

# Writing a Doctoral Thesis or Dissertation in the Social Sciences

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A guide for doctoral students at various stages of their doctoral theses and dissertations: Designing their thesis proposals, developing their research question(s), beginning their data collection, or writing their findings.

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# UNIT 1: Starting at the end - What will you be defending?

## Summary of the concepts in Unit 1

### Starting at the end – What are you defending?

- What is the purpose of a thesis? – how this affects its structure and presentation
- Epistemological differences
- Alternative approaches to thesis development.
- Characteristics of an empirically-based thesis -
  - Scholarly sources.
  - Data based
  - Sources cited
- Your goals
- Defending a thesis means that your evidence –
- your data will speak for you.
- What a thesis is not.
- What a thesis is.
- Meet the reader
- How does a master's thesis differ from a doctoral thesis?

### Epistemological differences

#### ***Positivism***

Epistemology is the study of knowledge; what it is, how we acquire it and how we use it. Since before Plato and Aristotle, there has been debate about the nature of knowledge, and therefore of truth and reality. Traditionally in the social sciences, positivist methodology has been used to build on humanist beliefs that research can provide an objective, reliable, and universal foundation for

knowledge. In the social sciences, research is conducted in multiple ways, with a variety of objectives, using multiple methodologies to uncover the answers to researchable questions. While positivistic empirical techniques no longer dominate how we conduct research, there are still some important principles of scientific enquiry that prevail.

The purpose of research in the social sciences is to uncover or at least come as close as possible to representing a true state of affairs. Although 'truth' becomes increasingly subjective and prone to interpretation in our society, the task of thesis writers is to convince their readers that the evidence they present is a credible representation of the state of the world. Mostly this means that the findings from the research are believable to the reader, and that the reader can trust them to be accurate, suitably supported, and interpreted within the limits of the method used to investigate them. By following the arguments that the writer sets out and examining the evidence that the writer supplies to support the arguments, the reader decides whether the writer's final summary and discussion of the findings are convincing and credible.

A further stipulation is that the reported research must result in a significant contribution to the literature that already exists in that field. It cannot be trivial or self-evident, nor can it be the arduous overstatement of the obvious.

These principles hold when writers publish the findings from their research. Whether the publication is an article in a scholarly journal, or in a thesis (dissertation), the people who are tasked with reviewing the submitted publication must address whether the conclusions that the writer draws from the findings are convincing, credible and supported by the evidence presented, whether the conclusions are based on sound reasoning, accepted data collection techniques, and coherent interpretation, and whether the paper offers a significant contribution to the literature in its field.

I hasten to add that, in addition to empirical research featuring data collected on human subjects, important research techniques that are suitable for doctoral theses include:

- research that creates new theories that are more parsimonious or encompassing than those currently existing in the literature, and that therefore invite others to test their veracity
- research methods such as meta-analyses that use statistics to combine large numbers of published studies in a field in order to identify the overarching trends that cannot be seen in the individual studies alone
- implementation research – a group of emergent research approaches that contribute to field-based practice based on the outcome of implementing new approaches in the field.

Common to these techniques is that they too must present sufficient evidence to convince the reader that they make a convincing and viable contribution to their field of study.

### **Alternative approaches to thesis development.**

While the purpose of scientific endeavour is to uncover the 'truth' about something, the term 'truth' is increasingly suspect in our current society where 'fake news' and allegations of biased representation are frequent responses to any form of publication. Increasingly in this age of social media, consumers must distinguish between what can be trusted as likely to be true and what is unlikely.

These criteria are less stringent when the publication is in a newspaper or media report. Most journalists would agree, however, that their professional reputation rests on being able to back up their opinions and claims with evidence from their sources. Good journalism also depends on maintaining the same standards of ethical responsibility as those required for scholarly publication.

In this day and age of social media, unregulated internet content, and hostility between news media and those who invest in the news, the topic of "fake news" seems to be constantly in front of us. Thesis writing brings you into the middle of this topic. Like news reporting, television documentaries, on-line advertising and the explosion of information that is designed to influence our values, beliefs and knowledge, scholarly writing demands that you supply sufficient proof to your audience to convince them that your conclusions are

justified. This is a lofty and exacting standard to reach. At the moment, controversy in social media revolves around whose beliefs about truth prevail, and who has the responsibility for maintaining these standards on the media platforms on the Web; the communication platform or the subscriber.

There are thesis supervisors and mentors who would claim that the field of epistemology no longer embraces a notion of a generic truth, but that one's own reality is one's truth, and therefore truth is relative, personal and not open to challenge. This has given rise to a branch of research that can be autobiographical, unique and interpretive. It might draw on art, drama, comics or other forms of creative expression. Such post-structural theories challenge the assumptions of traditional scientific method and “ask different sorts of questions to examine and expose the structures and discourses of concepts such as humanism, reason, truth, and a linear unfolding of history, and, in so doing, open contested possibilities” (Pillow and Mayo, 2010, p. 201).

Two giants in social science research, Howard Gardiner and Elliot Eisner, at the 1996 AERA conference, argued whether novels can count as material for doctoral dissertations. Eisner, who took the position that novels can serve this purpose, won the debate on the audience's vote.

While these forms of scholarship are legitimate sources of material for theses, I do not describe them in depth here. I do not know how to deal with them in the context of the standards of scholarship that I will be presenting. My approach to thesis writing is largely empirical in nature; that the reader stands to be convinced by the findings presented and conclusions drawn by the writer.

So, like the Surgeon General's warning, if your interest is in creating and presenting a thesis that may not be presented as being justified by the existing literature and may not rely on the empirical evidence or data derived from third parties, (although it may or may not be based in and include your own hunches and experiences), this guide may not be for you.

Having acknowledged that certain types of theses do not follow the format described in this Guide, I contend that in general this is the format that is usually

followed in the Social Sciences. Indeed, it is a universal template that is applied in research in the Social Sciences in universities around the world.

### **Characteristics of an empirically-based thesis.**

**Scholarly Sources.** First, research questions are based in a scholarly literature that has been published in peer-reviewed scholarly sources such as books and journals. Peer reviewing indicates that the publication has reached a standard that is marked by its acceptance by peers as demonstrating a high level of scholarship. In the academic community, this standard is as close as one can get to claiming that the findings and conclusions are likely to be a truthfully representation of the phenomena being studied and reported, as far as it is possible to do so.

**Data based.** Second, a thesis (and other scholarly writing) is not based on abstract or unsubstantiated opinions and beliefs, or on persuasive language, but on the data, evidence or testimony that allows others to check whether they are convinced by it, and they can accept the interpretation that the author places on it. Although controversies and arguments abound in this literature, it is open for scholars to scrutinize, and it can therefore contribute to the healthy growth of research ideas and theories. Although arguments, controversies, opinions, beliefs and evidence from sources that have not been scrutinized by a group of peers can indeed form part of a thesis, the sources need to be identified and must be available for scrutiny and supported at least in part by material from the scholarly literature.

**Sources cited.** Third, in order to meet the required standard of scholarship, writers of research are expected to follow a number of conventions. These include a format for how sources are cited, and to whom cited material is attributed. These are rules that allow a reader to independently verify the source and the content of the literature on which the research is based. For example, there are rules against plagiarism; to make sure that scholars are able to trace the origins of opinions, interpretations and conclusions presented in theses and papers to the source who first conceived and communicated them.

The sequence of a thesis, like a published article, is not arbitrarily decided by the gurus in the publishing field. There is a logical sequence to the parts, discussed below, that is designed to lead the reader through the process the writer followed, and to persuade the reader by the evidence presented that it is important, relevant and that the conclusions are reasonable, convincing, authentic or valid.

## **Your Goals**

Start the thesis journey with a clear understanding of where you are aiming to reach. You will be defending a thesis that contains a set of findings, with inferences and conclusions that you draw from them. You will be defending your findings and conclusions to people who read your thesis; your thesis supervisor and committee, as well as the people who read it later, either in a shortened form for publication or as a source for their own thesis or publication. As in the case of legal testimony, one of the roles of your examining committee is to find weaknesses and gaps in your presentation that allow for alternative interpretations or that undermine the credibility of what you present. This isn't a nasty process; it is to ensure that you have exercised the rigour that is required to convince the committee that your findings are trustworthy. The main parts of the thesis that you will be defending are:

- How you justify the study through a thorough analysis of the current literature that is relative to your topic
- How you chose to conduct your investigation, how you collected your evidence and what your chosen methods allow you to say about your evidence
- How you presented and analysed your evidence
- The conclusions you drew and the inferences you made about that evidence in your discussion of how it relates to your previously presented literature.

You start with a topic out of which you generate a question or questions (Unit 6). The existing scholarly literature is the basis for justifying the question, and how you will address it (Unit 5). You then design a method as carefully and thoroughly as you can in order to investigate your question (Unit 7). You will be defending how you addressed the question. Your aim is to convince your readers that, as a result of applying your investigative method to your question, your findings are convincing and provide reasonable answers. The findings/evidence/data may not be exactly what you expected when you began, but that is why you start with a question and not an assumption or an assertion.

In order to convince your reader that your findings reflect a convincing and believable answer to your question, you will need to be thoroughly conversant with the larger field of research in which your study is located. You will have situated your question as plausible and important in this field. You will have presented a way of investigating the question that your reader will agree fits the question and yields plausible answers. You will have presented evidence to lead you and the reader to draw a conclusion about the answer to the question(s).

Your job is to set up a collection system that can appropriately address your question. In short, *the evidence speaks for you*. Or, as my own supervisor said many years ago, “look after your data and your data will look after you”.

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*Defending a thesis means that your evidence – your data – will speak for you. Your task is to document what it says.*

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This sounds like a facile statement. It is however at the heart of so much confusion about how to write a thesis. It isn't your job to persuade your reader that your initial hypothesis or claim is correct. It may turn out to have been wrong. Your initial research question is your best guess about what you expect to find from the evidence you propose to collect. That best guess is tightly based in the existing literature, and even though the literature has not directly addressed your question for the participants or material that you will investigate, it is justified by the literature and by your analysis of the issues and events that give rise to it.

Your research question(s) are your hunch, hypothesis, or best guess about what you will find.

Sometimes they will be incomplete, nuanced or plain wrong! Indeed, if your evidence begins to tell a story that you did not expect, you may have to modify your initial question and the material that you have used to support it. I have read more than one thesis in which the evidence generated by the participants failed to shed the expected light on the researcher's initial research question(s) and instead raised new or nuanced alternatives that the thesis researcher had not anticipated. This isn't a calamity. It is what scientific endeavour is about. It may require rethinking the premises of the study and possibly adjusting the research topic, and even the literature on which the research is based, in order to explain or take account of the unexpected findings. That is how science proceeds: building new structures on the existing ones, creating layers of understanding, and clarifying the theories and interpretations given by scholars who have preceded you. These are hypotheses that are themselves then open to further refutation or confirmation by future researchers.

The final version of your thesis reflects a logical sequence of presenting evidence that leads the reader to agree with your initial or revised hypotheses, and then with the conclusions you draw. Keep in mind that, while the final version of your thesis will present this logical, linear sequence, getting there will involve twists and turns, and multiple returns to previously drafted sections, and to rethinking your initial speculations.

**What a thesis is NOT:**

- *Everything I've been reading!* A repository of all your reading, knowledge in and understanding of the literature in your field. The literature is selected to justify your investigation, and therefore you have not only summarized in your review, but you have also analysed and criticized it, in order to show where the gaps, inconsistencies or omissions have been made that you will address in your own study. More about this in Unit 6.

- A *persuasive argument* to entice your readers to agree with you, containing superlatives, emotionally loaded language and other persuasive techniques (irrespective of the evidence). Instead, the evidence you present in your findings will and must speak for itself.
- A *political position* (small p) that you believe you should defend. Although you may end up with a politically controversial conclusion, you do not start the thesis by taking a controversial stance. You can start by asking a question that involves the controversy, but not by making a claim. Your position emerges at the end, supported by the data, and is subtler than an 'op-ed' piece.
- A *Political position* (large P). See "Alternative approaches" above!
- *Persuasion with hyperbole* – the reader will not be persuaded by your opinions unless the evidence you present is itself convincing. When writing, avoid superlatives and emphatic words that are designed to persuade rather than to simply make a statement.
- A *narrative with a twisted plot* and a grand unveiling (denouement) at the end, like a novel or a good play. The reader needs to know from the very first paragraph (the Abstract) what they are going to find and the path that your research report will take.
- A "*hard sell*" of your conclusions. The reader needs to be able to follow the direction of the thesis, without coming to the realization well into the thesis (or thesis proposal) "Oh! that's what this is all about!".
- A piece of *investigative journalism* that starts with a foregone conclusion about the malaise in the system. Again, you may start with a premise (hypothesis) that something is wrong, but your job is to challenge the 'null hypothesis' – that there is no reasonable evidence to support the premise or initial claim. If it turns out that there is evidence to support it, that's great. You will have a substantive thesis in which you discuss this finding and its implications – in the Discussion section at the end. As in good investigative journalism, the job of a journalist is also to present evidence from verifiable and trusted sources.

So, a thesis is not evaluated on the basis of the literature you have read and cited, nor on your ability to locate your topic in the relevant literature. It does not use persuasion to convince your readers that a certain perspective or claim is true. You will indeed draw on your broad knowledge of the literature to situate your topic (see Literature review, Unit 5), and on the material you select and the way you present it. The ultimate purpose will be to present evidence that supports your conclusions (in the Discussion, Unit 9) once you know what these are.

### **What a thesis IS:**

- It tells the readers up front what they are going to read about. Your thesis presents the question and summarizes the evidence (findings) right in the abstract on page 1, then it goes on to roll out the literature that addresses the findings, the methods used to collect evidence, the findings themselves, and the discussion of what it all means.
- It uses evidence (data, systematic analysis, logical derivations, verbatim first-hand transcripts, validation, triangulation) to convince the reader that you have systematically investigated the question you set out to investigate.
- It explores as many counter arguments as possible and shows from the evidence itself why these either do not hold or are not the best or most parsimonious explanation of the phenomena under study.
- It permits the reader to agree with your conclusions based on your evidence, i.e., what your data show and why you think that these are the best answers to your initial research question.

In short, a thesis is the presentation of a set of evidence that adds to knowledge in your field. Your introduction to the evidence, your methods for collecting the evidence and your presentation of the evidence become the core of your thesis,

and the criteria on which your presentation will be judged to be believable and convincing.

**Meet the READER** – the audience for whom you write.

The reader will be focal as you write the thesis. The reader has a very important role from the outset of your thesis. It is this mythical person (and ultimately your very real examination committee) who needs to be convinced about the soundness of the question(s) you raise, the way you collect your evidence to address your question, the way you present the evidence and the conclusions you reach.

The reader is a judge who is seeking to be convinced by the evidence you present. The reader in this discussion is a composite of the examiners on your committee, the people on your thesis defense committee, those who may read your thesis subsequently, and your audience when you publish your work. It follows that your thesis defense, whether an oral examination where you present and defend it or a written submission, is the forum where the reader raises any questions he or she may have about the elements of the thesis, whether each element is up to the job of convincing him or her that your evidence can be trusted. Further, the reader(s) will dig deeply into why you reached the conclusions you present, how far they are based on evidence, whether they make a new and important contribution to the literature, whether they can be believed and trusted or whether there are possible alternative explanations for your findings.

One more thing – **You can work backward**

It's OK to adjust the front end of your thesis if your findings show something different from or more interesting than the question you set out to answer. The sections of your thesis are designed to convince your reader about your findings. So, the opening chapter will tell the reader where you are going to lead them. The literature you review will serve to set the context but more importantly, will set up the research question you will explore. The literature review takes the

form of a funnel, leading the reader from the broader contexts that intersect at your study to the specific issues that need to be addressed.

Next you present the techniques you used to uncover the evidence that addresses the research question; the Method. You then present the data/evidence that, first, shows the strength and stability of your attempt to address the question (the measures, the data collection and analysis techniques you chose). Then you present the findings themselves: the Results chapter.

The final Discussion links the finding you report back to the question and the research literature from which it came. This link allows you to draw conclusions about what you found; to explain your findings in your own voice and to present your position about what the findings mean. By this point your writing favours a claim or explanation that you want your reader to agree with, but by then you will already have established that this is the best interpretation of the data.

This focus on evidence is true whether you are writing a quantitative or qualitative thesis, whether the methodology is case study or survey, statistical analysis or themes from interview data, or even a thesis with an alternative format. You may hold a very strong commitment to a particular viewpoint, but your job as an academic writer is to collect and present the evidence that justifies this viewpoint. Your readers are looking for such evidence from the findings you present, not just from your description of them.

See Unit 3 for a more detailed development of the thesis structure.

### **How does a master's thesis differ from a doctoral thesis?**

The principles that are outlined in this chapter hold for both master's and doctoral theses/dissertation. Both are expected to demonstrate the principles of scholarly writing: Objectivity - sources are cited and evidence of the veracity of the data are presented; based in and justified by the literature that intersects with the study; one or more researchable questions; a collection and analysis of data/evidence that the reader can judge to be sound; the results as supplied by

the sources that you document, the conclusions derived from and limited by the evidence you have presented.

A master's thesis is a smaller version of a doctoral thesis. It may also be of less depth than a doctoral thesis, and may feature a pilot study, the development of a measuring instrument such as a questionnaire or survey, an in-depth literature review leading to researchable questions, or the critical analysis of a policy document, research report or data set. It will not be less rigorous since it must reflect the same set of research skills that are required for a doctoral or higher-level thesis.

Each university department will have its own criteria for how to accomplish an acceptable master's thesis. The chapters in this text that deal with the components of a thesis and how to present it are therefore as relevant to a master's thesis writer as to a doctoral candidate.

