Common Challenges Postgraduate Students and Early-Career Academics face when Engaging with the Scholarly Literature

Ben K. Daniel

Higher Education Development Centre, University of Otago, Dunedin 9016, New Zealand
ben.daniel@otago.ac.nz

Abstract: This article presents nine common challenges postgraduate students and early career academics face when engaging with academic literature. Data was collected from a sample of sixty-two postgraduate and early career academics who participated in a series of workshops on research methodology at a research-intensive university in New Zealand. Participants were invited to answer open-ended questions online about the purpose of undertaking a literature review and the challenges associated with the process. Findings revealed that participants held fragmented views about the purpose of engaging with the literature review, which contributed to the difficulties they faced in effectively undertaking the literature review. The challenges participants reported when undertaking literature reviews: difficulties in choosing a practical approach to reviewing the literature, inability to design an efficient search strategy to locate materials for review, problems locating relevant literature, an inability to determine the appropriate scope of a review, issues in choosing relevant materials and managing the growing volume of published work, problems in effectively synthesising and critiquing the literature, inability to organise and write clear reports, and lack of indicators for assessing the quality of written literature reports. The research presents a wide range of strategies students, and early career academics can use to mitigate these challenges. Teachers of research methods can also use these strategies to support students develop the necessary skills and knowledge to tackle the challenges of engaging with the literature.

Keywords: challenges of literature review, systematic and tripartite, postgraduate education

1.   Introduction and related background literature

Engaging effectively with academic literature is integral to scholarly and scientific work. Reviewing the literature enables researchers to develop depth and breadth of knowledge in a particular subject, highlighting trends in a specific area of inquiry, identifying existing academic debates and framing essential research questions for further investigation. A literature review can be used at the beginning of the study to explain what is known about a particular topic (Mertens,2019) and build a case for undertaking a particular research project. The outcome of a literature review can help inform the design of a research project by determining the structure, scope and process for executing the research (e.g. establishing an appropriate sample size or identifying data collection methods).

A literature review can also involve critical analysis of an academic subject to develop breadth and depth of knowledge of published work(Daniel and Harland, 2018; Xiao and Watson, 2019). This particular purpose of undertaking a literature review helps the researcher avoid the risk of duplicating what is already known or focusing on trivial problems that do not contribute to new knowledge(Bradbury-Jones et al., 2019; Terry and Terry, 2013).

Furthermore, evaluating previous research assists a researcher in setting the problem being researched into a broader context of what is already known and justifying the need for undertaking the study and the extent to which the new research makes a valuable contribution to knowledge (Saunders and Rojon, 2011). As Templier and Paré (2015) stated, synthesising existing research is key to identifying new research questions and advancing knowledge in a particular field. In postgraduate education, postgraduate students are required to read widely and in-depth about their topic; engaging with the literature helps them scrutinise large amounts of information on a given topic to enhance their understanding of previous research in their chosen research (Smallbone and Quinton, 2011). Moreover, effectively undertaking a literature review is crucial in framing a sound research problem and developing a conceptual and theoretical framework to guide a study.

Despite the well-established importance of undertaking a literature review and the skills needed to perform it well in postgraduate education, our experience in teaching research methods suggests that several students and early-career academics continue to face challenges when it comes to reading and critically engaging with published work (Daniel and Harland, 2018; O'Neill, Sarah and Lamb, 2018). Inexperienced researchers include early career academics (ECA). ECA are those with five years or less of teaching and research following PhD

completion, with career progression from post-doctoral appointment to tenure, promotion and beyond (Bosanquet, Mailey, Matthews and Lodge, 2017; Rienties and Hosein, 2020). While experienced researchers can draw on prior experience and their networks to locate relevant literature, inexperienced researchers often lack access to concrete search terms and the methodologies required to perform literature reviews effectively (Warburton and Macauley, 2014).

In particular, the challenge of developing an effective search strategy to easily access relevant articles to review is widespread among postgraduate students. These challenges can also be seen in the poor quality of literature reviews in journal articles submitted for publication (Maier, 2013). Over time, these challenges have persisted as the task of conducting a literature review has become increasingly complex due to the growing number of publications and journals (Snyder, 2019).

In the context of information systems, inexperienced researchers face difficulties in developing effective strategies for reviewing literature due to the rapidly increasing number of potentially relevant publications (Vom Brocke, Simons, Riemer, Niehaves, Plattfaut and Cleven, 2015). Beginning educational researchers face similar and other challenges in conducting a literature review, including linguistic, methodological, conceptual, and ontological (Chen, Wang and Lee, 2016). Health science professionals, researchers, and students struggle with reviewing the literature and choosing a suitable way to structure and present review reports (Noble and Smith, 2018). Further, in business management, Fisch and Block (2018) noted that researchers often lack the knowledge to better structure the review process and present review outcomes.

