulative references	Dept. variation	Reformat papers
E85BD396	1	0	0	0	1	1	0	0	0	1
86E4F27D	1	1	0	1	0	1	1	0	1	0
A5744BB4	1	1	0	0	1	1	0	1	1	1
393C21C3	1	0	0	0	1	1	1	1	1	1
4FD48B3B	1	0	0	0	1	1	0	0	1	1
5FC8EDA9	1	1	1	0	0	1	1	0	1	1
D1205559	1	0	0	1	0	1	0	0	1	0
03F295A2	1	1	0	1	0	1	1	1	0	1
E299A2AC	1	1	0	0	1	1	1	1	1	1
8AEF3ADE	0	1	0	1	0	0	1	0	1	1
A3848A29	1	0	0	0	1	1	0	0	1	1
58F64437	1	1	0	1	0	1	0	1	1	0
D1F6170F	1	0	0	0	1	1	1	1	0	1
280DA06C	1	1	0	0	1	1	1	0	1	1
69BA4178	1	1	0	0	1	1	1	0	1	1
7FA8E962	1	1	0	0	1	1	0	0	1	1
8AB69714	0	0	0	0	1	1	0	0	1	0
5D6C295D	1	0	0	1	0	1	0	0	0	0
1C32C23B	1	0	0	0	1	1	0	0	1	1

APPENDIX C. AUTHORSHIP AND PUBLICATION

ID	Solo author	Co-authored	List contribution	Published	Publishable	Thesis pub. embargo
EA28D570	1	1	1	1	1	0
177D5FCF	1	1	1	1	1	1
77C07467	1	1	0	1	0	1
60D57C5F	1	1	1	1	1	1
7A4B8292	1	1	1	1	0	1
B9FC484B	1	1	1	1	1	1
0F52A70E	1	1	1	1	1	1
CBBD8784	1	1	1	1	1	1
8A07B561	0	0	0	1	0	1
ACA2AEE9	1	1	1	1	1	1
201DCAB8	0	0	0	0	0	1

ID	Solo author	Co-authored	List contribution	Published	Publishable	Thesis pub. embargo
73E97165	1	1	1	1	1	1
39919851	1	1	1	0	0	1
E85BD396	1	1	1	1	1	1
86E4F27D	1	1	1	1	1	1
A5744BB4	1	1	1	1	1	1
393C21C3	1	1	1	1	0	1
4FD48B3B	1	1	1	1	1	1
5FC8EDA9	1	1	1	1	1	1
D1205559	1	1	1	1	1	1
03F295A2	1	1	1	1	1	1
E299A2AC	1	1	1	1	1	1
8AEF3ADE	1	1	1	1	1	1
A3848A29	1	1	0	1	1	1
58F64437	1	1	1	1	1	1
D1F6170F	1	1	1	1	1	1
280DA06C	1	1	1	1	1	1
69BA4178	1	1	1	1	1	1
7FA8E962	1	1	1	1	0	1
8AB69714	1	1	1	1	1	1
5D6C295D	1	1	1	1	1	1
1C32C23B	1	1	1	0	0	1

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Dr. Joe Stokes is the University Registrar and AVP International at Ontario Tech University, an award-winning adjunct professor in the Faculty of Education, and an associate faculty member at Western University and Royal Roads University. Joe's portfolio includes the leadership of strategic enrolment management, including domestic and international admissions & recruitment, student awards, financial aid, records, registration, scheduling, university-wide student communication, and international. He is the past Chair of the Ontario Universities' Council on Admission and the Ontario University Registrars' Association. His recent publications focus on international student mobility and strategic enrolment management in the post-pandemic and globally disrupted era. Additionally, he has recently led groups that have secured over $1.4 million in research and project funding.

Dr. Robin Kay is a full professor at Ontario Tech University in the Frazer Faculty of Education in Oshawa, Canada. He was the Dean of the Faculty from 2019 to 2024. With over 30 years of experience teaching computer science, mathematics, and educational technology at the high school, college, and university levels, Dr. Kay brings a rich depth of expertise to his research, teaching, and leadership. He has published over 200 scholarly articles, chapters, and conference papers, focusing on pedagogy, education, and technology. His current research spans topics such as artificial intelligence in education, e-learning tools, online and blended learning, video podcasts, and the emotional impact of technology on learning. Dr. Kay earned both his M.A. in Computer Applications in Education and his PhD in Cognitive Science (with a focus on Educational Psychology) from the University of Toronto.