## UNIT 2: Keeping moving

### Key concepts from Unit 1:

The interconnected-ness of the elements of a thesis

Characteristics of an empirically-based thesis

Scholarly sources.

Data based

Sources cited

Your goals

Defending a thesis means that your evidence – your data – will speak for you. Your task is to document what it says.

What a thesis is not.

What a thesis is.

Meet the reader– the audience for whom you write.

You can work backwards – the results determine the beginning.

### Unit 2 summary:

#### Keeping moving

Keeping motivated

Time management

The importance of real-time feedback during the writing process.

- a. Personal characteristics of students that complete the degree.
- b. Supervisor characteristics; styles of supervision.
- c. Working with your supervisor and thesis committee
- d. The external examiner
- e. Preparing to meet with your supervisor.

Peer support, critical friends and on-line resources.

## Keeping motivated

Am I up to it? Everyone asks themselves this question. Yes, YOU CAN DO THIS! Look at it as a challenge that you can overcome and succeed. Thorough, consistent and careful work, with the goals and outcomes of a thesis in mind (Unit 1) will get you there. It is a learning process - a steep learning curve indeed, but one designed to equip you with the skills to become independent researchers and writers. It is a rite of passage, not a mountain.

Will it take time? – yes, a lot of time, and likely some sacrifices. Those whom you care about may not get to spend the time with you that you or they would like – and you may struggle with prioritizing your precious time. But YOU DESERVE THIS! You have come a long way to this point and you owe it to yourself and to the people you care about to finish it. They will usually understand this if you help them to do so.

Do I have the confidence to join this auspicious and prestigious community of academic scholars? It's a huge undertaking! Yes - This may be the longest paper you have ever written, but it will not be the most brilliant paper you ever write – those can follow. This one is a starting point- it is your *best work at this stage* in your career – not your ultimate achievement. So, by definition, you can do it! It must be clearly laid out, convincing because of the evidence you present. It must be honest and valid (supported by sources), and your own work. This will indeed mark the threshold of a new career – and it will change your life. But this won't happen instantly: It's part of an ongoing learning process that you will hopefully savour.

If you have self-doubt, know that you share it with others. No matter what field you enter in your career, or what stage you reach, you will meet people who are more knowledgeable and competent and successful than you. But it doesn't follow that you have failed: These people are your role models. This is your life's work as you gain the confidence and expertise to emulate them.

Make your topic your own. Take ownership of every piece of evidence and argument in your thesis. This is your contribution to your field – it is unique to you. When you go to defend it, you will know more about this topic than anyone

else in the room – really!! Even your supervisor will not have the depth of reading and understanding that you have. I know this because I'm proud of what my graduates have taught me!

Read, read, read, and then read some more. Preparing the context for your study is like throwing a stone (your topic) into a large pond. The pond is all the literature that is in and tangential to your field. Where the stone hits the water, the ripples enlarge and move out. You encounter related literature, the history of your field, the methods that have been used to explore it, and the key researchers and writers who have made significant contributions to your 'pond'. You will know when you touch the edges of your pond; you will have become familiar with not only your topic and its antecedents, but also related and peripheral studies. In short you will have grasped how your study fits into the larger pool, and how and why it contributes to it. Then you will be able to go back to where you threw in the stone in the first place, because you will be able to position your study precisely in its larger context. This is the purpose of the literature review: it locates your topic in the larger field, and it justifies why your study is needed and how it will be investigated.

Have a system for keeping track of what you read. One of my previous students recently told me that this was the most valuable piece of advice I gave her. (I hope there were others!!). Your system could be a set of index cards, an electronic file (with lots of back up), a software program designed to organize research, a file cabinet of offprints with a fully annotated list, a mixture with a master index. It depends on how you work and annotate material, but it needs to be systematic.

What should be in your system? For each article you read, at least:

- Key words for retrieving it later. You may develop a classificatory system as you begin to write and add your readings to various sections of each topic – often to more than one. It's hard to start with a classificatory

system, and you will revise it as the topics emerge, so keep it simple initially.

- The main points, - what each article or source says that might be useful, complete with quotes and page numbers etc.
- Other authors cited in that article, what they are purported to have written that you will want to check – and for whom you may create a new file later
- The full citation of the source, its date, title, full author list, publication, page numbers and date of electronic retrieval. Be OCD – don't skip the detail. (Oh, how much time you can waste when you are writing up and you didn't save the source and have to go back to find it!!)
- Most important: A critical analysis of the article: what it lacks; why it is related to but different from your proposed study; how the participants differ from yours, why the method was not sufficient to address your own question, etc.

It is now possible to use one of a variety of software packages to help you to organize your readings, as well as to set up your citations in your emerging thesis, and to construct the Reference section that will complete it. Some of these will be described in Unit 5 on writing the Literature Review.

### **Time management**

The main point about managing your writing time is that you must give your thesis a high priority amongst your many daily tasks. This requires self-discipline. There isn't another way to get your work done except to schedule it. And it needs to be sacrosanct – no interruptions and no social media etc. It needs to be your priority for the time you allocate to it, not a pastime on the side. Turn off your cell phone and focus on your computer's thesis tab; just you, your research materials and your computer, good lighting, a well-structured desk and chair, and perhaps something nice to sip. Some of my students wear headphones to block noise; others listen to gentle background music.

The scheduling is up to you. Bloggers at the helpful site [National Centre for Faculty Development and Diversity](#), (it caters to graduate student writers also), recommend that you allocate at least a half hour every day to writing. You could allocate one or more hours per day; with or without weekends off. In any case it must be regular and systematic. It is very hard to 'get up to speed' when you have been away from your thesis for several days or weeks. More about time management and stress in Unit 12.

There are several stories of how writers managed to fulfill their writing time allocation. One spent 5 weeks in a cabin in the Yukon - and finished a first draft. One of my students rose at 5 am to spend two hours with her thesis before her kids and husband got up, after which she prepared them and herself for a full workday. Another student allocated three hours every night after her workday when her children were in bed. She told me that some nights she would stare at her computer for the full three hours without being able to move forward – but she would not let herself off the hook. In retrospect she thinks this might have been thinking time, when her material incubated and began to take shape in her mind. Other nights the writing flowed, often after a spell of thinking about it. These folks deserve a medal – and the doctorate they earned – for their self-discipline.

Instead of an allocation of time, you could also set yourself a daily goal of number of words written. It could be 1000 or more or less. One student had a slogan on her computer that read “If I write today, I will feel good”. She still has that note, and she still writes for publication with that note in front of her. Another student confessed that he is a perfectionist; he cannot write and leave what he has written but must keep revising it. As a result, he is preventing himself from moving forward, and may keep losing sight of his larger topic and goals. So, another good self-management strategy that might work for you, at least in the early stages of writing, is to try to write every day, writing anything that comes to mind associated with your thesis, and without too much editing. Aim to get the ideas out there, while you remember them and to polish them later when you incorporate them into your larger document. Have a note pad handy to jot down a

thought that you have, no matter when you have it, before it is lost. Quality doesn't matter initially – just get the thinking down.

Many sites that assist writers recommend that you write for at least a half hour every day. The students with whom I work do not recommend this; it takes longer than a half hour to 'get up to speed' on the section you are currently writing. They suggest allocating a 2- to 3-hour time frame, at least once or twice a week. Don't get upset with yourself if nothing seems to be emerging – your brain sometimes needs to mull the material. Take a break and come back to it refreshed.

Look after yourself - get your sleep, nutrition and some exercise. Don't wear yourself down to the point that you are risking your health. Did you know that [research studies](#) (Retrieved June 26 2017) show that those who study for an exam and then get a full night's sleep do far better on the exam the next day than those who studied all night? The brain does some important organizing during sleep. Make sure that the incubation process during sleep is helping you too. Here are some tips from a YouTube video that addresses the subject of giving yourself a daily writing goal: [Christopher Elphick PhD Writing advice #1](#).

### **The importance of real-time feedback during the writing process.**

Thesis writers need to be connected. In this day of e-mail and social media, this may sound outdated, but it is becoming clear that timely feedback, calibrated to your current levels of understanding, confidence and skills, is vital to success.

Much has been written about the impact of receiving good quality feedback during the thesis writing process via a caring social support network (e.g. Kumar & Coe, 2017; Odena & Burgess, 2017; Peltonen, Vekkaila, Rautio, Haverinen, & Pyhältö, 2017). These researchers investigated the problems that result in the high non-completion rates that define doctoral studies internationally. [Non-completion](#) hovers around 30 to 50% in different faculties and has been a source of concern for many years.

Frequency of supervision and timeliness of feedback are also predictors of successful completion. This was noted by Peltonen et al. (2017).

The research literature explores several aspects of this unacceptably low completion rate:

- The personal characteristics of students who sustain or who choose to withdraw;
- the characteristics of supervisors and the types and frequency of feedback they provide;
- the availability of institutional support structures, such as peers and mentoring groups.

***a. Personal characteristics of students who complete the degree.***

Staying motivated to succeed is important even though motivation to write may ebb and flow, and sometimes seems out of reach. Pekrun (2019) and Pekrun and colleagues (2019) focused their research on the emotional correlates of academic achievement that apply during the doctoral journey. Pekrun has developed the Control Value Theory to predict how emotions are regulated during doctoral studies, and how emotions impact students' achievement motivation. Of course, students react in different ways to the feedback they receive from their professors. Given negative or even neutral feedback, some may be motivated to redouble their efforts, while others may feel shame or guilt. They may subsequently delay or withdraw, believing that, even with evidence to the contrary, they are not competent to succeed. Being aware that such traps are frequent may help you to realize that you are not an anomaly, that struggling to keep up your motivation to complete is one of the difficulties you will face in reaching your goal. It is a long journey and needing help to get there is not just acceptable, but often essential.

Odena and Burgess (2017) note the importance of student resilience in undertaking the thesis journey. The term 'resilience' was coined as a predictor of academic achievements of school-aged children who manage to succeed, sometimes in the face of significant personal tragedies and horrific experiences.

Resilience is defined as the ability to recover quickly from setbacks that create stress and anxiety. We know that a 'significant other', such as a caring teacher or relative, plays a large part in helping students to develop resilience. Similarly, at the post graduate level, resilience may result from positive and supportive feedback from a mentor, peer, supervisor or family member.

Conversely, Clance and Imes (1978) posited the "imposter phenomenon" - now termed the "Imposter Syndrome" in which students tend to see themselves as frauds, and their grades and successes as flukes. They believe that sooner or later they will be exposed for the fraudsters they think themselves to be. This self-doubt can grow into even more serious mental health issues. The [University of Toronto magazine](#) (2018) describes imposter syndrome and its challenges. Being away from the academy, and out of touch with peers who are undertaking a similar process can magnify the self-doubt. Keeping perspective may depend on keeping connected to a mentor or colleague, or subscribing to an informal peer chat group, or an accountability group that checks in regularly online or through one of the writing support groups in your university.

#### ***b. Supervisor characteristics; styles of supervision.***

If a respected person who takes the role of advisor is crucial for the development of resilience, then the supervisor has an onus to be that significant other. In several studies that aim to identify why students drop out, delay or fail to complete their programs of study, the level and type of faculty support is a major predictor of success (Odena & Burgess, 2017). The needs of doctoral candidates vary, however, as do the styles of supervisors. Some supervisors prefer to take a 'hands off' role with their mentees, and for doctoral students who are confident about their trajectory, this may be a great fit. Other students, however, need a greater amount of guidance, and therefore more prescriptive, 'hands-on' mentoring. Further, as students develop their research and writing skills, their needs for guidance may change. Holsinger (2008) discusses perseverance as a variable that predicts student success. Holsinger proposes "Situational Leadership" for supervisors and other mentors, that involves

assessing the level of readiness of the student for differential feedback, which is gauged at various points along the thesis process and allows the mentor to calibrate feedback accordingly.

***Real time feedback.*** No matter how many courses addressed the technical and substantive challenges of developing a thesis proposal and thesis, it is unlikely that students can remember the details long enough to apply them to the thesis topic that usually commences toward the end of coursework. There needs to be some mediating and feedback system that allows a student to check back for reminders and tips when a challenge arises. This could simply be course notes and references, or a guide to thesis writing such as this one. The supervisor or mentor however may be necessary to fill this "just in time delivery" role for a student. Given the workload of faculty and the number of students they support, it may not be possible for the supervisor to give timely feedback. A response to a proposal or chapter draft may occur some weeks after the student has written it. The [Graduate School guidelines](#) at University of Toronto recommend a turn-around time of 3 weeks for return of a document to a student. Online resources and mentor groups are therefore being increasingly used to fill this need.

Many universities now recognize this need and are supplying resources to assist students to move along in real time, with student support services to supplement life's inevitable challenges such as finances, health, work and family obligations. These include academic positions to mediate student difficulties, student success counsellors, writing groups, mental health counsellors, and library and research skills training. My bias is that these need to deal not only with the technical and substantive needs of the thesis writer, but also with the personal and emotional needs that inevitably crop up over the lengthy thesis development process. Therefore real-time, face to face or video meetings with an empathetic and supportive mentor may be crucial to the success of some students.

On the topic of the match of supervisors' styles with student learning needs, Pyhälto, Vekkaila and Keskinen (2015) discuss the 'fit' between doctoral students' and supervisors' perceptions of who is involved in supervision, the frequency of supervision and the main tasks of the supervisor. They also address how the perceived fit contributes to students' satisfaction and resilience. This Finnish study recommends that students spend some time both choosing their supervisor and also negotiating with their chosen supervisor how supervision will take place: the frequency of meetings, the availability of their supervisor during leaves and conferences, and turn-around time to receive feedback.

The frequency and amount of supervisory feedback is also important (Peltonen et al., 2017). Doctoral students who received sufficient support were less likely to suffer from burnout and were less likely to develop drop-out intentions than students who received insufficient support from their supervisor and the researcher community.

This leads to some suggestions for how to work with your supervisor.

***c. Working with your supervisor and thesis committee.***

Actively establish a way to work with your supervisor. What is his/her preferred style of working with you? Proper guidance is essential. In most cases this guidance is provided primarily by one professor who is the supervisor. In the university setting in which I work, a committee is typically brought together for the first time only when you submit a first full draft. The committee may be formed and registered on paper, but the actual committee work begins when your supervisor deems your full first draft work to be ready for your committee to respond to it. This may depend on how the supervisor works with you – so ask. What are the supervisor's expectations? How available is she or he able to be for you and other thesis students – e.g., during conferences, field work research and projects, during the summer or non-teaching time? During sabbatical? How much lead time would he/she need to read and comment on a draft – i.e., what turn-around time can you anticipate?

How will it work? – do you go ahead with your supervisor and involve the committee only when the supervisor deems it ready? – Can you send drafts simultaneously to other members of your thesis committee?

Often students present pre-publication drafts of their work at conferences and receive feedback from their audiences. This is a good approach, particularly if one of the 'super-stars' in your field of research might bring their research group to your session, or if you attend a session that they offer, allowing you to make contacts and join a network of researchers in your field. Some students attempt to publish parts of their thesis ahead of their final drafts. These can all provide good feedback to you about the research and its presentation. Take care however not to overstep a couple of important requirements for your defense. One is that your external examiner is not supposed to know you and your work ahead of receiving your thesis for examination. So, getting to know a professor at a conference may lead to some excellent networking and supports, but may disqualify this person from being your external examiner if they have already commented on your work.

A second is to be aware of copyright implications if you publish papers in journals that hold your copyright, ahead of publishing your thesis. Journals usually require that, in order to publish a paper that you have authored, you certify that the material you submit is original, and not published elsewhere.

#### ***d. The external examiner.***

If you reach out to other researchers in your field, keep in mind that, as you develop your drafts, the topic may arise of who will be asked to serve as an external examiner. The external examiner, if your university requires one, will be asked to read and evaluate your work. As noted above, he or she must usually be arm's length from you; not familiar with your research and writing. Until the final defense of the thesis, you will not be able to interact with this examiner, and you cannot expect feedback on your work until the defense itself. Your supervisor usually has the responsibility of identifying and recommending the external examiner, and there are institutional procedures for doing this. Ultimately, this is your "reader" (see Unit 1), the person to whom all your work has been directed.

You may discuss with your supervisor strategies for identifying potential external thesis examiners, including checking what relevant articles they have published, what kind of orientation they hold to your topic, and whether they are available on the dates and times you plan to defend.

***e. Preparing to meet with your supervisor.***

I am frequently asked by students how they should approach a scheduled meeting with their supervisor. My response is usually to guide them to set an agenda and a timeline to discuss with their supervisor, to present an update of their progress, and structure they hope to follow, and a proposed timeline for their next submissions.

Some tips from the literature on successful thesis meetings include:

- Meet regularly if possible.
- Take notes – bring a note pad or laptop. I often encourage students to audio-record our meeting on their cell phone so that they are able to make post-meeting notes in detail. If in doubt about anything in your notes and memory of the meeting, check with your supervisor.
- Send a draft ahead of a meeting. Or a couple of paragraphs about what you are doing. Don't expect to describe your ideas, initial topic, etc. without a draft. It could be part of a paper you have written, or an outline – but give your supervisor some idea of what you are reading, and what you would like the meeting to be about.
- Follow up with a summary of the discussion to be sent to the supervisor after the meeting.
- Don't cancel a meeting with your supervisor even if you don't think you've written enough – describe where you are stalled
- and ask for suggestions to help you move ahead.
- Find ways to be with your supervisor. Travel with him or her on the way to research sites or conferences; hang out in coffee breaks; ask for appointments; drop in – (please don't ask "Have you got a minute?" but

rather “Is there a time today when I could speak with you?” The response may well be – “I have a minute now”.)

Professor James Arvanitakis [talks about 5 common mistakes](#) that PhD candidates make during their study. One piece of advice is that Ph.D. students should think about the career they have in mind in order to structure how their thesis will ultimately support their chosen direction. Are you thinking of a role in government or in a policy, an applied or research setting, and if so, how can your thesis reflect those goals when you go for job interviews?