It is apparent that the challenges postgraduate students and early academic career academics face when engaging with the academic literature are linked to poor pedagogical practices and a lack of tools available to teachers of research methods, postgraduate supervisors and students to address these challenges (Badenhorst, 2019; Daniel, Kumar and Omar, 2018). Some postgraduate supervisors assume that their students can independently carry out a literature review without difficulties. However, this is not necessarily true for all students (Nylander and Hjort, 2020). Equally, some novice postgraduate supervisors lack the skills and knowledge to guide their students in performing effective literature reviews (Daniel, 2018). While there are several sets of rubrics for teachers to assess, the quality of published work may be domain-specific (Anderson and Jayaratne, 2015). Generic indicators that are not domain-specific or dependent on a particular methodology are still needed to guide postgraduate students and early career academics.

2. The context of the study and the researcher's background

The present article is part of a larger research-informed pedagogical initiative to improve the quality of research methods in higher education. The programme is offered to postgraduate students and early-career academics as workshops and one-to-one tutorials at a research-intensive public university in New Zealand. Drawing from over a decade of teaching research methods, the current research examined postgraduate students and early-career academics, understanding the purpose of undertaking a literature review and exploring common challenges faced with academic literature. Postgraduate students find it challenging to effectively engage with academic literature review, organise and present literature reports in a credible and critical manner, and assess the quality of their written literature reports. To address these challenges, the article proposed a systematic and tripartite model to help students and early career academics effectively perform literature reviews.

2.1 Research Questions (RQs)

- **QR1.** How do postgraduate students and early career academics understand the purpose of undertaking an academic literature review?
- **QR2.** What are the key challenges postgraduate students and early-career academics face when engaging with academic literature?

2.2 Research design and methods

The research employed an exploratory case study to collect qualitative self-reported data on participants' perceptions of issues they encountered when engaging in an academic literature review. Generally, a case design general facilitates rich, contextual, and unstructured data (Mason, 2002; Mason, Augustyn and Seakhoa-King, 2010). A qualitative exploratory case design was deemed appropriate since it provides a holistic view of a research problem. A convenient sampling approach was used, sending open-ended questions to participants (n=62) who registered to participate in several research methods workshops in a research-intensive public

university in New Zealand. The questions explored participants' understanding of the purpose of a literature review and the critical challenges they might have faced when reviewing the literature.

2.3 Data analysis

Responses to the open-ended questions were compiled and analysed using NVivo software. The analysis involved reading and re-reading participants' responses to each question and getting familiar with the data (Braun and Clarke, 2006). The goal was to identify and develop preliminary codes, discover meaningful patterns across the data and codes, combining or merging similar codes, develop a meaning framework, interpret the data, and cross-reference comments (Richardson, Grose, Nelmes, Parra and Linares, 2016). The initial codes were developed from responses to the open-ended questions. There were also closed-ended questions intended to gather demographic information about participants and their programmes of study. Data obtained from the closed-ended questions were quantitatively analysed and presented as frequencies and proportions.

2.4 Participants

The majority of participants (83%) identified as postgraduate students (doctoral and master's students), and a small proportion (25%) was staff, also generally referred to as early career academics (ECA). Typically, ECA individuals in the institution where this research was conducted have four or fewer years of experience in academic teaching or research or those transitioning from their PhD to an academic career. In addition, they include staff who were enrolled on PhD studies (see Table 1).

Table 1: Participants' demographics

Participants characteristics	Frequency (%)
Participants degree	
Postgraduate student	47(83)
Staff member	10(18)
A staff member and postgraduate student	4(7)
Undergraduate student	1(2)
Research stage	
I am planning my research	21(34)
I am doing my research	19(30)
I am writing up my thesis	16(25)
Waiting graduation	6(11)
Academic division	
Humanities	16(30)
Sciences	13(24)
Health Sciences	10(19)
Interdisciplinary	7(13)
Other	7(13)
Commerce	2(4)
Engineering	2(4)

While the postgraduate programmes at the University where this research was undertaken are predominantly research-focused (Masters by Research and PhD), some participants were enrolled on a coursework Masters, which requires the students to undertake a small research project.