### **Peer support, critical friends and online support.**

You may have returned to a career or to a location away from your supervisor and your support systems. You may feel alone and undertaking a journey that none of your family and friends fully appreciates. Or you may just work better when there are soul mates close by. An important source of support is the group of colleagues and fellow students with whom you share coursework and thesis development. As noted above, these may be informal, such as on-line chat groups, or more formal such as participating in the research groups.

Some of the mechanisms for this include:

- Your supervisor or mentor offers research group meetings where students present and ask for feedback from their peers. Check whether there is such a group which is undertaking a similar path, and with whom you can connect.
- Find out if you can set up or join a virtual or an actual weekly meeting with a group of peers. An online group that checks in with one another weekly could entail each person setting a goal for the week, then checking in with the other group members at the end of the week to receive a virtual or an actual pat on the back.

- A blog - There are several online blogs that assist thesis writers to engage with others for advice and support.
  - Two excellent ones are:
    - The [Explorations of Style](#) website contains a blog in which participants discuss the challenges of academic writing. Convened by Professor Rachel Cayley at the University of Toronto.
    - The [Thesis Whisperer](#) is convened by Dr. Inger Mewburn at the Australian National University.
- A writing group - Most universities have a student support service that offers, among other things, writing groups or 'boot camps' to which you bring your laptop and materials. You write, uninterrupted, for the day. In some groups you start by setting a (realistic) goal for what you want to achieve by day's end, and finish by reporting how far you came. Some groups prohibit cell phones and social media.
- Your local university student support center - What supports does your university offer to help you succeed? There is now considerable awareness of the complexity and size of the task of thesis writing, and of the toll it can take on students. Check what resources you have access to, to support students – graduate student peers who will read and respond to your drafts, assistance with English as a second language, seminars on research design, data analysis, writing boot-camps, etc.
- A critical friend - If you have a friend or a co-worker who is aware of the challenges of writing a thesis, enlist his or her help. This person can do any number of tasks to help you proceed; monitor your writing schedule, read and comment on drafts, provide you with a fresh perspective on a paragraph or topic, help you frame an argument, praise you for staying with it, and supply coffee!

## UNIT 3: Structure of a thesis

### Key concepts previously encountered in Unit 1:

- The interconnected-ness of the elements of a thesis:
- Characteristics of an empirically-based thesis.
- Your goals
  - Defending a thesis means that your evidence – your data – will speak for you. Your task is to document what it says.

### Summary of Unit 3:

#### Structure of a thesis

- Elements of the thesis:
- The bowtie
- Introduction. **This is what I want to know:**
  - The question – and sub-questions
- Literature review. **Why I am doing this.**
  - The literature (right bow)
- Research questions. **What I want to find out.**
- Method. **How I will do this.**
  - The method: evidence/data collection (the knot)
- Results. **This is what I found:**
  - The findings/results (left bow)
- Discussion. **Why does it matter?**
  - Tying the bowtie
- Abstract. **In a nutshell:** The last thing you write
- Table of contents
- References
- Appendices

Before discussing the elements of a thesis and the role that each play in

the overall thesis structure, check which style of written presentation of scholarly work is required at your university. For scholars in the Social Sciences this is typically the *Publication Manual of the American Psychological Association* (The "APA Manual of Style", or the "[APA Publication Style Guide](#)"). This guide is also the standard for all subsequent journal articles and other presentations that you will want to prepare while working on your thesis or when it is complete. Get to know it early in the writing process and be sure that you have it on hand. It should live at your elbow and be your closest companion during the writing process. The American Psychological Association (7th edition, 2020) is available online, and has many on- and off-line resources designed to help you prepare your thesis according to the style guide. It covers everything you will need in order to write, from the elements you will develop to how to express your ideas, to how to cite sources and create a reference list. Further details about writing, including the most common mistakes that thesis writer make, are presented in Unit 11; Writing.

### **The bowtie.**

The elements of a thesis are connected. A bowtie is a good analogy for the structure of a thesis. The ribbons that connect the bowtie at the back are like the introduction and discussion of the study. The thesis goes full circle by relating back to where it started, with the discussion of the findings reflecting back to the original questions and their place in the literature.

There are various ways to compile data into a thesis. Statistically based work may be short or long with copious appendices of measures and statistical data. Narrative studies may be lengthy with multiple chapters containing verbatim transcripts or recordings that present the findings by theme or perspective. Case studies may feature a participant or event in each of several chapters. Thesis supervisors and committees may expect differing degrees of depth in the literature reviewed and in the discussion of findings.

Most theses however share two key qualities:

First, they address a question or questions that have the potential to contribute an original finding to the existing literature. The reader needs you to situate the work in the broader literature from which it is drawn, and to relate the findings back to that literature after they have been presented, in order to show how the findings make a contribution. (See Units 5, literature review, and 9, Discussion and abstract).

Second, the thesis presents data/evidence and information that answers or responds to the research question or questions. The evidence is the **key voice** in answering the question(s). The thesis author makes a case at the outset for why the question(s) must be asked, and what he or she claims (speculates, hypothesizes) will emerge. The evidence that is then presented provides the answers to the question(s) and, in the final part of the thesis, the author draws conclusions from the findings revealed in the data, and ties them back to the research questions, and to the literature from which the questions were drawn. Because the purpose is to address one or more central research questions by presenting evidence, the method and results are the core of the work.

Below is a list and brief description of the main components or elements of the thesis. Each one will be taken up in more detail and with added resources, in subsequent units.

- *Thesis introduction.*

“This is what I want to know”- introduces the subject area of the thesis, the question(s) and sub-questions; the first ribbon

- *Literature review.*

“Why I am doing this.” – Here you locate your study in the broader literature, describing where the topic of your thesis sits in relation to the scholarly literature, and how your research question will contribute to the literature. It grounds or creates the context and speaks to the importance of the study. This section of the thesis is developed below in Unit 5.

- *Research questions*

“What I want to find out”. The literature review leads to the research questions. These may be directly relevant to issues in your profession and in society, the popular press, and other sources. They cannot however be framed without being located in the scholarly research that has been conducted to date. I cannot emphasize enough how important this is. Many thesis writers have a deep conviction about their research questions, but this should not overtake the presentation of them as questions, hypotheses or speculations as they relate to existing research. Nor should the main justification for the research question be that no-one has yet written about this, or that there is a gap in the literature. Unit 6 contains some strategies for formulating a good researchable question.

- *Method.*

“How will I do this?” - the **method**: evidence/data collection forms the main knot - tying the questions and their context to a method that will answer them. See Unit 7 for a guide to the development of this section of the thesis.

- *Results*

“This is what I found” – the **results**, evidence, the material that addresses the initial question(s). It’s the other part of the bow. This is the voice of your participants, and/or your findings from surveys, documents or archival analysis etc. It is not your voice (that is, it is not your interpretation or opinion), even after you have declared your interest in and knowledge about this topic. Reserve your commentary, interpretation and opinions about the findings to the final chapter, the Discussion. See Unit 8 for more about organizing and presenting your findings.

- *Discussion*

“Why does it matter?”. Here you discuss the results, relating them back to the initial question and specifically to the literature context from which the question arose, thus completing the circle with the final ribbon and clasp. In Unit 9 we will revisit how to close the loop, presenting limitations and critical commentary, including how to use your own voice as you interpret your findings.

## **Introduction.**

“This is what I want to know”.

In this section, state why the problem is important and the strategy you will follow to investigate it. This is not the Abstract – more about that at the end, and in Unit 9. This is a summary to give the reader a sense of the larger context and a heads up on what they can expect to find when they get to the literature review. Early in the introduction, make sure that technical terms are defined, and definitions are presented, either as a chart or an Appendix.

Do not start the description of the context from a global perspective. Some people attempt to embed their thesis topic in the broadest historical or social context. Here are a couple of examples, with a more focused statement following each:

- “Since time began, there has been a debate about the nature of knowledge, and how people learn. Since Plato, people have made assumptions about how we acquire knowledge and about our ability to learn”
  - Focused: “Teachers’ assumptions about the nature of knowledge and learning in their elementary students may have an impact on their professional practice”

or they begin with a self-evident statement that does not lead the reader into the thesis topic:

- “Children often spend most of their day away from their families and home either in a school or childcare setting (W et al., 2008). These educational environments are of great importance due to the impact they may have on children’s overall development”.
  - Focused: “This study is about young children’s understandings of the purpose and importance of kindergarten”.

## **Literature review.**

“Why I am doing this.”

See Unit 5 for an extended description of how to write a literature review. **Please note that this is a guide only. Individual thesis formats and thesis**

**supervisors may want a different sequence.**

The purpose of the thesis chapter usually termed the Literature Review is to locate your study in the larger related field; to describe the approach that others have taken in exploring this field, why is it important from a theoretical and applied perspective, the main issues that have been tackled by previous researchers and the questions that still need to be addressed.

The scholarly literature will be reported in three sections; the substantive research that addresses the topic from which the thesis questions are drawn, the theoretical and conceptual approach that the writer will take in addressing those questions, and the methodological approach that you have chosen and why you will use it. Each of these components needs to be justified in and supported by the existing literature, with cited sources and sometimes direct quotations. At the end of this section or early in the next chapter, you present your research questions themselves and describe how your study adds to the field. The questions should follow sequentially from the literature section you have just presented; that is, the reader should be able to say, "Ah yes, I see that this is the next study that needs conducting". **Note that your supervisor may want changes to this sequence. For example, sometimes, the selection of the method and justification for choosing it may be located in the method chapter.**

The style of the literature review should continue on the path described in Unit 1; non-evaluative and objective. It is not an exercise in persuading the reader to agree, but rather setting out the evidence that currently exists in a factual and non-judgmental way. You can certainly report others' controversial and evaluative statements, with full citation and preferably verbatim quotes. This may lead you to justify your specific research questions, but do not tip your hand about what you will conclude until the final sections of the thesis. Lead the reader to understand all perspectives of the issues you tackle, without the use of judgmental statements such as superlatives or emotional appeal.

The literature you present will not be exhaustive. It represents what you were able to find, but not what might have been published about your topic

locally and internationally. It presents a context for the reader to locate your study. It is helpful to assume that your readers are familiar with the overall field of your study, but they need to be reminded of the major trends in the larger field and introduced to any specific studies that relate to yours. The analogy for the literature review is a funnel. It starts broad, with an overview of the relevant literature context, possibly with historical trends, and becomes more detailed as you focus on the studies on which your work will be based. See Unit 5 for how to conduct and report a literature review.

It is completed by the **research questions** themselves: "What I want to find out".

### **Method.**

"How I will do this."

In Unit 6 there is a discussion on how to 'operationalize' your research question; that is, how to turn it into a series of measures, evidence, artifacts and/or transcripts that allow the reader to judge that the resulting evidence that you will present is valid and reliable. The purpose of the method is to allow the reader to decide if the evidence is trustworthy, and not the byproduct of one or another sources of bias.

Bias can occur in each of the sections of the method:

***Participants.*** Your sample of participants should match the objectives that you set out to achieve. If this is a case study, then the sample size might be just one case, but the breadth and depth of that case will address the research questions you pose. As noted above, a case study has strengths in contributing layers of depth and nuance to the investigation, but it cannot address comparative questions such as efficacy of a treatment, or trends in the field. Multiple cases are often used in ethnography and narrative inquiry. When a group of participants with a single defining connection is the focus of the investigation, it may be appropriate to present 3 or more cases in order to draw comparisons and differences among members. On the other hand, a large-scale sample of a broader population of participants might be chosen to address questions about the effectiveness of an intervention or treatment, a trend in the

population (think electoral polls), or the characteristics of one group compared to another.

Sample bias can affect the interpretation of results, and the reader will want to be assured that the chosen participant sample can satisfactorily give the potential answers to the research questions. In this section you can also present preliminary characteristics of your participants, sometimes in tabular form. Particularly in a qualitative study but also in a multi-case qualitative study of participants with a variety of characteristics, a summary table is helpful to the reader. The reader will want to refer back to such a table while reading the results.

***Instruments.*** These are the measures or other mechanisms for collecting data that you will design and possibly test out with a sample of respondents in order to ensure that they will give you the evidence that you seek. They include your interview protocol, if you are intending to interview, any survey, questionnaire, questions for a focus group, criteria for analyzing documents, observation schedules – any ‘instruments’ or set of procedures that will be applied systematically in your research to collect your evidence. If you are using an apparatus, such as an eye movement scanner, or a piece of software on a laptop to which the participants will respond, this too is described here.

***Design.*** A quantitative study might encompass measures and/or apparatus used to conduct the study. The design may be experimental, quasi experimental, or mixed. The reader will be looking for the basis on which your statistical analysis was built and whether it is likely to be convincing in its validity and reliability. In statistical analyses, the reader will interpret the confidence estimates and degrees of error for this purpose.

In a qualitative study, the reader is not looking for the confidence estimates, but is certainly seeking the extent to which he or she can be confident that the evidence is true. This usually means extensive data collection to provide first-hand evidence, followed by some form of authentication by the source. For example, transcribed interviews may have been returned to the interviewee for them to scan, to verify that they represent what the interviewee intended to say.

Note that any steps you take to verify the measures, details of the outcome of reliability estimates, field trials and/or peer reviews can be presented here, or at the beginning of the results chapters.

**Procedure.** The standard for the procedure is that another researcher is given sufficient details so that they would be able to replicate your study with other participants. Your procedure section will be a detailed description of the way the study was conducted, its timelines and the instructions given to participants. Either in text or in appendices, you supply the wording of the invitation to participate, what the participant was told about the purpose and process, verbatim details of the instructions given to the participants, the actual interview questions or the original questionnaire drafts. Then present the way you approached data analysis; the software programs you used for analysis or transcription, and the techniques you followed to analyse the data. If needed, you would also present the ethical certificate in an Appendix.

Note that if you are preparing a scaled down version of your work for publication or presentation, these details are usually summarized, and your thesis cited as the source. But for the doctoral thesis completion, they need to appear in the Appendices in order for the reader to evaluate the veracity of the findings that you will next present.

**Two examples:** In one thesis the author described the widespread resistance of the participants to a new policy that had been recently introduced. Reading the actual questionnaire that was added in an Appendix, however, I discovered that the wording was so slanted that a participant would have been unable to express any alternative opinion about the policy. So, the questionnaire contained bias that inevitably led to the reported findings, a non-starter as a defensible thesis.

In another thesis, the results seemed plausible and important. When I examined the surveys that had been completed by three participating groups, however, I found that wording had been sufficiently altered from one group to the next that any comparative analysis between groups, reported in the results section of the thesis, was not valid.

**Findings/Results.** “This is what I found”.

This is the heart of the thesis and its principal voice. You may want to present the findings in several sections. I generally recommend starting with the ‘housekeeping’ items; the demographic characteristics of your sample, their responses to your request for participation and the resulting sample (if not already in the Participants section), the basic statistics on your measures, the outcome of the validation process for your questionnaires, or your results of pilot tests of your interview protocols, etc.

Use headings that reflected the Table of Contents at the beginning of the thesis, you then move to the major findings.

**Signposts.** Your task is to guide the reader through your results structure. Good writing practices include setting up signposts in the form of headings that reflect the contents of the section, referring the reader to appendices that contain more detailed data, and reminding them of the variables you are presenting and their link to the method and literature. These are just signposts however – not fully recapitulations of the literature and method sections. If you are writing a large and complex thesis, reminders of where links were last encountered or where they will be taken up will help the reader to navigate. Inserted guides and signposts take the form:

“The reader will recall that, in the Method chapter, the data were organized by.....”

“As described in the Literature Review in Chapter 2, in the section on ‘Review of methods used in the field’, the technique of [*fill in the blank* - thematic analysis (Braun & Clarke, 2006)/ biographical interviewing (Polkinghorne, 1998)/ content analysis (Neuendorf, 2002)] was described as a possible technique for analyzing the data”.

You can also refer to the Table of Contents, its sections and page numbers, that

you will supply after the writing is complete. Your thesis is a communication and helping the reader to access it will be part of your success.

Should you write the results first? Some colleagues argue that the results chapter should be the first chapter that you write before any other part of the thesis (after the proposal, that is). They argue that the results will dictate what is important in your thesis and therefore allow you to craft the literature and questions to match the results. I'll argue that there isn't a single best sequence to follow. Writing will involve going back and forth around your drafts as the thesis emerges. There is a circularity to refining your thesis - it's one of the challenges of writing a thesis, because it requires that you get all the sections into a line and finish with a single, seemingly logical sequence, all of which lead the reader to your conclusions in the discussion. Don't be disheartened at this stage - every thesis author faces the challenges of presenting in a seemingly normal, linear sequence the results of a non-linear, iterative and sometimes chaotic process of analysis and interpretation.

## **Discussion.**

“Why does it matter?”

In this section you tie the bow, bringing the telling to a full circle. It can be your grand finale. You bring together the voices of your participants or evidence, your initial hunches and what the literature predisposed you to ask.

This section of a thesis can be difficult. On the one hand you have set out all the evidence and the reasons why they are important as revealed in your results chapter, and since you are thoroughly immersed in your thesis, the point that you have reached feels self-evident. You may not be able to "see the wood for the trees". On the other hand, you don't want to merely summarize again what you did and what you found. You must aim to tell your audience what you thought about what you found, and to tie your findings to the speculations and hypotheses presented in the literature review section of your thesis. This is where you put the importance and significance of the results of your research

into the context of the literature.

Take a step back before tackling this final – and important - chapter. It is an opportunity to see your thesis in the context of the larger literature, the arguments and conflicts in your field of study, and to locate your study among them.

This is where “I thought this would happen” can be stated. It may start with a summary, but like the bowtie, it must now be connected to the literature and the context from which it came. This is where you can, in an objective but somewhat persuasive way, interpret your findings in light of the literature you presented earlier, and this can include bringing in your own perspective. "See, I thought this would happen!"

### **Abstract.**

"In a nutshell".

This should be almost the last thing you write. That is because you need to have such a profound and comprehensive grasp of your thesis that you can now present the essential purpose, structure and findings of your thesis in a very few sentences. This can be a challenge. It requires you to step back and see in perspective the most important aspects of your thesis. Since it is the first piece of writing that most of your readers will encounter, it needs to set the scene for your thesis so that readers know the subject that the thesis relates to, understand the importance of your results and why they will accept your interpretation. It must therefore be concise and brief, factually correct, but also point to the context and importance of your study and its main findings.

The APA style manual suggests how to do this in 120 words, which is the requirement for a scholarly publication. Most academic institutions allow longer abstracts; – check the requirements for your specific university, if they exist. Otherwise aim for about 350 words. Further guides and an example are presented in Unit 9.

## **Table of Contents and Acknowledgements.**

These are the very last thing to write. Before your thesis is submitted you will create a Table of Contents, to be inserted at the beginning of the thesis before your page numbering begins. Be sure to look at the section in the APA style manual to design the headings for your thesis. In fact, at the risk of repeating myself, I recommend that you take some time to learn the requirements right at the outset of your writing so that, when you create the Table of Contents, you only need to paste the headings and page numbers into the Table of Contents.

Other formatting requirements are also best learned ahead. The format for Tables and Figures used to be specified for the type setters to place them correctly during publishing. The author presented them as separate attachments at the end of the thesis or paper, so that the typesetter could insert them at an appropriate place in the text. Technology has surpassed that, but there is still a way to introduce and present tabular material, figures and charts. Similarly, Appendices will include the actual interview protocol or the survey that you used, the directions that you gave to participants from your letter of introduction, and the directions they received when commencing their roles, so that your readers can verify that the participants understood their task in the way that you describe it in the body of your thesis.

If you have used citation software, you will want to check that it has completely and correctly included your citations. Otherwise, it is laborious but necessary to check by hand that every citation in the document matches its reference by author names and year in text, and if quotations are used, by page numbers.

Before you submit a draft proposal or thesis, proofread it thoroughly. Apply a final spell check, and grammar check if needed. Sometimes a professional edit may be needed to complete the process. The Acknowledgements – the page immediately following your thesis title page. It does not have to be written until **after** you have defended and passed your thesis defense. It is added when all corrections and changes requested by your

examination committee have been completed, and when you are ready to submit it to the binders, and to the Archives that store it for others to access.

## **References**

As with the Table of Contents, knowing the required format for citing sources and then including them in your reference section is important, and best learned early in the writing process. Again, use the APA Manual of Style as your textbook for how to cite sources and how to list them. Nowadays, electronic sources are also listed and linked.

As noted previously, it is a good idea to start your thesis writing with a subscription to one of the software packages that organize and manage your reference materials - Endnote, Zotera, Mendeley. There are several on-line guides to help you select the package that is right for your needs, but your local librarian will likely be your best guide and can tell you which packages are supported through your own university library. Recently, a [student demonstrated](#) to us how the qualitative data organizer software program, NVivo, can also be used as an organizer for references (See Also: [Guide](#) on using NVivo for a literature review).

## **Appendices**

With a numbered and paginated list at the beginning, the Appendix contains two important sets of material: - -- the primary material that supports your thesis, such as the instruments you developed (surveys, questionnaires, interview schedules, etc.); - the evidence that you met the ethical requirements for the study. This includes copies of the letters that set out the terms of your study that you sent to any participating agency such as a school board, and to the participants themselves. Your certificate of ethical review approval may also be here.

And a reminder. Your thesis needs to set out and clearly show that what you have done is worthy to be granted a doctorate, to convince your supervisor

and committee that what you have done is new and not obvious from the literature. This is not an exercise in persuasion and rhetoric but an exercise in clear concise logic. You can do this!!!

## UNIT 4: Planning your study

### Key concepts previously encountered in Unit 1:

- Epistemological differences - Alternative approaches to thesis development.
  - The interconnected-ness of the elements of a thesis
  - Characteristics of an empirically-based thesis -
  - Your goals
    - Defending a thesis means that your evidence – your data – will speak for you.
  - Meet the reader - the audience for whom you write.

### Key concepts previously encountered in Unit 3:

- The elements of the thesis are linked together like a bowtie:
  - Right ribbon: **This is what I want to know:** The question – and sub-questions
  - Right bow: Literature review. **Why I am doing this.** This leads to the Research questions. **What I want to find out.**
  - The knot: Method. **How I will do this.** The method holds your study to account
  - The left bow: Results or Findings. **This is what I found:** This is the voice of your thesis
  - The left ribbon: Discussion. **This is why it matters.**
- Abstract. **In a nutshell:** The last thing you write

### Summary of Unit 4:

- Where do I find my topic and research question?
- What sort of study should I do? Quantitative or qualitative?
- Or mixed methods? Or alternative?
- Introduction to a technique for developing your research question
- How much should I address – the sun, the moon and the stars?
- Evaluation studies can be tricky
- No significant findings?
- The "So what?" question

In this unit we explore planning your study and related topics. A chunk of the unit is spent on the important issue of identifying the places to look for a good question, and then breaking the question down into its operational or measurable parts. By the end of the unit, you should be able to formulate your research question, and to have started identifying the evidence that you will need to gather in order to answer it.

### **Where do I find my topic and research question?**

How do you come up with a thesis topic and research question?

Clearly it needs to be a topic that you are interested in, even passionate about exploring, because it will need to sustain you through a long journey.

There are several ways to look for your topic:

- Through a grant-supported project that already has a research history. Check the research projects in your department and the profs who are in charge of them. This is frequently a good route to go, since there are defined topics that need to be addressed, and a well-developed research team will give you support. The senior researcher will be on hand to assist you as well as allocate a piece of the data to you and may well become your primary supervisor. Please note that, if you choose this route, you will need to be familiar with the ethical requirements that have been set for this project, and to abide by the ethical conditions for the use, storage and disposal of data, and for confidentiality of sources, participant identities and permissions to use the data.
- One of my favorite approaches is to look for a recent review article in the field I want to study. Sources such as “The International Handbooks on...” or “Annual Review of” often contain thorough reviews of the history and current status of a topic, and they usually point out the research questions that need to be addressed. There are several collections of reviews, each a

compendium of research in a field or topic. Check with your librarian for a review of a topic you want to investigate.

- During your coursework you will have been exposed to controversies in your field. There will be rival arguments to support opposing claims. This is a good source for a thesis study; presenting evidence that addresses the controversy and adds data to the claims. For example, my own thesis was written at a time when there was a major political controversy about whether the IQ of black Americans was on average lower than that of white Americans. One possible 'intervening variable' (spanner in the works) was that economic status, an environmental or nurture variable which correlated with race in the U.S., was possibly responsible for any differences in IQ. My test was to take two groups of Canadian children, both Caucasian, one came from a low-economic area and the other from a high-economic area of a Canadian city. I replicated the black-white study by administering IQ test subscales to schools serving high- and low-economic communities and found the same results! Conclusion – IQ is not solely race-related, if at all. Did I have a predisposition to support one side of the argument at the outset of the thesis? Indeed, I did, but I could only express it at the end of the thesis when I had presented my evidence to my readers that it was borne out by the findings (see unit 1). The study led to important new questions: How are IQ subtest scores related to economic status, and what do these imply for cognition, instruction and how children learn? What factors of economic status lead to differences in the response styles of children?
- Look for an unfinished or outstanding argument. Most writers of academic scholarly papers in the literature point out the shortcomings of their studies. It's one of the rules of academic publishing. You may read a paper and see a glaring omission that may affect how you interpret the findings. Those shortcomings are fertile ground for a thesis topic if you can figure out how to address them in your own study.

- Rival arguments in practice lead to important research studies. The practices in a field may be divided by different views about which treatment (intervention, instructional direction, etc.) is the best to address a practical problem. For example, the "reading wars" dominated psychology research in the late 1980s: "Do young readers learn to decode grapho-phonemic units (sounds) before decoding printed words, or do they learn to map print words onto meaningful sentence units before decoding the phonemic units?"

In the second part of this unit, we show how to break down a question like this to create a viable study. Such studies are usually *evaluation-based*. That is, they compare groups, sometimes over time and with or without an experimental treatment or intervention such as a training program. Evaluation studies are often selected by thesis candidates because they are important for societal, theoretical and/or policy reasons. There are however some requirements for evaluation studies that will be addressed later in this unit.

From the literature that you have collected, analysed and synthesized, you may be able to represent them as a table of issues in the field, with their sources and notes about the key variables. Such a table then allows you to see what the variables and effects are that you will need to take account of in your own study.

Here is an example of a summary table of key concepts from the literature supporting a study that addresses the formation of professional identity and the impact of practicum experiences for nursing trainees.

***Issues in the literature that addressed a research question:***

**Question:** How did nurses who graduated between 2014 and 2019 form their professional identities as nurses? Specifically, how did their practicum placements during training contribute to or detract from their professional identity as nurses?

### Nurses' Professional identity

Image of the profession: Awareness of historical status and roots in religious societies, medicine, gender hegemony

### Nurses' self-concept

- Image of self as a qualified nurse
- Personal and experiential strengths entering the profession
- Self-confidence - developing confidence
- Self-motivated

### Skills objectives during practicum

- Focus on 'fitting in ', task completion vs. critical reflection
- Independent decision making
- Being professional
- Using practice-based evidence
- Using research in practice
- Impacting patient health

### Practicum experience

- Breadth of practicum experience
- Awareness of socio-political factors
- Skills
  - Problem solving
  - Integrating theory/practice
  - Interpersonal
  - Professional

### Clinical supervisor characteristics

- Enthusiasm
- Understanding

- Approachability
- Professional confidence
- Facilitates – self-reflection; critical analysis; networks of peers, experience
- Stepping in or out as needed

#### Difference of opinion in the literature

Gillespie (2005) – “great teaching has little to do with techniques and much to do with the person” vs. Chow & Suen (2010) “focus on clinical learning and not befriending”

#### Nursing Supervisors’ assessments and grading practices

- Grade inflation
- Grade consistency and credibility
- Grade explained
- Was there a chance for reflection? Repeating practice?

#### **What sort of study should I do? Quantitative or qualitative? Or mixed methods?**

I’ve heard many times “I want to do a qualitative research study because it’s easier than a quantitative one with stats and math.” Not so! It’s not that one is easy and the other not – they are different! They address different questions. They cannot be compared as methods because their intent is to provide vastly different forms of data, but they both require that your thesis question yields evidence that can convince the reader.

Quantitative studies rest on exploring a wide sample, representing a population, on one or a few variables (factors that may cause differences to emerge among the sample participants). The studies ask a question that is answered by a wide and shallow sampling of a group of cases (people or instances). For example, they are the basis of epidemiological studies of the effects of drug treatments and medical procedures, etc. They address questions like “Is group A different from group B on characteristics X, Y and Z?” “Did group

A benefit more than Group B from the training programs that they did or did not receive?” Hence quantitative studies are important for evaluating treatments (the differential effect of an impact over time of the presence or absence of a variable, a training program, an experimental intervention). They require that samples be of a sufficient size; the rule of thumb for evaluating a treatment given to one group but not to a second is a minimum 30 members per group for a single comparison, more with an increase in the number of comparisons to be made. There are formulae for finding sample sizes that can reflect a population, such as [Cochran's<sup>3</sup> sample size formula](#), which depend on the desired level of confidence one sets for the results.

Qualitative studies examine fewer cases in greater depth and with acknowledgement of the complex characteristics that surround each case. They may be studies of a single case, documented over time or phases. They may be the case of a group that is investigated in depth to identify its characteristics. As such, qualitative studies don't usually lend themselves to evaluating the effects of a training procedure, intervention or treatment. So, if you want to dig into whether a program, a treatment, or a type of intervention works (i.e., an evaluation of the effects of some treatment is effective), qualitative study is likely to be a weak tool to address your question. It will yield anecdotal data, which may be what you want, but it won't be generalizable beyond the people or cases that you have studied; that is, it will not be applicable for other cases.

It will give you a deep and rich profile of the events, people or cases you are exploring but with limited applicability to other scenarios. If this is the question you want to address, this is your research approach.

If length of thesis is a criterion for you, quantitative theses do require that you get to understand your data as statistics. The main information is often

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<sup>3</sup> Bartlett, J. E. II, Kotrlík, K.W., Higgins, C.C. (2001). Organizational research; determining appropriate sample size in survey research. *Information Technology Learning and Performance Journal*, 19(1), 43-50. Retrieved January 1 2020 from [citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.486.8295&rep=rep1&type=pdf](http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.486.8295&rep=rep1&type=pdf)

communicated through tables and figures which condense the presentation. Generally, such theses are therefore shorter and more concise than qualitative studies which often require that you support your claims with copious amounts of first-hand evidence, for example excerpted verbatim transcripts of interviews or quotations from documents and other sources. The important point here is that your research questions should determine the type of study you conduct, and not your preference for a method.

### **Introduction to a technique for developing your research question:**

Try this technique with your own research question. Write down your question along a left-hand side of a large sheet of paper. To begin, each noun (with its adjectives), and each verb needs a line of its own. On the right side of the sheet begin to map out how each word or phrase can be operationalized; that is, what will it look like when you are collecting evidence about it. How would you recognize each of the terms in your question if you were observing them? This is a strategy to move toward identifying the variable characteristics of each of the main elements of your research question as part of your method of enquiry. Note that it isn't yet finished – you may still need a third column in which you define the participants/cases/events of your study and add the measures/criteria that will answer the question in ways that the reader can verify.

See **Unit 6** for an example of how to do this in order to develop your question further.

### **How much should I address – the sun, the moon and the stars?**

Often a thesis candidate sees this work as their 'magnus opus' – their major production, and as a result they try to include every possible spin. As a practitioner, they see the complexity of an issue, and the contexts in which it takes place. They want to address multiple questions rather than limiting their subject pool, controlling their data set and eliminating some of the variables. In short, they want to investigate the sun, the moon and the stars.

It is commendable that thesis writers have a vested interest in their topic and that they understand the complexity of their field of practice, the breadth of the research and its politics and nuances. This will sustain you through the long data collection and writing process. It is not advisable, however, to try to undertake a study that addresses multiple elements. Even a small field-based sample will already be sufficiently complex to limit the investigation to a few cases, variables or sample characteristics. As we see in the next unit, research questions grow, so reducing your research question to a main question with possibly one or two sub-questions will usually be sufficient to complete the study accurately and with clear findings. But in any case, you may want to see yourself as a researcher with long term career prospects; one who builds his or her field of research in increments, addressing each new question as it emerges from the last. So, make the thesis the first question in a potential series; one that you will be comfortable investigating and defending. One star now, the firmament later.

### **Evaluation studies can be tricky**

A word about evaluation studies. I often run into thesis proposals that are evaluations of a treatment.

They take the form of:

“If I do A and B (the treatment), will the learners, recipients (subjects) benefit?

Or

“What is the outcome or effect of this intervention (e.g., instructional approach) or treatment (e.g., added resources) on how XYZ (the outcome or dependent measure) happens? In these types of studies there are two time points, 'before', when a baseline is established for the dependent measure, and 'after' to see if change has occurred. In between the two time points a treatment or intervention is administered. There may be a comparison or control group that is given the same dependent measure at both the before and after points but is not given the intervention. Sometimes authors might not recognize an evaluation study for what it is. They may therefore select a qualitative approach or a case study as their method, in the expectation that any changes in their subject(s) can be

attributed to the treatment. Drawing generalizable conclusions about a shift that can be attributed to a cause cannot be done, especially with small scale studies. Too many factors contribute to changes, and chance alone, or the impact of a researcher studying a participating group (the [Hawthorne effect reference](#)<sup>4</sup>) could explain any changes that are recorded.

If you have a promising technique for doing something, and you believe it has an impact on a group of participants, you are inevitably going to need to design an evaluation study or a study that allows you to infer cause and effect<sup>5</sup>, such as a longitudinal study. In order to demonstrate that your approach (treatment) has a significant impact on its recipients, you may require a comparison or control group to show that, without it, the same gains are not made, or at least are not significant or attributable to chance.

This brings in the inevitable "Hawthorne" or "Halo effect", in which individuals modify an aspect of their behavior in response to their awareness of being observed. People will show changes in behaviour, not directly as a result of the treatment but because they are receiving attention, or because their behaviour is being adapted to please the investigator.

Do not be discouraged however if you want to undertake an evaluation study. There are several ways to counter the effects but know that you will be moving toward a possibly quantitative study involving pre- and post-testing of a treatment, or a longitudinal comparison, and that it may require a time study in which you compare the progress of two groups or more over periods of time when they are both receiving and not receiving the treatment.

A mixed method study is a great way to combine both the broad survey of a quantitative sample, and the in-depth qualitative exploration of one or more cases drawn from the sample.

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<sup>4</sup> Retrieved January 1<sup>st</sup> 2020

<sup>5</sup> West, S. G. (2009). Alternatives to randomized experiments. *Current directions in psychological science*, 18(5), 299–304.

Lanza, S.T., Moore, J.E. & Butera, N.M. (2013). Drawing Causal Inferences Using Propensity Scores: A Practical Guide for Community Psychologists. *American Journal of Community Psychology* 52:380–392 DOI 10.1007/s10464-013-9604-4

## **No significant findings?**

This is one of the scariest prospects for a thesis candidate. After all the work, your data fail to show the differences you anticipated. What if the results don't work out, as in the case of one student whose subject for the thesis case study was a teacher designated as exemplary? However, the teacher proved to be less than exemplary when the student began in-depth observation and recording.