3. Findings

Although there are several purposes for undertaking a literature review, the purpose of the review determines the approach, strategies and direction of the review (Terry and Terry, 2013). The inability to determine the purpose of a literature review and the appropriate approach needed can likely contribute to the challenges in undertaking an effective literature review. Participants revealed and described various purposes for undertaking an academic literature review—key themes identified are summarised and presented in Table 2. Participants regarded literature review as a requirement to understand previous research; some said engaging with the literature provides the background for framing a worthwhile "research gap". Others indicated that reviewing the literature can help researchers identify limitations in existing research, demonstrate research contribution; learn about methods and research design relevant to their research; inform the development of a theoretical framework; avoid duplicating research outcomes, and advance self-development in a field.

The research sought to understand how participants would approach reviewing the literature. Participants mentioned approaches to engaging with the literature. One participant indicated, *"literature review is a systematic process of identifying, retrieving and synthesising studies of certain topic or issue."* Some regarded a literature review as a systematic process of locating and retrieving information (43%). However, others (39%) argue that the task of undertaking a literature review is much more than learning research methods but rather a scholarly activity where postgraduate education students develop knowledge and skills to examine published work critically. More specifically, some participants stated that a literature review goes much beyond examining and summarising published work but engaging in a critical analysis of scholarly work, identifying a worthwhile research gap, and undertaking new research that can advance knowledge (12%).

For others (7%), gap analysis or identifying a research gap is the primary intent of undertaking a literature review. For instance, a participant said: *"to me, it is a part of the knowledge-making activity, which uncovers a gap in the existing body of knowledge and explains how one piece builds on another. Therefore, helpful literature review analyses and synthesises ideas in the literature, providing a firm foundation to one's research problem and method."*

Table 2: The purposes of undertaking a literature review

Purpose—Theme	Example(s) of quotation(s)
Understand previous research	*"Literature review is intended to provide a summary of what has been written on a topic and explain what it means for your research question. It should try to present diverse perspectives on a topic rather than serve your thesis….That said, each part of the review should be doing work for your research questions and thesis, with unnecessary diversions left out."*
Frame a "research gap."	*"The purpose of the academic literature review is to identify gaps in methods used to solve problems and come up with better ideas on how to solve such problems."*
Demonstrate research contribution	*"To situate and discuss research (question, methodology and finding) in a specific body of knowledge."*
Learn about methods and design	*"The literature helps to guide the entire direction and design of your research and to contextualise your findings, therefore, its relevance to all areas of your study most particularly question development and project design through to discussing your findings and future direction of your research."*
Inform a theoretical framework	*"To establish the intellectual context of your research, clarifying what kinds of definitions, assumptions, and theories will be at play so that readers can understand what you mean in the rest of your work."*
Avoid duplication of research	*"To have an understanding of the way forward in your research. Also, to know the extent people have gone in your area of research to know the knowledge gap to fill that it up."*
Self-development	*"To develop an understanding of your research area - what are the major themes, trends, problems, issues, recommendations, solutions…. "The purpose of the literature review is to equip you with up to date knowledge and enhance your understanding in your area of research, and ensure you are competent and up to date within your area of research."*

To some extent, the differences in understanding the purposes of undertaking a literature review reflect the diversity of participants' backgrounds and interests and the different stages in their research journey. Postgraduate students at the final stages of their postgraduate journey pointed out various stages in their research where support for literature review would be needed, as shown in Table 3. In particular, several participants (82%) reported they sought support for undertaking the literature at the research design stage, and others saw the need to engage with the literature when seeking support to frame a research problem (75%). Moreover, three-thirds indicated that support for a literature review would be needed at the theory development stage (67%).

Table 3: Stages in the research process where the support for literature review is critical

Stage of research	Frequency (%)
Research design	50(82)
Problem development(gap)	46(75)
Theory development	41(67)
Discussion	34(56)
Data analysis	28(46)
Conclusion	20(33)

Participants who mentioned they needed more support with the literature review during the problem development stage said:

> *"I find it hard to develop a clear research question and concisely situate it in the existing literature (both providing the background/ context to the research question and discussing how the findings from a study respond to the literature)."*

Others appealed for more specific guidance in framing a problem, prospectively arguing for a need to use the outcome of the literature review to identify where a research project can contribute new knowledge.

> *"We should know what problems are already addressed and how to identify a gap. We should be aware of various research designs and choose one that suits the issue. In the discussion of results, we could compare our results to other works."*

Those who said they wanted support with the literature review of the project's design: "I was not sure about the design or methodology to choose, and in the discussion, I had to search again to compare my results with other studies." Others also elaborated that learning from the literature would help them articulate a study's direction, direction, and design. As one participant said:

> *"The literature helps to guide the entire direction and design of your research and to contextualise your findings. Therefore, it is relevant to all areas of your study, particularly question development and project design, and discussing your results and future research direction."*

Participants acknowledged the literature review's various roles in the process and quality of research outcomes. However, they reported several challenges when engaging with the academic literature.