This can indeed be disheartening. The best strategy is to revisit the premise of the thesis and ask what came out of the study that is surprising – and how that can become the core of the research question. When you find results that you had not anticipated, you may need to explain them in your thesis by grounding them in a revised review of the literature. But finding the unexpected is a bonus - it represents a unique contribution to your field and could be an excellent basis for a defensible thesis.

Sometimes the results represent a more nuanced or complex interpretation of the theoretical or conceptual base than you anticipated. Do not be disheartened here either - the results that you present and interpret offer a new level of sophistication beyond the original premises and the literature on which they are based and could also support a strong contribution to the research.

Some writers of journal and popular articles and books present their conclusions as if they were universal truths. They hold to a particular perspective, and, while their findings are open to interpretation, they strongly believe in the truth of their conclusions. One concept of science is that a theory only approximates the truth until a new theory or hypothesis comes along to disprove it. Take care when adopting these sources that you do not buy into the 'truth' of their conclusions. You may certainly ask as research questions whether the perspective they present are true for your particular research setting. To give an example, one student presented a perspective that was well supported by a published author that leadership is a male-dominated activity that depends on the language of combat and war and the interactive styles of men to be effective. The researcher then recorded the leadership conversations of a large sample of

female leaders as they undertook their roles as heads of their organizations. Only one of the conversations had any evidence of language that could be attributed to war, battle or armed conflict. Instead, these highly effective women used a great deal of language of reaching consensus and compromise, meeting individual needs and resolving conflict. Initially the thesis writer was disheartened, because the premises on which the study was based did not hold. Once the writer had mulled the findings, however, it was clear that this was an important study not only because it refuted the claims of the research on which it was based, but also because it enabled the writer to present an alternative argument for the way in which women leaders conduct their work. This entailed revisiting the first few chapters of the thesis, making the hypotheses more tentative, and adding literature that suggested that there may be an alternative way to view leadership.

***The findings are the voice of the thesis.*** There are two ways to handle a disparity of this magnitude. The theoretical and conceptual development that leads to those findings may need to be altered to accommodate the findings. Alternatively, the writer may contest the contributing literature in the discussion chapter with a thorough analysis of what emerged from the results.

### **The “so what?” question.**

#### *Trivial findings: a common thesis downfall*

You will meet this question in a variety of forms throughout this book. It has to do with findings that are trivial and that don't add to the overall knowledge base in the field of study. After a long and detailed exposition of a candidate's thesis at the oral defense, a favorite question from an examiner is “So what?” The question asks the candidate to locate their most significant findings in the literature and in the wider field of application or practice. Your objective is to be able to tell the examiner that this is not a trivial finding but that it has value as a contribution to the field and adds an increment of knowledge to it (via the comprehensive literature review that accompanies your study).

Here are three examples that I have encountered of the 'so what?' question:

*Example 1:* The candidate has selected a well-developed, standardized test to explore the characteristics of a large sample of subjects. Let's say it's an aptitude test given to children. Before the test is administered a great deal of organization, ethical reviews and permissions are collected. The test itself is then administered under rigorous conditions. The results show that the children's scores vary on the test, representing a normal distribution of scores, with the largest number scoring the median mark. The researcher then draws conclusions about the variation in the students, and how they are comparable in performance to the students on which the test was normed.

So what? The findings really say little about the students who took the test, because they are reflecting how well the test was originally constructed. This test administration, despite its cost in time and effort, provides little more than a test-retest reliability statistic of the original test's construction. The children are performing as they would be expected to perform. What more might the researcher need from this study in order to add an increment of knowledge to the findings?

*Example 2:* The candidate administered parallel questionnaires to three groups; teachers, parents and students. The thesis examined the main themes in each group's responses. Even though there were ostensible differences in the patterns of responses of each group, the candidate did not address the differences between groups in the results. After hearing the separately reported results of each group, the examiner asked "So what? You have clear differences between your groups, but to what do you attribute them?" The different positions taken by each group were predictable in the context of the study. They were the centre of the results, but the examiner did not think they were contributing anything that wasn't self-evident – hence the "so what?" question. The examiner was pressing for the candidate to recognize the need for another step that the candidate

had not taken; to examine why the prevailing differences occurred between the groups, perhaps by interviewing or otherwise following up with individuals in each group who took opposing positions. This is where a mixed methods study shows the benefits of combining the two approaches; quantitatively-based broad description of a population followed by in depth qualitative case studies or interviews to shed light on the population trends.

*Example 3.* In a paper sent for review, the authors collected a large sample of teacher data on classroom practices. They asked teachers to rate on a 5-point scale a list of classroom practices. The classroom practices consisted of several subscales, each of which could result in a subscale score. They also asked an expert panel to rate the same practices. Each teacher was then given a score of the difference between their ratings and those of the experts. The difference scores (degree of correspondence to the experts) were then divided into 2 groups (i.e., close or not close to the experts' rankings). This was fine, until the researcher carried out comparisons between these two groups on the subscales of teaching practices. By incorporating the subscales into the main independent measure, (high or low correspondence with the experts), the dependent measures (the subscale scores) were confounded. Any differences could be attributed to the initial division of the group on the overall score and not to subscale differences.

Step back from your findings and ask what they mean in the larger context. It may lead to a second analysis or a sub study and could be crucial in supporting the conclusions and inferences you draw in your discussion of the findings.

There are other “so what?” questions. You have undertaken this research, reported a good study. What is the contribution that your study is making to the

literature? In defending it, you will be asked to demonstrate that it is an original and worthwhile contribution in the overall context of your field of study.

# UNIT 5: Locating your study in the literature - The literature review

## Previously in Units 1 to 4:

**Unit 1** -The interconnected-ness of the elements of a thesis

Characteristics of an empirically-based thesis -

Scholarly - based on verifiable sources

Veracity-validity vs. 'fake news'

**Unit 3** -Elements of the thesis:

Literature review - "Why I'm doing this"

The connected nature of the elements - like a bowtie

Writing with the APA Publication Manual of Style

**Unit 4** - Where do I find my topic and research question(s)?

Quantitative, qualitative or mixed methods? An evaluation study?

How broad should my study be?

No significant findings and the "So what?" question.

## Unit 5 Summary:

1. What is a literature review, and why is it important?

2. What should a literature review contain?

The funnel:

The leaf green layer: The context.

The lime green layer: The literature that is tangential to the research questions of your study.

The yellow layer: The conceptual and theoretical framework.

The orange layer: The methodologies used to explore this topic

The red layer: Your research questions.

3. Why scholarly material?
4. Theoretical framework.
5. Conceptual framework
6. How far back should you go?
7. Statement of self-disclosure: Introducing your take on your review.
8. How do you construct a lit review?
  - 8a. Finding articles – what are you looking for?
  - 8b. How do you search for relevant material?
  - 8c. How do you annotate and catalogue each article you read?
  - 8d. How do you organize the material?
  - 8e. What methods have been used in the field to tackle my research problem?
9. A word about plagiarism, and the ethical conduct of a researcher.

"Acquiring the skills and knowledge required to be education scholars, able to analyse and synthesize the research in a field of specialization, should be the focal, integrative activity of predissertation doctoral education" (Boote and Beile, 2005, p. 3)<sup>6</sup>. Although Maxwell (2006)<sup>7</sup> begs to differ, there is undoubtedly a central role for the literature review in the doctoral thesis/dissertation.

### **What is a literature review, and why is it important?**

The purpose of a literature review is to establish what is known in your field of study, and what methods have been used to investigate it. It also lets your reader know that your particular study will make a novel and important contribution to this field.

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<sup>6</sup> Boote, D.N., & Beile, P. (2005), Scholars Before Researchers: On the Centrality of the Dissertation Literature Review in Research Preparation. *Educational Researcher*, 34(6), 3-15. doi/pdf/10.3102/0013189X034006003. Retrieved December 7th 2019

<sup>7</sup> Maxwell, J. (2006). Literature Reviews of, and for, Educational Research: A Commentary on Boote and Beile's "Scholars Before Researchers". *Educational Researcher* 35(9), 28-31.

So, why include one in your thesis proposal, thesis or paper?

The literature review contains the scholarly sources that have previously been reviewed and accepted by peers as being credible and justified. The point of the literature review is that you describe and evaluate the books, journal articles, conference presentations and proceedings, and theses or dissertations in your field – in other words, in the acknowledged scholarly sources that impinge on your study. Further, you integrate the material that you describe in relation to your own study. You show how the various studies relate, analysing the themes, synthesizing the emerging findings and the conclusions that have been offered, and providing a critique of what is missing, misleading or wrong. This sets the context for understanding your proposed study, and for positioning your study in relation to the larger body of work in your field, thereby making the case for its importance. You complete the review with your research questions; the questions that need to be addressed to rectify and extend this inquiry.

A literature review is not a laundry list of everything you've read, nor is it an annotated bibliography. It is your synopsis of the relevant publications and how they connect, as filtered through your perspective. Once again, it communicates with your audience. It tells readers where your thesis study lies in relation to others' work, and it leads the reader to agree with you that your study, and the perspective that you take in examining it, represent a logical next step forward in investigating your field.

As a part of a thesis proposal, the literature review also provides proof to your examining committee that you have the scholarship, knowledge and research and presentation skills to undertake a thesis.

There are broadly two types of literature reviews:

1. *Contextual*. This situates your study in the literature both in terms of content and of the methodology that you use to investigate it. By telling the reader what the context for your study is and what has been done before, you

are making the case that your study will contribute to the broader field. A contextual literature review is therefore not a review which summarizes the field, but it is focused on locating your study in its broader context. Think of a Venn diagram; topics that intersect to pinpoint the salient questions. The sources of information most closely related to your work will be given front-and-centre status in your review. More tangential, historically relevant and interconnected articles will be mentioned also, as will a section on the prevalent methods used to investigate and analyse information in your field. You will also have a section on the theoretical basis for your study, and on the conceptual underpinnings that you apply to how you conduct the study. You are telling the reader, first, what is known and how the field relates to broader concepts, and second, what methods and theoretical approaches have been used to study it.

An important part of the literature review is to ensure that the study you want to do has not yet been done. As we said earlier, a thesis must come up with a new or novel contribution to your field. This needn't be a huge contribution, but the literature review should indicate how your thesis is adding to the existing field. In order to justify your contribution, you begin by getting to know the field.

2. *Comprehensive summary (review, meta-analysis)*. The second type of literature review is a summary of published research in a new or existing field, or a compendium of work that lies at the intersection of two or more fields.

Typically, your doctoral thesis will not have this kind of a literature review, unless you are conducting a meta-analysis of hitherto uncollected studies or showing the relationship between two or more previously unconnected fields. You may, however, want to spin off a publication by turning your literature review into a summary or review paper.

If you are undertaking a Master's thesis, this kind of thorough, up-to-date review of the literature may be an acceptable Master's thesis for your program. It may perhaps be supplemented by outstanding questions, a draft proposal, method or measure, or a pilot study to explore possible next steps,

## What should a literature review contain?

You may already have encountered sections about the literature review in previous units of this Guide. In unit 2, under the heading “Read, read, read” I used the analogy of throwing a stone into a pond. Your research question, once developed, is the point of entry into a pool of literature. As you read, you encounter further literature that both takes you back to previous work in your field, and points to linked and peripheral publications that inform your field.

An alternative metaphor is that of building a wall. Your study - one brick - is located on top of the existing studies that make up the body of knowledge in your field. Your study is like a brick in a wall or node in a network that you are building. Each study is linked to the others, some tangentially and others peripherally. Your task is to highlight your brick or node in the larger building, first with context and history of how it fits into the overall wall, and then with detailed references to the neighbouring studies.

Boote and Beile (2005; op.cit) offer a rubric for developing a good literature review. Based on a scheme by Hart (1999)<sup>8</sup>, they propose five main categories of criteria, each of which has a rubric scale to be used to evaluate the comprehensiveness of the review:

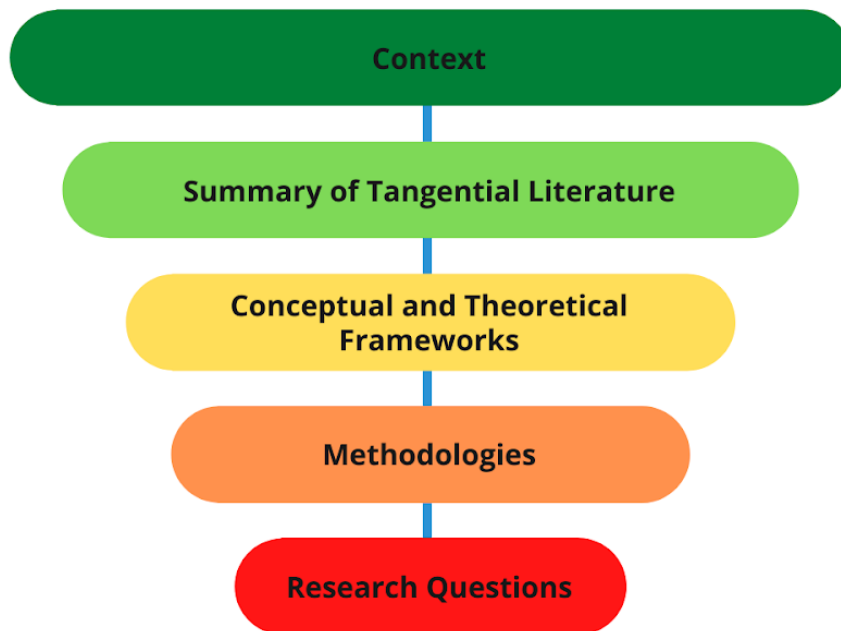
1. Coverage
  - a. specify criteria for inclusion or exclusion in review
2. Synthesis
  - a. Places the topic in the broader literature or historical context
  - b. Distinguishes what has been done in the field from what needs to be done
  - c. Key vocabulary defined
  - d. Articulates important variables and phenomena relevant to the topic
  - e. Synthesizes and gains a new perspective on the literature
3. Methodology

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<sup>8</sup> Hart, C. (1999). *Doing a Literature Review: Releasing the Social Science Research Imagination* (p. 27), London, SAGE Publications.

- a. Identifies the main methodologies and research techniques; their advantages and disadvantages
  - b. Relates ideas and theories to methodologies
- 4. Significance
  - a. Discusses the practical significance of the research question
  - b. Rationalizes the scholarly significance
- 5. Rhetoric
  - a. Written with a consistent, clear structure that supports the review.  
(Boote & Beile, 2005, p.8).

You can think of the literature review as a funnel that leads the reader from the broad context, through a number of related studies to the topic your study will investigate. It also justifies the method you propose to use by showing how your research will produce the kind of information that will answer your main research question.



***The leaf green layer: The context***

At the top of the funnel, you introduce the context for the study. It is a short segment that sets the broad context of your study. You describe the overall topic and why it is important to investigate it. This may include not only referenced sources, but topical issues that make this study relevant and important in society and in your area of interest. For example, you can refer to the media, or to policy documents or speeches made by others to demonstrate how your study has topical and social importance.

Be careful, though, not to use persuasive or value-laden statements when you do this, unless you are quoting a person's or group's publicly-available written or spoken remarks verbatim, which you must credit to their sources. For example, you may want to assert that "literacy *is* the single most important accomplishment of early schooling". You cannot make this assertion unless you are quoting an expert in the field. You can however suggest that "literacy *may be* one of the

important outcomes of early schooling", a hypothesis, postulate or 'thesis' that leaves open the possibility of investigating it further in your study.

***The lime green layer: The literature that is tangential to the research questions of your study.***

Here you develop your summary of the related literature. What studies have investigated this topic and with what outcomes? Give enough information about how each study was conducted, with whom, and what the findings were, so that the reader does not have to go back to your cited source in order to verify that it is a relevant source for your study. You may also want to comment critically about the study; for example, the difference in the population from the one you want to investigate, the sample size, a possible alternative interpretation of the findings that were not presented by the author, etc.

At the end of describing the various sources, summarize the state of the literature. What is needed to clarify, extend or reinterpret the evidence published to date?

***The yellow layer: The conceptual and theoretical frameworks.***

Most thesis committees expect to see a 'theoretical framework' section. This may not be as complex as it sounds. While some fields of study depend on testing complex theoretical models, most depend on the conceptual structure of one or more authors' writing. For example, Cummins (1979) posits a language facilitation theory that second and subsequent language skills may actually enhance first language acquisition and use. This theory has given rise to many researchable questions about the acquisition of first, second and subsequent languages. As another example, you may want to base your investigation on Bourdieu's concept of 'habitus' ("the means by which systems of domination persist and reproduce themselves", Seiler, 2002). By defining 'habitus' and referring to its source, you are telling your audience that you will approach the study based on the assumptions of this theoretical framework. Alternatively, you may inform your readers that you will view your findings through the lens of critical pedagogy, or critical feminist theory, or another source that has gained traction as an interpretive framework in your field. Perhaps your theoretical framework may be grounded in the quantitative assumptions of statistics; that a relationship between two or more variables has

occurred, and that it is unlikely that this relationship occurred merely by chance alone. For example, you may ask your readers to accept that the relationship between two variables or measures or events that are correlated is likely to have been found by chance alone only 5 in 100 times ( $p < .05$ ), and therefore that the chance of being wrong is so small that you are concluding that the relationship is real. More about conceptual and theoretical frameworks below.

***The orange layer: The methodologies used to explore this topic***

What research methods have been used to examine phenomena and variables in this field? What have the limitations been of these methods (e.g., adequacy of sampling, transparency of measures, limits of generalizability, statistics of reliability of measures, etc.), and what is needed to ensure confidence in any new findings? In this section you can present a justification for your choice of method and the analyses you intend to apply to your data. For example, you may be using narrative enquiry and will cite your sources for how this approach suits your qualitative approach. Or you may suggest how the design of your study merits quantitative analysis and what you expect you will be able to ask of the analysis.

***The red layer: Your research questions.***

At the bottom of the funnel, you summarize the main issues that you have raised in the literature review. At this point, your specific research questions should be presented and should seem to follow naturally from the funnel material that precedes it.

**Why scholarly material?**

Why not newspaper articles, Facebook entries or Wikipedia? There is a long tradition in scholarly writing that work can only be published when it has been reviewed by a group of scholarly peers and found to meet the standards of objectivity, accuracy, analytical and reporting precision. Indeed, editors of journals and other scholarly sources go to great lengths to describe the peer review process and the individuals who peer-review the articles submitted. In general, other sources in our world of “false news” cannot be trusted as accurate and are

therefore not used in scholarly writing. However, this is not a hard rule; some dissertations may well draw upon popular press, social media and other sources in addition to the scholarly literature as part of grounding the study to be reported. Even within the scholarly literature, there have been eye-popping cases of fraudulent data that were reported, cited and re-cited in scholarly publications. Because of this, you are encouraged to only cite material from its original source, and not from an intermediate author's interpretation of it.

In any case, the most trusted sources are the ones that you are usually expected to cite in order to support your work and to frame your research question in its literature. Further, the veracity of sources is increased if there are several of them pointing in the same direction. Just as we are urged not to take the 'news' we read in social media at face value without also checking other sources, so in scholarly writing we produce the evidence published from multiple sources where possible, to establish its veracity.

You may wonder whether the scholarly source rule makes your research harder to undertake. After all, if scholarly sources have already been peer reviewed, how will you be able to find an argument, gap or controversy to justify your own study? In fact, the conventions of publication help you to locate your own study. Often peer reviewed journal articles have to include statements of their limitations – what the author was unable to control for, or how the context of the study might limit how the results are interpreted. This may lead you to find your thesis question in such a source. Other ways to find your question are examined in section 7 below.

### **Theoretical framework**

When students are required to build a theoretical framework into their proposals, they are often perplexed by what seems to be required. Do they have to find a model or structure in the existing literature that shows how their study will hang together? Do they have to build one themselves, using a flow chart diagram or equivalent? These are likely to be the case only in a few instances. How far back should they go?

If there is a model or flow diagram that 'explains' the variables that you will be using, you may need to familiarize yourself with it. For example, cognitive models of self-efficacy are presented through a long history of research as inter-related subunits. In our research, we have a flow diagram of the components of teacher beliefs and attitudes about students' ability and disability, and the overall school ethos toward disability as predictors of effective teaching and therefore student learning. The research questions arise out of the links between the boxes of the flow chart - "Does this relationship hold, and does that predict this"?

Kivunja (2018)<sup>9</sup> defines a theoretical framework as follows:

The theoretical framework is a structure that summarizes concepts and theories, which you develop from previously tested and published knowledge which you synthesize to help you have a theoretical background, or basis for your data analysis and interpretation of the meaning contained in your research data. Swanson (2013, p. 122) explicitly asserts, "The theoretical framework is the structure that can hold or support a theory of a research study (p. 44).

Kivunja continues:

The theoretical framework for your research proposal or thesis is not a summary of your own thoughts about your research. Rather, it is a synthesis of the thoughts of giants in your field of research, as they relate to your proposed research or thesis, as you understand those theories, and how you will use those theories to understand your data. In essence, the theoretical framework comprises what leaders in your field of research say about your research question, about the problem you plan to investigate, and might even include suggestions of how to solve that problem, including how to interpret the findings in your data. What those leaders say, helps you to develop an informed, and specialized lens, through which you examine

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<sup>9</sup> Kivunja, C. (2018) Distinguishing between Theory, Theoretical Framework, and Conceptual Framework: A Systematic Review of Lessons from the Field. *International Journal of Higher Education* 7 (6), 44-53. <https://doi.org/10.5430/ijhe.v7n6p44> doi:10.5430/ijhe.v7n6p44

your data, conduct the data analysis, interpret the findings, discuss them, and even make recommendations, and conclusions (p. 45).

A theoretical framework allows you to explore and present the existing theories, models and ideas that previous researchers have presented and justified in their research reports. There may be different frameworks, and even conflicting arguments between researchers about which is the correct theory. Your task is to present these and then to justify taking one side or another, or even comparing both, by testing them through your study.

Remember that, no matter how dedicated you may be to a certain perspective or argument, your study will be a 'thesis', a 'postulate' or 'argument', and therefore your research question(s) must be framed so as to invite evidence that may or may not support them. Again, be careful not to make your research question a foregone conclusion. Frame it as an open question for which the evidence might at least be interpreted and presented with shades of meaning and nuances.

In one study the author drew from a controversial claim made by a venerable and influential author in social justice literature, and applied it to a specific setting, as if this claim was already proven and accepted as true. Being convinced at the outset that the findings would reflect this claim, this author did not state the research question as an open question that allowed for alternative interpretations. When the evidence failed to confirm the assertion made in justifying the question, the author had to scramble to reinterpret and rewrite the premise of the thesis. Our student could not claim that the influential author was wrong, but rather that the evidence built upon more nuanced and context-specific factors that the original author did not examine. Be careful therefore to state assertions as questions not facts.

The 'reading wars' of the 1980-90s also come to mind as a theoretical conflict based on two differing sets of hypotheses. One set of researchers (the Psycho-linguistic theorists) was convinced that young children can only learn to decode each piece of written English text if they can locate it in a meaningful,

auditorily-understood sentence. They claimed that reading needs to be taught 'top-down', embedded in meaningful sentences. The rules of spelling and letter sound matching that underlie English in print were therefore only secondary to grasping the larger context and meaning of an aural sentence that the child heard. This theoretical perspective led to the practice of teaching reading only through full sentence recognition, with little or no instruction in how to parse and decode the sounds of letter and word combinations in English print. On the other side, the researchers who supported teaching grapho-phonemic correspondence, (mapping sounds onto printed letters and words and vice-versa), claimed that children would be limited in their ability to read if they did not learn to segment and map sounds onto letters and letter units in printed words. They said that, because of the complexity, irregularity and redundancy of how spoken English is transcribe into print, children must learn grapho-phonemic correspondence as a prerequisite to learning to read full sentences. This 'bottom-up' approach focused on rote learning of the conventions of print and sound—print correspondence, before moving to larger units such as words, phrases and sentences. A nasty research battle ensued, with major practice directives from each side about how learning to read was to be taught. Several years and many studies later, it was generally agreed that children should be encouraged to learn both the 'top-down' spoken sentence structure and the 'bottom-up' grapho-phonemic awareness in order to become fluent readers.

By presenting the different theoretical perspectives and their claims, you frame the research study that you intend to carry out. You are providing a rationale for why you will conduct your study, and you justify the importance of it in adding to the knowledge base that underlies these theories. You do not have to subscribe to one or another theory, but you can point out the differences, the common ground and the implications of each in order to set up your own study.

### **Conceptual framework**

Kivunja defines the conceptual framework for your thesis, as follows:

A **conceptual framework** is the total, logical orientation and associations of anything and everything that forms the underlying thinking, structures, plans and practices and implementation of your entire research project. So, the conceptual framework comprises your thoughts on identification of the research topic, the problem to be investigated, the questions to be asked, the literature to be reviewed, the theories to be applied, the methodology you will use, the methods, procedures and instruments, the data analysis and interpretation of findings, recommendations and conclusions you will make (Ravitch & Riggan, 2017<sup>10</sup>) ... Thus, the conceptual framework is the logical conceptualization of your entire research project. (p. 45).

Therefore, the conceptual framework differs from the theoretical framework in that it represents your own take on the study you undertake. Kivunga lists 6 questions, the answers to which comprise your conceptual framework:

- What do you want to investigate?
- Why do you want to investigate it?
- How do you plan to do it?
- How will you make meaning of the data?
- In which worldview or paradigm will you locate your study?
- How will you report your findings?

In other words, the units of your proposed research together represent your conceptual framework. They are your conception of your project. In a qualitative thesis, this is in part represented by the narrative about yourself and your experiences that lead you to your research question. In both a quantitative and qualitative thesis, your conceptual framework includes the hypotheses you draw from your examination of the theoretical material, how you will approach the analysis of your data, and your best hunches about what will result from your data.

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<sup>10</sup> Ravitch, S. M. & Riggan, M. (2017). *How conceptual frameworks guide research*. 2nd Edn. Los Angeles; CA: Sage

Kivunga (2018) adds:

You can look at the conceptual framework as the logical master plan for your entire research project (while) a theoretical framework is only a little sub-set of the conceptual framework.... Thus, whereas the conceptual framework could be the product of your own thinking about your research study, the theoretical framework comprises other people's theoretical perspectives that you interpret as relevant to your research, and in particular, helpful in your data analysis and interpretation (p. 47).

### **How far back should you go?**

Plato and Aristotle? Piaget (1896-1980) or Vygotsky in the 1920s? Again, there is no hard and fast rule about this, and your thesis supervisor will have the ultimate say on what you should include. My preference is not to go so far back that you recapitulate the history of your theoretical base, but to start where the most relevant current concepts were founded. The Social Sciences are now mature enough to stand their theoretical ground, without justifying a century of development. An example:

There is a body of theory known as "constructivism" that describes what knowing is and how we come to know something. It says that learners actively construct knowledge by creating strategies to handle the information with which they are confronted. There are variants of this theory – social constructivism, radical constructivism etc. The roots can be traced back to Piaget's concept of how children's active learning evolves and grows over time, and to Vygotsky's Zone of Proximal Development, which posits that we learn at a level that challenges us at the boundary between what we already know and what we seek to know. The development of constructivism as a theory, however, is more recently grounded in Information Processing theory and studied as a part of cognition and Artificial Intelligence. It's a long way from its historical roots.

One point of scientific logic: If you fail to confirm a finding that you originally postulated or hypothesized, the only claim you can make is that this finding failed to occur. You cannot speculate about why the expected finding did not emerge, only that it did not. You are not at liberty, therefore, to offer an explanation for *why* it failed to occur.

In quantitative analysis, the same argument holds. If an effect is not statistically significant, you are not supposed to speculate whether another factor might have had a hand in influencing the finding. Such a speculation is itself a research question and requires you to present further evidence. More about this in Unit 8, and the current controversy about accepting statistical probabilities as 'proofs' and interpreting non-significant trends.

### **Statement of self-disclosure: Introducing your take on your review**

This may be a statement of your own formal and informal life experiences that brought you to this study and is part of your conceptual framework. When including your perspective, you make explicit the personal lens that you have used to filter your material. Especially when your field is controversial and interpretive, the reader may need to know how your perspective and background may have influenced your selection of what you choose to present and how you present it. That is part of being transparent about your sources, and it allows the reader to decide whether or not to be persuaded by what you claim. The purpose of this section is to tell your readers that you will approach the investigation from a certain perspective that you have developed as a result of being immersed in this topic, and about which you have first-hand experience. In other words, you do hold values and beliefs about this topic and you have certain expectations about what you will find. By setting this out in text, you are inviting your reader to see how you have approached the study, and by making it explicit, to allow the reader to challenge your findings with an alternative perspective. This section is not for you to show the breadth of your experience and interest in the field, but rather to let the reader know that you hold important opinions that you may have used to interpret your findings.

Not all theses, however, will have this disclosure section. Qualitative theses typically have such a section, to inform the reader of your interest and background in setting up the study. Quantitative studies on the other hand do not typically require such a section except as part of a general introduction to your topic at the beginning of the thesis.

Here are four YouTube sources that tackle parts of the Literature Review process.

- Dr. Candace Hastings – this is recommended
  - Dr. Hastings drew from the excellent book “They Say/ I say”<sup>11</sup> – cited in the footnote below. The [video](#) tackles how to find, organize and catalogue your literature research.
- North Carolina State University Libraries (July 2009): [Writing a literature review](#). While not a dynamic presentation, this video is filled with great tips.
- University of Louisville Writing Centre (Sept 30 2016): [Writing a literature review](#)
- [Guy E White](#) – dissertation literature review [video](#)

## How do you construct a lit review?

### *Finding articles*

What are you looking for? If possible, start with your clear and definitive **research question** (unit 6), or, if the literature review will help shape your question, at least have a **defined topic** with a series of keywords to help you begin to narrow your search for relevant material. If you are clear about what you want to ask, then the relevant literature will be easier to identify.

See *Formulating the research question section* in Unit 6.

From the question(s) identify the following:

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<sup>11</sup> Graff, G. and Birkenstein, C. (2014). *They say / I say: The moves that matter in academic writing*. W.W. Norton and Co.

- Key words that are central to your topic
- Key authors – writers whom you may know in your field. Include your immediate supervisor and committee members if they work in the same field. If you haven't yet identified these authors, start a list of those who are writing articles that are closely aligned to your thesis. These may be few or non-existent at the outset, but you will build the list.
- Potential methodological, theoretical and analytical approaches. How do you intend to address the question in your method, and what precedents exist for this in the literature?

Start an organizer – online, through NVivo or another software resource (see below) or labeled piles of articles. It can be simple initially because it will grow as you conduct your research. One student with whom I work uses “Smart Ideas” as a conceptual tool to define the main questions and possible sub-questions of his thesis. There is a [free version](#) available.

Each node in this conceptual mapping tool can then become a heading for articles as well as main findings. It keeps the focus on the research question and limits the extent to which he wanders into the by-ways and detours of the research literature.

A very helpful YouTube source to keep your reading on track has already been mentioned previously:

Simon Peyton Jones, Microsoft Research, [How to write a great research paper](#): Dr. Jones argues for writing to think; that is, starting your writing very early in the research process, rather than doing lots of research in order to write. That way, when you write, you are not overwhelmed by mounds of material that you have difficulty keeping in mind but have already started to annotate the key concepts into a beginning form of an organizer. This grows as you continue to read. It does not need to be polished text but rather it is your thoughts on the research and how they relate to your thesis, which you can refine later.

### ***How do you search for relevant material?***

There are a number of strategies for finding articles and chapters that are relevant to your thesis topic.

**Keywords.** Note the keywords that most published articles list at the beginning. The authors have selected these keywords to represent their work from a limited list of keyword choices that the journal editors provide. These become the standard terms for each field. Searching for other articles in the same vein simply means putting these key terms into your library's search facility.

**Lead authors (superstars).** One way is to identify the authors in your field who are the leaders – the senior contributors. Each author is known by his or her 'citation index'. When a published work is cited by another author, a number of software systems are able to count that citation. Of course, the more an article is cited, the more that author is influential in that field. You can find out who are the most cited authors in several ways:

- [Research Gate](#), a blend of social media and scholarly disseminations, keeps count of citations.
- [Google Scholar](#) also provides citation counts for the big players in your field.

By locating the names of the major contributors, you are set to conduct a literature search of authors that will zoom you into the main work in your field. Newly minted scholars sometimes emerge from the best-known journals in a field. If an article is published in one of the prestigious journals such as [AERJ](#) (American Educational Research Journal), or a known review such as [RER](#) (Review of Education Research) or [RRE](#) (Review of Research in Education), it is a good bet that this author has provided a strong overview of your field.

The American Psychological Association (APA) maintains a number of databases, including [PsycINFO](#), [PsycARTICLES](#), [PsycBOOKS](#), [PsycEXTRA](#), [PsycCRITIQUES](#), [PsycTESTS](#), and [PsycTHERAPY](#). APA also operates a comprehensive search platform, [PsycNET](#), covering multiple databases.

Keep in mind that the members of your thesis committee may also be names to be searched in the citation literature. By linking your research to theirs, you will introduce a dialogue with them that could be very helpful when you defend your thesis at final oral (if you have one with them present).

Put these names into your library's search criteria to find the similar and most recent publications.

**Review articles.** Another way to get into the literature is to find a recent review article that covers the current research in your field. In unit 4, we discussed situating your thesis question in the broader field of study. The topic of how to find a viable research question was raised under the heading 'Where do I find my topic and research question?'. Both in finding your question and in developing it, a recent review article written by leaders of the research in your field can be a great resource. There are many books of review articles; *Annual Review* and *International Review of...* (and field-specific reviews such as *Review of Educational Research*, and *Review of Research in Education*) where authors have undertaken a literature review of the second type that we discussed at the outset of this chapter; a comprehensive summary of what is current in the field. There are also Annual Review compilations of subjects in most fields of study. These overviews are valuable to enable you to see the overall context of your work in this field. They may also include an evaluation of the different studies; their strengths and shortcomings, the gaps in the knowledge base, and the controversies between researchers.

For example, the 20-year history of the work of my colleagues and me was part of a review in a chapter published in H. Fives and M.G. Gill, (Eds.,) (2014), *International Handbook of Research on Teacher Beliefs*. New York: Routledge; Taylor and Francis. The intent of the chapter, by Kiely, Brownell, Lauterbach and Benedict, was to point to the shortcomings of the definitions of beliefs used in our field, the effect of teacher beliefs on the inclusion in classrooms of students with special needs, and the gaps in the research (p.475-490). Such a review article is useful not only because it situates our work in a broad context, but also because it suggests what may be missing or questionable, where the next studies should

be focused, and what standards they must meet. In effect it allows researchers to stand on the wall of knowledge built by those who have gone before, and to add the next brick.

### ***How do you annotate and catalogue each article that you read?***

Start with summaries of each article, plus full citation, and notes on the relevance to your topic. Make sure to keep a record of the author(s) and year, the source and the full citation (including page numbers or on-line reference with the date you retrieved it). Then add a summary of the article and note the relevance to your topic. Label the main theme and contribution in light of your own study.

Add your evaluation of the study you are reviewing, such as strengths of the source, and weaknesses especially if they add to justifying your study. These could be, for example, a very small sample size or non-representative sample, a weak argument, or another possible explanation for the findings. Such notes link the theoretical framework of your study to your conceptual framework, leading to your research questions.