4. Challenges of engaging with the academic literature

The research identified several challenges participants face when engaging with the literature (figure 1); these include difficulties in identifying approaches and techniques for engaging with the literature; inability to develop an efficient search strategy; not able to locate relevant and valuable literature in a timely manner; difficulties in determining the scope of a review; problems managing the growing volume of studies; problems conducting practical synthesis and critique of the literature; challenges in organising the literature in a meaningful manner; inability to write a clear and helpful report and determining better ways of assessing the quality of literature resources and reports. Each one of the challenges is elaborated on in detail in the proceeding section.
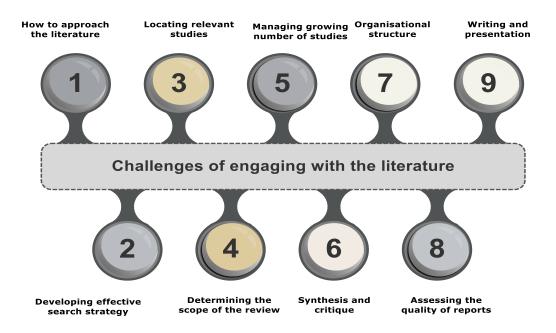

Figure 1: Nine challenges of engaging with the academic literature

4.1 Challenge 1: Identifying effective strategies and techniques for engaging with the literature

Several participants reported the lack of practical strategies and techniques to help them effectively navigate the complexity of engaging with the academic literature and integrate various sources of information coherently and consistently:

> *"There are no useful tools and techniques to organise the literature review process and how to integrate various sources of the literature into one's work". Others mentioned the need to learn strategies that help them read the literature and write reports. For example, one participant said, "I would like to learn how to read literature efficiently and fast (I am a slow reader)."*

Although these are genuine concerns, some students are unaware of the growing number of strategies and approaches available to assist in navigating scholarly literature's complexity.

4.2 Challenge 2: Developing an efficient search strategy

Formulating an efficient search strategy is essential in the literature review process. A search strategy is a well-thought-out plan for searching for relevant information (Cooper et al., 2018). The researcher can clearly define the review question and develop inclusion or exclusion criteria (Aromataris and Riitano, 2014). Also, a well-defined search strategy entails using information sources in a consistently structured manner that will save you time. Some postgraduate students often find it challenging to develop a comprehensive search strategy, systematically examine the literature, and extract valuable insights from the reviews. Some participants reported difficulties framing an efficient search strategy that covers all the possible and relevant studies in the literature. As one participant reported: one participant mentioned: *"Finding correct searching words for your area" and getting lost in the mountain of literature with difficulty in identifying what to include and exclude."*

Others said it takes a long time to search and locate relevant studies:

> *"it takes time…..searching for articles, conducting the review systematically." Some participants mentioned that navigating a body of literature and extracting the essential insights is challenging, yet others struggled to search databases systematically. "It is difficult to be consistent or systematic in how to search and organise the literature review."*

4.3 Challenge 3: Efficiently locating relevant and valuable literature

Participants reported difficulties searching through a database to locate relevant studies for review. Some said they often get overwhelmed with the amount of information they go through or struggle to find an adequate number of studies for a review:

> *"finding too much information on the subject or not finding enough studies already published. How to find out what is most important and relevant."*

Others mentioned that undertaking literature is complicated, especially when going through volumes of published materials. With limited guidance, they tend to spend a significant amount of time. In the process, time is lost, and vital studies are missed.

> *"Things get too complicated when the literature review requires engaging with several works from different fields, but somehow I might miss some good stuff when I read too quickly."*

In addition, some participants said locating resources for review is difficult to identify relevant from irrelevant studies. Accessing the correct database and the skills needed to query and retrieve studies are also issues.