Key words are useful as a reference for linking this article to subsequent ones. It is useful to use citation software to keep track of what you read. These citation managers include:

- RID (ProCite, Reference Manager, Zotera),
- EndNote,
- RefWorks
- BibTex,
- Medlars,

Check with your librarian to see which of these citation managers your university supports. Training and free downloads of licensed software may be available to registered students.

In the behavioural and social sciences you will likely be using APA (American Psychological Association) citation generation. The way you cite your sources in text is reflected in the Reference list that the software generates. It's important to get to know what this looks like – take note when you read published

articles because this is what they also use. Then read the sections in the APA Publication Manual of Style, now in the 7<sup>th</sup> Edition. At the risk of repetition, becoming familiar with its content is worth the time invested.

One further tip: save quotable quotes and include the complete page location in each source. It's increasingly important that, when you supply material cited from another source, you include verbatim quotes that can be sourced to their origins. You may want to cite these because they are controversial or evaluative and open to various interpretations, and you do not want them to be attributed to you; or because they are colourful and add interest to your text; or because they came from an eminent and quote-worthy source. In addition to the publication title, authors and sources, you will need the page number when you quote them in your thesis –and you can never find it again if you don't record it when you first find it – really!

Although you should not use persuasive argument to convince your reader about your views on your topic, nothing prohibits you from verbatim quotes from other sources. As in good journalism, the author remains objective, but the salacious, inappropriate or bigoted views of others can be conveyed only if they are directly quoted from a traceable source!!

Also see the section on plagiarism in Unit 7: Using verbatim quotes and giving full credit to sources are important mechanisms for any author to justify their work, and to avoid the implication or penalties of plagiarizing someone else's writings.

### ***How do you organize the material?***

So now you have developed a stack of similarly annotated articles. How do you reorganize them so that you do not overload with information?

One possibility is to use the various components of your research question to organize the material. One student recently asked me how to get a huge pile of papers into a system so that he could keep track. It's a challenge unless you start to grow the organizational structure from early in the search process – label and cross reference what is historical, key concepts, key arguments, methodology, key

authors in the field. NVivo is a qualitative software package produced by QSR International, designed to help qualitative researchers to organize, analyse and compile themes in their data. I mention it here because one of our students noted a further use for it as a literature review organizer. NVivo allows you to manage your sources, identify themes and helps you to make connections between sources. She supplied the following resources:

Cain, A. (2017), [Tackling the literature review](#), and Dr. Alan Shaw's [video](#) on how to use NVivo for your Literature Review.

Dr. Candace Hastings has some excellent tips for organizing those piles of articles that you have collected. In her video she suggests you annotate each article thus:

[Dr. Hastings's 5 questions](#):

1. What do scholars say about your topic?
2. What are the ongoing debates within your topic?
3. What ideas do you agree with? – Why?
4. What ideas do you disagree with? – Why?
5. What hasn't been said about your topic?

And add a 6<sup>th</sup>; What are the methods used to investigate this topic?

It is very useful to use citation software: EndNote, RefWorks, Zotero - APA citation generation. These keep track of your references in text by generating the reference list with full source information that will be added to your thesis and will match the citations in your thesis content. In days of yore, this was a manual task – and inevitably a sharp-eyed examiner would find a citation in text that was missing from the reference list, or a difference in cited year or author in text compared to in the reference section.

In your system of keeping track of what you read, I suggested annotating the authors in your field who most often pop up, or who have published something very close to your own work. These are the names that you can trace on an online digital library such as the [Education Resources Information Center](#)

(ERIC), and [Google Scholar](#), ERIC Clearinghouse, ProQuest dissertations *or a social network for research dissemination such as* [ResearchGate](#).

The latter is a relatively new resource that is a cross between a social network and a library of publications that are posted by their authors. It enables more than just accessing relevant material; one can interact with the authors, ask them questions and request materials such as measures and surveys, and also ask the broader community for assistance on research-related topics. By joining this community, you are tapping into the conversation in your field, and this will help you to locate your study and the importance of your research questions. It is controversial, however, since it raises questions of copyright and royalties.

There are now a number of open access sources to the literature. The old gold standards such as ERIC are still available. Newer ones such as [Google Scholar](#) have emerged, and although not comprehensive they give you the names of the big players by supplying the number of citations of a given article. Also search your thesis committee, external examiner etc. – what will the people on my committee expect me to know (their work!) Don't mess up on their details. How they write will be how they will expect you to write. Also check out theses that have been written in your field through ProQuest dissertation searches.

### ***What methods have been used in the field to tackle my research problem?***

Part of your search will be to justify why you chose a particular methodology. The keywords for your method are also important for your literature search. Indeed, the techniques used by previous authors form a part of the theoretical framework that you will want to report. Sage publications now puts out a [guide to research methods](#) in the social sciences that is a useful resource to locate your and others' methods: More about this in Unit 7 on developing your research methods.

### **A word about plagiarism, and the ethical conduct of a researcher.**

At the end of unit 7, in a chapter about the method to conduct your research, we examine the ethical issues of research that involves human participants. In that section, the issue of plagiarism comes up as one of the key issues of ethical

conduct of a researcher. Please check this section about how to avoid plagiarism, not only about how to credit your sources but also about the fine line between paraphrasing someone else's words, if not their ideas.

## UNIT 6: Formulating a researchable question

### Key concepts previously encountered in Units 1 to 5:

**Unit 1:** Meet the reader – the people who need to be convinced that your question, evidence, interpretation and conclusions are justified, believable and sound.

Characteristics of an empirically based thesis -

Scholarly - based on verifiable sources

Veracity-validity vs. 'fake news'

**Unit 3:** Research questions - "What I want to find out"

**Unit 4:** Where do I find my topic and research question?

Quantitative, qualitative or mixed methods? An evaluation study?

Introduction to a technique for developing your research question

How broad should my study be?

No significant findings and the "So what?" question.

**Unit 5:** The funnel - how the literature review reveals, supports and justifies your research question(s).

Theoretical and conceptual frameworks

Reviewing methodologies used in this field

Your research question(s)

### Summary of Unit 6: Formulating a researchable question

- How do you write a good social science research question? – a strategy.
  - Operationalizing a research problem
- Social science problem vs. Social science *Research* problem
  - Sense of the problem (Kilbourn, 2004)
    - Action (What I'm trying to do/find out),
    - Source (What led to the problem),
    - Context (What needs to be done),
    - **Primary Source** (Why this problem exists).

- Taking a Quantitative or measurement-based approach or a Qualitative approach, or mixed methods
- Will answering this question benefit the participants?
- Validity, veracity, reliability and confidence - can your study be trusted?
- What if the results don't show what I initially expected?

**How do you write a good research question? – a strategy.**

Start with your topic. Describe **the research problem**.

You have a good idea of what you want to investigate. You’ve become conversant with the literature in your field of interest (Unit 5), and you’ve been able to situate your topic in this field. You are able to support an argument from the literature that your study will add an increment of knowledge to this field. You may have figured out whether your question will require a quantitative or a qualitative method of investigation.

How do you generate a viable thesis question from the material you have? There are a couple of ways to go about formulating a social science *research* question.

***Operationalizing a research problem***

A much-admired mentor and professor of mine during my student days used the following technique:

Write the social science problem down the left-hand side of a page. You can leave articles and adjectives with nouns, and adverbs with verbs, but each clause needs its own row:

***Figure 6-1: Breaking down Problem One***



Are there defining characteristics
in the lived experiences
of students
from traumatic home backgrounds
who successfully complete a bachelor's degree?

Using the question asked above, we generated the format in Figure 6-1.

Now beside each row write what is important about each word or phrase, from the perspective of your reader who is seeking to be convinced of your findings:

**Figure 6-2: Defining the elements of Problem One**

Problem Statement Sections	Defined Problem Sections
Are there defining characteristics	What makes a characteristic a defining one? Did all participants demonstrate it? Or most or some? Doesn't this vary with the group of participants the researcher selects? What is the basis in literature that drives this question?
in the lived experiences	Does this imply a collection of narratives, or a survey of first-hand experiences?
of students	What age, grade? - in post baccalaureate, as implied by the completion of a degree? How are they to be sampled?
from traumatic home backgrounds	What constitutes trauma? by what definition? Is this to be identified as a sampling strategy and if so how? or as a result of participant description
who successfully complete a bachelor's degree?	Context: in a Canadian/Ontario university or college or?

Notes – what are the critical variables?

- determining what is a 'defining characteristic'
- identifying the participants
- pinning down the type and degree of 'traumatic' in home backgrounds
- What does the researcher have in mind as a possible outcome of the study?
- What literature addresses similar participants and what has led the researcher to frame this question with these participants?
- Were supports offered during the undergraduate program, and if so, is the purpose to evaluate them?
- Are there intersectional factors – race, language, immigrant status, high school profile, economic situation, family situation? Do these need to be added?

As you work through the example in Fig. 6-2, you see how complicated a study can become. But this tells you exactly what you need to do to trim your study to fit your resources. For example, if you have access to specific records or if you are wanting to conduct an in-depth profile of these students, or to collect their narratives of their experiences, you will want to tailor the research question accordingly.

### **Social science problem vs. social science *research* problem**

Kilbourn (2004)<sup>12</sup> offers important distinctions between a social science problem and a social science *research* problem?

A social science problem gets turned into an social science *research problem* when

"it is couched in an argument that illustrates its (scientific) significance

It explicitly refers to existing research.

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<sup>12</sup> Kilbourn B., (2004). The qualitative doctoral thesis proposal. *Teachers College Record*, 108, 4, 73-112

It will have 'layers' "– (p.15)

Kilbourn suggests that you frame your research question as "The problem this study will address is ....."

Note that Kilbourn's research question is not framed as "I want to explore" or "I want to document" ..."examine" etc. These types of questions can be viewed as "Look and Say" questions in which the researcher's intent is to document what exists. This might be an important problem, but it is not a *research* question.

A social science *research* problem starts with a discussion of the existing research that frames the context and it then moves on to state the problem in terms of the theoretical elements that need to be addressed (unit 5).

Kilbourn suggests that this is not easy; he terms it a "sweaty incline" (p. 84). He distinguishes among four types of questions:

- **Action**, sense of problem – (What I'm trying to do) "My problem is that I want to find out if these successful students have some characteristics in common that I can claim defines them" (*I want to look and say ..* )
- **Source**, sense of problem – (What led to the problem). "My problem is that I want to add to the sparse literature on how social and academic supports and supplements to undergraduate programs can influence students' success'.... There is very little information about what caused them to complete their degree after their home experiences, ... and I want to fill this gap"
- **Context**, sense of the problem – (I want to address this problem because of its importance in policy/practice etc. in the field/news). "This group of students represents how the University-sponsored support programs were successful in accomplishing their mandate. (*I want to evaluate the impact of the University's resources*).
- **Primary source**, sense of problem – (the problem this study will address is .....) "I want to study *why* this is happening..." "What caused these students to turn around from being the recipients of traumatic experiences during their school years to becoming successful graduates? "

The **Action** and **Source** senses of the problem may be part of the solution, but they do not address the research question itself. To be the *primary* research question, it must explore the underlying contributors or the effects of some phenomenon. It is not enough to say that it is taking place, or that it needs to be documented. Often student researchers seek to examine a group of participants or an event or phenomenon in depth, so that they can describe it in detail. They may justify their approach by saying that this event or these particular participants haven't been studied before. This is a 'Look and Say' approach to research; it does not address why the group, event etc. occurred, or what factors were contributing to it, or what effects were created. It is therefore a weak justification for the research study. In order to address *primary source* of the problem, the research question must be linked to previous literature that has attempted to say why or how it, or similar group formations, events or phenomena occurred and/or contributed to its effect.

The **Context** sense of the research problem may be a legitimate reason for carrying out this study; that is, in our example, how effective is the program that takes place in year one in helping students to graduate by year 4. But this evaluation study is different from one that explores students' lived experiences. Such an efficacy study would imply a possibly quantitative, comparative approach in which successful graduates from the year 1 program might be compared with graduates who did not participate in the program, or with students who failed to complete. See the section titled 'Evaluation studies can be tricky' in Unit 4.

The **Primary source** sense of a problem is intended to link the current problem with the existing research in the field and therefore to build on it. Not only will you document what is happening, but you will be digging deeper to see if any of the elements that have already been identified in the literature and in theories about this phenomenon can *explain why* this is happening. The structure of a primary research question follows from the research literature, as explained in Unit 5.

Kilbourn provides a light-hearted but helpful example:

His lawnmower quits and his neighbour asks "What's the problem?"

Kilbourn notes that he can respond to his neighbour in several ways:

**Action** sense of problem – (What I'm trying to do/find out): "My problem is that I'm trying to fix this lawnmower".

**Source** sense of problem – (What led to the problem). "My problem is that I've taken this mower to three different repair shops and it's still not fixed".

**Context** sense of the problem – (What needs to be done). I want to address this problem because of its importance in policy/practice etc. in the field/news. "My problem is that I promised to mow my father-in-law's yard today and he doesn't have his own mower"

Yes, but *What's the problem?*

**Primary source** sense of problem – (Why this problem exists) "I was running it and something started to make a pinging sound, then it billowed smoke and shook, and then stopped altogether. I want to find out why?"

If we apply these distinctions to Problem 1 of the Figures above - "What are the defining characteristics of the lived experiences of (a subgroup of successful) students who..." (Fig 6-1, 6-2), we see that this research question falls into Kilbourn's second category; a **source** sense of the problem. What are the characteristics of the group that led to their gaining their degrees? It seeks to define the group; - that is, to *look* at a defined group and say what distinguishes the members of this group from others.

In this sense Problem 1 does not provide the links to a primary source based in the literature that would make this a *research* question. The primary source sense of the problem that we seek to articulate is something like: "From what we already know from previous research in the literature, the problem that now needs to be addressed is... what caused these students to turn around from almost failing and needing support in year 1, to successfully graduating in Year 4? *Why* is this group of students successful, and what factors do they attribute to

their being successful?". The “why” is an important part of the question to be addressed.

“In the context of the literature on human resilience and Sen’s Capability approach (Sen 1999; Robeyns, 2018<sup>13</sup>), and the ongoing debate about the value of both social supports and academic resources in contributing to academic success in first year undergraduate students, to what do graduates of a baccalaureate degree, who experienced traumatic experiences during their pre-university years, attribute their success?”

“In recounting their narratives of lived experiences, what do they believe are the most important contributors to their eventual success?”

“What were the obstacles and barriers and how did they overcome them?”

(... and potentially) “Are these attributions unique to this group compared to a group that was not successful? Or to a group that was successful but did not have the support of a University resource program?”

**Figure 6-3: Reframing the research topic**

<b>Problem Statement Sections</b>
To what
do graduates of a baccalaureate degree
who have experienced traumatic experiences during their pre-university years and
who were supported by a supplementary program during their baccalaureate
attribute
their success?

It’s getting better – but now there are clearly some emerging variables yet to be defined (operationalized):

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<sup>13</sup>Robeyns, I. (2018). Wellbeing, Freedom and Social Justice: The Capability Approach Re-Examined. <https://orcid.org/0000-0002-2893-1814>

**Figure 6-4: Operationalizing the variables**

Problem Statement Sections	Defined Problem Sections
To what	a range of possibilities exists that will need to be refined in order to structure your interview or other data collection method. Will you discuss the trauma itself, and the aftermath? Will you examine the participant's history from early childhood? Will the family and peer support, teachers etc. be included? Much will depend on and be defined by your literature review, and the theoretical basis for your study.
do graduates of a baccalaureate degree	Successful first year or not? degree completed or on track to complete? Completed in 4 years?
who have experienced traumatic experiences during their pre-university years and	At the moment, this variable is too amorphous to allow you to frame your thesis. It needs to be specified from the review of a body of literature that focuses on the kinds of trauma that you have in mind, or the kinds of consequences that students bring to their first year at university. This is a critical component for your study. For example, are you investigating refugees who had traumatic experiences before or during their flight to Canada? Are you looking at young people who have been the victims of sexual or physical abuse? Or misogyny, bullying or racism?
who were supported by a supplementary program during their baccalaureate	What kind of supports? For example, assuming your study is situated locally, there are several variations of intervention programs offered by universities and colleges to assist students who struggle in their first year, from a 'time out' to an intensive skills-building program aimed at increasing success. Describe the characteristics of the program(s) that you have in mind. Which educational institutions do they represent? Or are the supports informal, such as family, peer groups, or teachers from prior school experiences or more formal?
attribute	Will the students themselves offer their views about the factors that led to successful completion? Will you include program staff? policy documents, funding agency data? Family perspectives? language background? cultural and societal influences?

	How will these data be formulated? - as interviews, questionnaires, observations? How will they be validated?
their success?	What constitutes success? Their evaluation or a standard such as degree completion? or grades? or enrollment in the 2nd year of their program?

As indicated in the right-hand column that operationalizes the question (i.e., that says what each element of the question will look like as data) the topic of this thesis and therefore the research question still needs development.

There are also a number of sub-questions that can now be raised –

Is this an evaluation of the supplementary program’s effect?

Is this an implementation study? (Century & Cassata, 2016<sup>14</sup>).

Is this a series of case studies of students who have experienced trauma, and if so, what characteristics bring them together as a group to be studied?

Is this an investigation of resilience in students who succeed against the odds, and if so, how does the literature support this? Is the sample representative of student resilience? How do student characteristics align with Sen’s Capabilities Approach?

This is how you develop your proposal for a thesis – breaking down the question until you can see the elements that you will need to define, collect and present to answer your question. You are ‘operationalizing the variables’ because you are moving toward an operational definition of each element or variable in your study. The sampling characteristics and the chosen method reflect the scope of the research question and therefore needs to be carefully presented in the context of the chosen literature in the field.