> *"The enormous amount of literature out there, especially. Sifting through it to sort out what is relevant and what is not, then sort out what is 'academic' and not. It is also challenging to determine if a paper is 'academic' - what I mean is, is it something I can quote? Much of the literature I use does not appear in google scholar searches. How is 'much' literature adequate? How many sources constitute a thorough review?"*

4.4 Challenge 4: Determining the scope of the review

The purpose of determining the scope of the review is to provide an initial indication of the extant literature (Paré and Kitsiou, 2017). Scoping needs to determine a review's extent, range, and nature, often requiring considerable conceptual knowledge that some novice researchers might not possess. Choosing the relevant studies to be included is one thing; delineating the scope is quite another. While a scoping review is a research methodology in its own right, there are emerging methods to help researchers determine a value scope (Pham

et al., 2014). However, some participants in the present study said determining the general scope of any literature review is not an uneasy task. One participant pointed out that "deciding on the right scope is difficult - knowing when you are reading too widely or too narrowly, time management. Knowing an effective way to engage with the literature."

Further, due to the increasing volume of the literature, some participants struggled to determine what would constitute a relevant and adequate literature review:

"When do I know I have enough? If it seems like there has been little written on a topic, how do I know I have done enough searching to be able to say so? The best methods for citing and explaining unusual kinds of literature, such as organisational reports, promotional materials, political speeches, or out-of-publication essays that are only available in pieces cited by others."

4.5 Challenge 5: Managing the growing volume of studies

Most literature review tasks involve searching, retrieving, and screening a large volume of studies creating management issues. Participants said that managing a large amount of information and reading the literature requires some students' particular skills and knowledge.

"Managing and organising a large amount of literature for easy retrieval and critiquing weakness and strengths of the research are problems I face."

"…. I struggle to manage the paper trail—I would like tips on searching multiple databases simultaneously (if possible)."

There were also issues associated with linking and integrating divergent views from the literature and identifying outstanding future research areas or questions.

"Sometimes, I find it hard to link two divergent views. I also face difficulty in identifying knowledge gaps, and the biggest problem is not knowing when to stop with the review."

4.6 Challenge 6: Conducting useful synthesis and critique of the literature

One of the most challenging problems of engaging with the literature is defining patterns of thinking in current research and critically evaluating its strengths and weaknesses. Participants said synthesis and critiques are the two most complex tasks when engaging with the literature: *"it is difficult to critique or evaluate the ideas."* Coherently integrating divergent ideas and excluding irrelevant information are some of the issues some participants struggled with.

"Sometimes, I find it hard to understand how to link two divergent views in the literature."

Whenever I engage with the literature, I am certain of getting lost in the mountain of literature with difficulty identifying what to include and exclude…" I find it hard to critique weakness and strengths of the research and build an argument".

Other students reported issues concerned with critiquing studies and building an argument: *"critiquing weakness and strengths of the research and building the argument."*

4.7 Challenge 7: Organising the literature in a meaningful manner

Participants mentioned that organising the literature into a meaningful form poses a significant problem for them as one participant noted: "*being consistent or systematic in how I organise the literature review is the biggest challenge".* While there is no single way of organising the literature, the literature can be organised along with a logical, sequential or chronological structure. It might also follow well-established reporting domain protocols, standardised in the natural sciences but not in the humanities and the business domains, especially in interdisciplinary work with different definitions, assumptions, and theories.

4.8 Challenge 8: Writing a clear and helpful report

Writing a literature review report varies according to the review's objectives and the type of review undertaken. It may consist of merely a summary of key themes or a combination of summaries and synthesis. Participants reported challenges in writing literature review reports; of particular concern is the issue of presenting a review report in a coherent and integrated manner: *"problems in writing in terms of coherence and linking paragraphs and doing critical analysis".*

While writing my literature review (the area replete with competing theories and various notations), I faced the following: What to include/exclude. What is the implications of an article, etc., for my research problem? How to write a responsible critical appraisal.

4.9 Challenge 9: Assessing the quality of literature resources and reports

While assessing the quality of studies used in a review is essential, the appraisal of the written report and the rigour of the methods used is equally important. Writing useful literature reports requires a clear, logical, sequential flow of thoughts, with key themes and topics presented convincingly and meaningfully. Reports also need to trigger a further engaging debate in the field. Participants reported difficulty in evaluating the quality of literature reports.

"I struggle with evaluating what I have written and if I have successfully reviewed enough literature and presented enough to the reader without going overboard."

"I want to improve my confidence in organising and structuring literature reviews. How to deal with unusual, out-of-publication, or professional sources, especially in the weight I give them, how I frame them, and how to deal with their citations."

Though there is a need to determine the quality of studies selected for review, the methodology's rigour and the report's quality is equally important. For example, systematic reviews and meta-analyses might emphasise assessment rubrics that are statistically stable and demonstrate the review process' reproducibility and steps. These particular review methodologies require a comprehensive and auditable description of the processes and methods used to review.

5. General strategies for addressing the challenges of engaging with the literature

The challenges identified in this research are further conceptualised to provide concrete strategies and a framework for addressing the challenges (see Table 4). The strategies are derived from conducting systematic reviews and teaching research methodology.

Table 4: Strategies for addressing the critical challenges of engaging with the literature

Key challenge	Conceptualisation	Strategies
1. Identifying approaches and techniques for engaging with the literature	A systematic literature review includes narrative review, systematic, scoping, semi-systematic, critical, and integrative.	Approaches: Cochrane, Prisma, Systematic and tripartite. Tools: Zotero, XCalibar, Word, Text Mining, Scopus, Google Scholar, ResearchGate, NVivo and Mendeley.
2. Developing an efficient search strategy	A search strategy involves formulating the research goals for a review and developing inclusion and exclusion criteria.	Developing search skills and understanding Boolean logic, AND OR, NOT, choosing relevant keywords, phrase searching, proximity operators, truncation, wildcards, and fields.
3. Efficiently locate relevant and helpful literature.	An appropriate database for retrieving resources for review and articles published in journals with a high impact factor.	Available databases include Google Scholar, JSTOR, EBSCO, Project Muse, Medline EconLit, PubMed, CINAHL, Cochrane Library, ERIC, PsycINFO, MEDLINE, Web of Science, IEEE library, ACM, etc. To determine the quality of materials for review, located journals with high impact factors—Social Sciences Citation Index (e.g. Academy of Management Annals, Review of Financial Studies, etc.)
4. Determining the scope of the review	Scoping a review means deciding on the size, nature and extant literature. Also, it entails framing and defining the boundaries of a research area for the study.	Determining the scope of a review can be guided by the following questions: what are the study's purpose and goals? How much is known about the area? How many years will the review cover? Will the review cover methods, techniques, and sample size?
5. Managing the growing volume of studies	Ability to filter relevant articles, books, book chapters, etc., from irrelevant ones	The review might be restricted to extracting articles from specific journals with a higher impact.
6. Conducting useful synthesis and critique of the literature	Describing the review's main findings, categorising, aggregating, organising, comparing, and	Utilising the tripartite model focuses on describing, synthesising, and critiquing. Critique can focus on arguments/rhetoric, the logic of arguments, methods

Key challenge	Conceptualisation	Strategies
	contrasting the evidence extracted from the studies reviewed.	used in the studies, theories and concepts, established beliefs, values, etc.
7. Organising the literature in a meaningful manner	Aligning the literature's purpose and the review's objective shows relationships between previous studies, themes, and theories.	Reports can be organised in a logical, sequential or chronological manner. It might also follow well-established domain protocols of reporting common in any particular domain (e.g. Business).
8. Writing a clear and helpful report	Organise reports by looking for patterns and by developing key themes and subthemes.	The literature review report leads to developing new knowledge or identifying essential research questions or theoretical frameworks.
9. Assessing the quality of literature resources and reports	Assess the selected studies, determine the research design's rigour methods, and align findings with research questions. At least two coders can carry out an assessment using inter-coder reliability.	Harvesting and extracting articles from credible sources published in higher-impact journals. Following a well-established set of rubrics can be applied to judge the quality of the written report. Mitigating inherent selection biases in the process.

6. Summary and conclusion

A literature review is an essential part of any scholarly work; it establishes a foundation for theorisation and sets the stage for asking new research questions. Engaging with academic literature provides insights into what is known about a topic from previous research and the opportunity the new research can seize to make a worthwhile contribution. The outcome of the literature review serves to explain the research's contribution and develop a clear rationale for the problem studied and the need for additional research.

Though literature review constitutes a significant part of postgraduate education, several postgraduate students and early career academics still face difficulties conducting literature reviews (Badenhorst, 2018; Chen, Wang and Lee, 2016), and there are limited tools are developed to help students overcome such challenges (Cumming, Lai and Cho, 2016; Graham, 2015). This article identified nine common challenges postgraduate students and early career academics face when engaging with the literature:

- difficulties in choosing a practical approach to reviewing the literature,
- inability to design an efficient search strategy to locate materials for review,
- problems locating relevant literature,
- inability to determine the appropriate scope of a review,
- issues in choosing quality and relevant materials and managing the growing volume of published work,
- problems in effectively synthesising and critiquing the literature,
- inability to organise and write clear reports,
- and lack of indicators for assessing the quality of written literature reports.

The key challenges relating to engagement with academic literature presented in the article were based on perceptions of a small self-selected sample of participants who participated in several workshops on research methods at a public university in New Zealand; hence, the findings cannot be generalised. Moreover, the causes of the nine challenges of engaging with the literature presented in the research are unknown. Examining each challenge in the future, especially its severity relative to a group of postgraduate students and early career academics, is necessary.

References

Anderson, N. K. and Jayaratne, Y. S., 2015. Methodological challenges when performing a systematic review. *European journal of orthodontics*, *37*(3), pp. 248-250.

Aromataris, E. and Riitano, D., 2014. Constructing a search strategy and searching for evidence. *American Journal of Nursing*, *114*(5), pp.49-56.

Asare, S., and Daniel, B. K., 2018. Factors influencing response rates in online student evaluation systems: A systematic review approach. *Journal of Interactive Learning Research*, *29*(2), pp 133-144.

Badenhorst, C. M., 2019. Literature reviews, citations and intertextuality in graduate student writing. *Journal of Further and Higher Education*, *43*(2), pp. 263-275.

Badenhorst, C. 2018. Citation practices of postgraduate students writing literature reviews. *London Review of Education*, *16*(1), pp. 121-135.

Bosanquet, A., Mailey, A., Matthews, K.E. and Lodge, J.M., 2017. Redefining 'early career in academia': A collective narrative approach. *Higher Education Research & Development*, *36*(5), pp.890-902.

Bradbury-Jones, C., Breckenridge, J.P., Clark, M.T., Herber, O.R., Jones, C. and Taylor, J., 2019. Advancing the science of literature reviewing in social research: the focused mapping review and synthesis. *International Journal of Social Research Methodology*, *22*(5), pp.451-462.

Braun, V., and Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), pp 77-101.

Chen, D. T. V., Wang, Y., M., and Lee, W. C., 2016. Challenges confronting beginning researchers in conducting literature reviews. *Studies in Continuing Education*, *38*(1), pp. 47-60.

Cooper, C., Dawson, S., Peters, J., Varley-Campbell, J., Cockcroft, E., Hendon, J., and Churchill, R. 2018. Revisiting the need for a literature search narrative: A brief methodological note. *Research synthesis methods*, *9*(3), pp. 361-365.

Cumming, A., Lai, C. and Cho, H., 2016. Students' writing from sources for academic purposes: A synthesis of recent research. *Journal of English for Academic Purposes*, *23*, pp. 47-58.

Daniel, B.K., 2018. Contestable professional academic identity of those who teach research methodology. *International Journal of Research & Method in Education*, *41*(5), pp.548-561.

Daniel, B.K., 2019. Engaging with the Academic Literature: A Systematic Approach, Strategies and Tools, in Dan, R. (Ed) *Innovation in Teaching of Research Methodology Excellence Awards 2019: An Anthology of Case Histories, Reading, UK: Academic Conferences and Publishing International.*

Daniel, B., Kumar, V., & Omar, N., 2018. The postgraduate conception of research methodology: Implications for learning and teaching. *International Journal of Research & Method in Education*, *41*(2), pp. 220-236. Doi: 10.1080/1743727X.2017.1283397

Daniel, B. K., and Harland, T., 2017. *Higher education research methodology: A step-by-step guide to the research process*. London, UK: Routledge, 154p.

Fisch, C., and Block, J., 2018. Six tips for your (systematic) literature review in business and management research. 68, pp 103–106. Retrieved on 18 July 2022 from https://link.springer.com/article/10.1007/s11301-018-0142-x

Graham, C.R., 2015. Reviewing the literature when there is so much of it. In *Conducting research in online and blended learning environments* (pp. 28-42). Routledge.

Haddaway, N. R., Bethel, A., Dicks, L. V., Koricheva, J., Macura, B., Petrokofsky, G., Pullin, A. S., Savilaakso, S., and Stewart, G. B., 2020. Eight problems with literature reviews and how to fix them. *Nature Ecology & Evolution*, 10.1038/s41559-020-01295-x. Advanced online publication. Retrieved on 18 July 2022 from https://doi.org/10.1038/s41559-020-01295-x

O'Neill Dr, M. M., Sarah, R., and Lamb, J. T., 2018. Using NVivo™ for literature reviews: The eight-step pedagogy (N7+ 1). *The Qualitative Report*, *23*(13), pp. 21-39.

Maier, H. R., 2013. What constitutes a good literature review, and why does its quality matter? *Environmental Modelling and Software*, (43), pp. 3-4.

Mason, J., 2002. Qualitative researching (2nd Ed.). London: Sage.

Mason, P., Augustyn, M., and Seakhoa-King, A., 2010. Exploratory study in tourism: Designing an initial, qualitative phase of sequenced, mixed methods research. *International Journal of Tourism Research*, *12*(5), pp. 432-448.

Neilson, A., Daniel, B. and Tjandra, S., 2019. Systematic review of the literature on big data in the transportation domain: Concepts and applications. *Big Data Research*, *17*, pp. 35-44.

Ndukwe, I. G., and Daniel, B. K., 2020. Teaching analytics, value and tools for teacher data literacy: a systematic and tripartite approach. *International Journal of Educational Technology in Higher Education*, *17*(1), pp. 1-31.

Nkomo, L.M., Daniel, B.K. and Butson, R.J., 2021. Synthesis of student engagement with digital technologies: a systematic review of the literature. *International Journal of Educational Technology in Higher Education*, *18*(1), pp.1-26.

Noble, H. and Smith, J., 2018. Reviewing the literature: choosing a review design. *Evidence-based nursing*, *21*(2), pp.39-41.

Nylander, E. and Hjort, M., 2020. Information Literacies of PhD Students: A Hermeneutic Dialectic Study within the Health Sciences. *New Review of Academic Librarianship*, pp.1-21.

Paré, G., and Kitsiou, S., 2017. Methods for literature reviews. In *Handbook of eHealth Evaluation: An Evidence-based Approach [Internet]*. The University of Victoria. Retrieved on 18 July 2022 from https://www.ncbi.nlm.nih.gov/books/NBK481583/

Pham, M. T., Rajić, A., Greig, J. D., Sargeant, J. M., Papadopoulos, A., and McEwen, S. A. 2014. A scoping review of scoping reviews: advancing the approach and enhancing the consistency. *Research synthesis methods*, *5*(4), pp. 371-385.

Rienties, B. and Hosein, A., 2020, July. Complex transitions of early career academics (ECA): A mixed method study of with whom ECA develop and maintain new networks. In *Frontiers in Education*, 5, p. 137. Frontiers Media SA. Retrieved on 18 July 2022 from https://www.frontiersin.org/articles/10.3389/feduc.2020.00137/full

Rayle, A. D., and Chung, K. Y., 2007. Revisiting first-year college students' mattering: Social support, academic stress, and the mattering experience. *Journal of College Student Retention: Research, Theory and Practice*, 9(1), pp. 21-37.

Richardson, J., Grose, J., Nelmes, P., Parra, G., and Linares, M., 2016. Tweet if you want to be sustainable: a thematic analysis of a Twitter chat to discuss sustainability in nurse education. *Journal of Advanced Nursing*, *72*(5), pp. 1086-1096.

Schryen, G. 2015. Writing qualitative IS literature reviews–Guidelines for synthesis, interpretation and guidance of research. *Communications of the AIS*, *37*(Art 12), pp. 286-325.

Saunders, M. N., and Rojon, C., 2011. On the attributes of a critical literature review. *Coaching an International Journal of Theory, Research and Practice*, *4*(2), pp. 156-162.

Smallbone, T., and Quinton, S., 2011. A three-stage framework for teaching literature reviews: A new approach. *The international journal of management education*, *9*(4), pp. 1.

Snyder, H., 2019. Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104*, pp. 333-339.

Templier, M., and Paré, G., 2015. A Framework for Guiding and Evaluating Literature Reviews. *Communications of the Association for Information Systems*, *37*(1), pp. 6.

Terry, MM and Terry, D.R., 2013. The challenges of conducting literature reviews in research: Attempting to stand on the shoulders of giants, Conducting Research in *a Changing and Challenging World*, Nova Science Publishers, Thao Le & Quynh Le (ed), Hauppauge, NY, pp. 33-43.

Vom Brocke, J., Simons, A., Riemer, K., Niehaves, B., Plattfaut, R. and Cleven, A., 2015. Standing on the shoulders of giants: Challenges and recommendations of literature search in information systems research—c*ommunications of the association for information systems*, *37*(1), p.9.

Warburton, J., and Macauley, P., 2014. Wrangling the literature: Quietly contributing to HDR completions. *Australian Academic & Research Libraries*, *45*(3), pp. 159-175.

Wheeler-Hegland, K., 2009. Evidence-based systematic review: Oropharyngeal dysphagia behavioural treatments. Part II—Impact. *Journal of rehabilitation research and development*, *46*(1-5), pp. 171. Retrieved on 18 July 2022 from https://www.rehab.research.va.gov/JOUR/09/46/2/pdf/ashford.pdf

Xiao, Y., and Watson, M., 2019. Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, *39*(1), pp. 93-112.