Of critical importance is choosing your outcome variable(s); that is, the evidence that you will offer to your reader so that they can gauge of the impact of your study. In this case it might be a survey, in-depth interviews, artifacts from

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<sup>14</sup> Century, J., & Cassata, A. (2016). Implementation research: findings, common ground on what, how, why, where, and who. *Review of Research in Education*, 40, 169-215

the experience, a focus group, etc. This is developed in the next Unit 7, on the Method.

### **Quantitative or qualitative?**

The question raised in Problem 1 is a complex one. It would lend itself to either a quantitative study or a qualitative study.

In the case of a *quantitative or measurement-based study*, you might gather data from a survey or questionnaire that had a Likert-type scale or a ranking scale, so that you could combine the scores given by your participants into profiles that could be compared. The demographic data that you will collect may provide the details of how you group and subgroup the participants' responses.

Demographics are likely to include the participants' age, economic background, gender, languages spoken etc., depending on the focus and context of your study. An independent variable is a variable that stands alone and is not changed by the other variables you are trying to measure. These grouping variables are the *independent or predictor variables* that will allow you to compare and contrast the evidence (such as the responses to the survey) between groups who represent important dimensions of your study. A dependent variable is something that can vary as a result of variation in other factors. The evidence or data are the *dependent or outcome* measures that make explicit in measurement terms the variables that you have operationalized to answer our research question. A dependent measure, for example, might be the participants' rating of the relevance of the first-year program on their eventual success.

Alternatively using a *qualitative, case-based approach*, you could select several cases to represent graduates who has experienced traumatic experiences, and then document in depth what had happened to each of them prior to attending university. This would be a very different thesis from a cross-sectional quantitative study, but it could handle the complexities of the profiles and histories of the students' cases much better than a quantitative approach with a broad set of measures. You would need to consider to what extent

however, the conclusions would be generalizable to other successful graduates. Depending how you select the cases, the outcomes will likely not be representative of others in similar situations, and therefore not generalizable. That is, you could not draw conclusions that would lead to judging the quality of the supplementary program or setting new policies or implementing preventions. The stories told by the participants are likely to be unique to each person, and 'intersectional' in representing an array of demographic and personal characteristics. Indeed, what is your intention with the results of this study? Does generalizability matter in this case-based study, or is your intention to document the complexity of the factors that interplay in each person's story?

**Problem 2**

The second example is a two-part question:

How did nurses who graduated between 2014 and 2019 form their professional identities as nurses?

1. How did their practicum placements during training contribute to or detract from their professional identity as nurses?

**Figure 6-5: Breaking down Problem 2**

Problem Statement Sections	
How did nurses	
who graduated between 2014 and 2019	
form their professional identities as nurses?	
How did their practicum placements	
contribute to or detract from their professional identity as nurses?	

**Figure 6-6: Defining the elements of Problem 2**

Problem Statement Sections	Defined Problem Sections

How did nurses	Type of certification? Degree - masters or bachelors, or certification? Professional registration?
who graduated between 2014 and 2019	From Ontario? Canada? Elsewhere? - geographic representation? How do programs differ? Gender? Religion?
form their professional identities as nurses?	'professional identity' evidence? Time frame - before, during or after training? practicum? Operationalizing 'professional identity'.
How did their practicum placements	Types of placements? Where? Frequency and length? Do different settings result in different outcomes/experiences?  How to sample a range of placements?  Literature on positive and negative factors during practicum: characteristics of preceptors, (type of oversight, grading practices, types of feedback, critique, relationship);  history of profession's gender identity; status; degree of responsibility, autonomy and independence during practicum.
contribute to or detract from their professional identity as nurses?	How do you define, measure or collect evidence of professional identity?

The problem I want to address is *"To contribute to the growing but limited research on the impact of the preservice practicum on the development of nursing professionals, how do nursing graduates develop their professional identity, particularly during practice in their training years, and what supports and barriers do they experience?"*

An *Action* sense of this question would examine what the identity characteristics are of a large group of nurses, possibly by surveying or interviewing them, and

documenting the main themes in their responses. The researcher would make the case that common themes currently define this group, but it would however not extend the research literature beyond saying what exists.

Similarly, the *Source* sense of the question would produce an answer that notes that there is a great deal of literature on this topic but relatively none on why nurses in (a specified group of) hospitals (or alternative settings such as long-term care facilities, home care) go into their profession, and what they learn about themselves during practicum. The researcher would be attempting to verify what is already known about nurses' professional identity as a specified group of nurses (specific health care setting, or university graduates, nurses trained after a major revamp of training procedures, etc.) Again, this approach does not link the question to the literature that documents, for example, the personal characteristics that make for success, the role of mentors and preceptors, the practicum structure and content, or how practicum experience is monitored and evaluated, the role of gender, etc. etc. It is a *look and say* approach, rather than addressing how or why professional identities are crafted.

The *Context* source of the problem might seek to address how current changes in policies and practices in nursing education have an impact on recent nursing candidates compared to those trained under previous policies. Again, it has an evaluative component that will influence the design and sampling procedures for the study.

The *Primary Source* sense of the question, as presented in Figure 6-6, investigates what led this group into nursing, what factors during nursing influenced their sense of professional identity, what happened and who was influential in their sense of identity. It asks what factors contributed to the professional identities they hold, and therefore it lends itself to interviews, to their own retelling of their practicum experiences. It addresses *why* they currently hold the professional identity they describe.

### **Will answering this research question benefit the participants?**

In a book on conducting research with children, Smith (2011)<sup>15</sup> suggests that curiosity alone is not a sufficient ground for conducting research, but that research is justified when it contributes to potential improvement in the well-being of participants. This seems to be a different rationale for formulating a researchable question from one that addresses the underlying cause of an event or phenomenon. It is linked, however to the principle that research must have the potential to advance knowledge in the field, by adding a unique contribution to the existing literature, and thus expanding the boundaries of our collective pool of knowledge about a field that is important to society.

**Topic creation.** [John McGarvey](#) offers a somewhat different approach. He breaks down the thesis statement into elements:

- The topic of your study
- Your position – what you believe to be true
- Qualifications to your position; exceptions, or extenuating circumstances, Is yours an absolute or qualified position?
- Your reasons for taking your position

This is exactly what you will need to present in order to defend your thesis at the end. Keep in mind however that, when you start developing your thesis topic, you are aiming to operationalize your question in a way that you hope will produce the evidence that will lead the reader to agree with your position about it. If it doesn't work out, you may need to change or at the least qualify your position.

### **Convincing your reader: Validity, veracity, reliability and confidence**

A thesis is a communication between you and your audience. People often ask if there is a formula for how they present their ideas and findings.

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<sup>15</sup> Smith, A. B. (2011). 'Respecting children's rights and agency', In D. Harcourt, B. Perry, & T. Waller, (eds), *Researching Young Children's Perspectives: Debating the ethics and dilemmas of educational research with children*, New York, NY: Routledge, pp 11-25.

Beyond the format set out in this guide (Unit 3; Structure), there is no single 'right way' to write a thesis. But if writers keep in mind the main goal of communicating between themselves and their audience, then they will find a logical, coherent and consistent way to present their work.

Keeping this in mind "Meet the reader" in Unit 1, your main task is:

*To present your research questions, the literature that supports them, the methods and measures you select to answer them, and the conclusions you draw, in order to convince your reader that the discussion you undertake about your work is supported, convincing and therefore likely to be credible. That is, will your reader be able to follow your arguments and agree with your interpretation of what you found?*

What will it take to convince your reader that your findings?

- a) answer the research question and answer it in a way that the reader can believe is true (that is, the evidence presented to answer the question is valid and reliable)
- b) take account of the limitations that your study has, so that nonetheless the results can be believed.

Note that every study has its limitations in trying to address the research question. Being aware of and acknowledging these is one way that you will defend what you find – by limiting your conclusions to what they represent. More about limitations in Unit 9

### **Validity, veracity and other terms for claiming that your study findings can be trusted**

In **quantitative research**, there is a conundrum to tackle. If Kilbourn's **primary source** sense of the research question is to ask 'why' the event or phenomenon is happening, or what are the underlying contributors or outcomes, there is an implied causality to the answer. To identify why something is taking place is to uncover the cause-effect relationship between variables or factors, or at least their co-relationship.

There is a statistical mechanism for convincing your reader that the results can be trusted. It is called *confidence estimates* or *limits*, and it tells the reader what is the likelihood that the findings being presented simply occurred at random, or by chance? When I hear the weather forecast and I'm told that "today there is a 30% chance of rain" I smile. The chance of rain is a probability estimate. It does not mean that for 30% of your day you will need your umbrella, but that there is a 30% or a 3 in 10 chance that it is going to rain. That is, the odds are 7 (out of 10) to 3 (out of 10) in favour of **no** rain. But 30% is enough of a chance to take my umbrella when I head out.

Similarly, statistical analysis gives the reader the odds of the finding being trustworthy or believable. By convention, the odds are usually set at  $p < .01$ , (the probability is 1 in 100 that the findings occurred by chance, and therefore there's a good chance that they happened and shouldn't be dismissed), ( $p < .01$  - the probability is 1 in 100 that the findings occurred by chance). Those are the kinds of confidence estimates that you are willing to accept since the probability of them being wrong is exceedingly small. If the probability is 5 in 100 chances ( $p < .05$ ) that it will rain today, (a 5% chance of rain), I am definitely leaving that umbrella behind. But if the probability rises to  $p > .05$ , or probability greater than 5 chances in 100, I may have to reconsider whether it is worth carrying the umbrella.

In quantitative results, you will try to convince your reader that the evidence you present as part of your results could only have occurred by some quirk of fate or chance or be wrong either once or no more than 5 times in every hundred times. Therefore, they can be confident that the finding reflects reality! Quantitative analysis however does not claim to link cause and effect nor to identify the direction of cause and effect. All it can do is identify that two variables co-relate (correlate) - that is, that they vary in synchrony. The results do not say however what caused what, but only that they co-vary: When either one of them increases or decreases, so does the other. A third variable however could explain why these two co-vary. (Example: When as a nursing student, I have a good practicum, there is an increase in my sense of myself as a

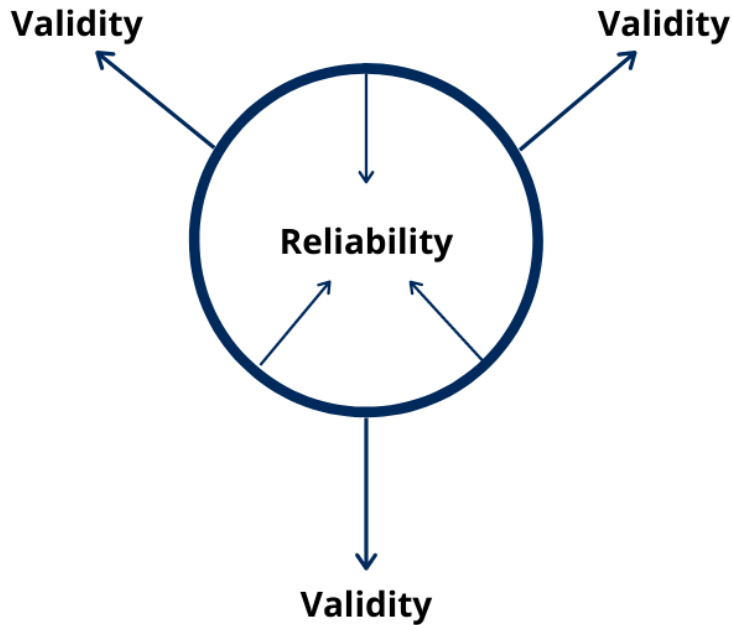
professional nurse. Practicum outcome and my sense of myself as a professional co-relate or co-vary. Both, however, depend on my having positive feedback from my practicum supervisor).

In a quantitative thesis you will want to demonstrate that your measures are up to the job of measuring what you say they are supposed to be measuring. To convince the reader, again, you present the statistical confidence estimates that the measures are up to that job:

*Validity* is an estimate of the extent to which your findings and/or measures are truly reflecting what you intended them to measure. They reflect the confidence that the reader can place in accepting that the finding as representing the phenomena and events *beyond* the evidence presented.

*Reliability* is similar except that it tells the reader what the probability is that the composition of the measure or findings was random or was the result of chance. That is, they reflect the confidence that the reader can place in the stability and composition of the measure. Thus, reliability is an estimate of the *internal* stability that the measure has, for example if future researchers were to use it with other samples, or with a smaller numbers of participants.

**Figure 6 - 7: Validity and reliability**



In **qualitative research**, a similar requirement is demanded by the reader, but it takes a different form. The reader wants to be sure that the findings you report, while not necessarily statistical and generalizable to a broad population, are valid and can be believed. Researchers sometimes talk about the “veracity” of the findings.

Qualitative research offers a look at a complex phenomenon that is different from a quantitative approach. It is primarily exploratory, in that it explores in depth the multiple, interacting factors or variables that contribute to a phenomenon, usually one of human behavior. Qualitative research is also effective in investigating intangible factors such as social norms, the impacts of socioeconomic status, gender and ethnicity, that contribute characteristics that may not be readily apparent at first glance.

Qualitative research techniques include in-depth interviewing, participant observations, third-part analyses and transcript verification, to answer questions about the rich and complex contributors to human behavior and events.

To answer Kilbourn's question of *why* a phenomenon occurs, the researcher must convince the reader of the veracity of the findings. Researchers use analytical techniques that might include verification of transcripts by the interviewee, called "triangulation" - 3<sup>rd</sup> party verification of thematic analysis, multiple data points to demonstrate the centrality and stability of findings over time and over other populations. Although the results of qualitative research can sometimes be extended to other people who share characteristics with the research participants, the usual aim of the researcher is to gain a rich and deep understanding of the specific social context and the phenomena rather than to generalize the findings to other contexts, people or places.

***Mixed methods.*** Sometimes, a mix of both quantitative and qualitative research techniques give an even more convincing presentation of the phenomena under study. A mixed methods study would be carried out in two stages; the first stage charting a cross section of an event or behaviour, and the second stage using in depth interviews or observations to fill out the details that contribute to the broader trends.

As an example, you analyse the results of a questionnaire that was completed by a number of people. You find that two distinct perspectives are emerging from the data. You select two or more of the respondents who seem to represent the differing perspectives and you interview them about their responses to the questionnaire and to the phenomena you are studying.

This gives you both a broad picture of the sample of people who responded and some insight into the depth and complexity of why they responded in apparently disparate ways. Presenting both to your reader clearly improves the veracity and believability of your findings.

### **What if the results don't show what I initially expected?**

Every candidate is concerned that the results may not work out as planned. But don't worry! Findings that change, qualify or even contradict the 'thesis' that you held going into the process can be worthy of explaining and

defending. Indeed, they may add significantly to the knowledge base in the literature.

You always have the option of rethinking your original research questions and adapting the front end of your thesis to lead to your actual findings. You also have the option of re-examining the theoretical or empirical base that led you into the study, and then supplying a critical or enhanced new version in your discussion.

Here is an example:

Certain authors hold a strong and definite perspective on certain hypothesized societal injustices. These include views about the hegemonic repression by the social majority of minorities including minority races, the LGBTQ communities, indigenous people, and women, etc. Although thoroughly documented, persuasive and convincing, these writings are theories, perspectives or opinions, not facts. So, thesis writers who take these writings at face value as a starting point for their research may find that the evidence they expected did not emerge as neatly as they expected in their particular study. This is not to say that the theories are wrong, but that the design of the study failed to find the expected trends. The thesis writer made the mistake of presenting the literature as factual rather than hypothesis or opinion. So, when the evidence they collect tells a different story, they are not prepared to accommodate it. However, there are a few options. They can decide that their research method was inadequate, in which case they will have to start again to design their thesis. Or they can delve into their data, perhaps by collecting more evidence that allows them to qualify the claims made in the theories. Or they can return to the theories, looking for alternative explanations, perhaps arguing that the original source was overly encompassing or overstated, and that the real world is more nuanced and complex than the theories imply.

# UNIT 7: The method

## Summary of Unit 7: The Method.

- What does the Method chapter do?
  - The Rule of Thumb for the Method chapter or section
  - Method section in a thesis proposal
  - Method chapter in a thesis
  - Signposts for your readers
- What is in a Method chapter? (in a proposal; in a thesis)
  - Design: Implementation and Intervention studies
  - Participants
  - Instruments or tools development, and other data collection measures.
- Validity-veracity
- Reliability-consistency
- A note on field-or-pilot-testing
- Procedure
- Analysis
- Analysing Quantitative analysis
- Analysing Qualitative analysis
- Thematic analysis
- Appendices
- Limitations
- Ethical considerations
  - Act ethically
- Plagiarism

## What does the method chapter do?

As discussed in previous units, research in the social sciences is usually conducted using a scientific method; posing a question, forming a hypothesis or speculation, conducting empirical research in order to gather data or evidence, drawing a conclusion and evaluating the veracity of the findings and the limitations of the conclusion.

Research methodologies in the social sciences represent a wide range of methods, tools and techniques for collecting and analyzing qualitative or quantitative data. The techniques or data collection methods that can be used are broad and vastly different. These include:

- laboratory **experiments**,
- field **surveys**,
- **case** research,
- **ethnographic** research,
- **action** research,
- **historical** research,
- **critical analysis** and
- **alternative methodologies** (autobiographical ethnography, etc. See Chapter 6).

Research methods are broadly grouped as quantitative, qualitative, or the combination of both, termed mixed method designs. Mixed method designs were recently recognized as a development of both qualitative and quantitative designs that stand alone (Archibald, Radil, Zhang & Hanson, 2019<sup>16</sup>).

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<sup>16</sup> Archibald, M.M., Radil, A.I., Zhang, X. & Hanson, W.E., (2019), Current Mixed Methods Practices in Qualitative Research: A Content Analysis of Leading Journals. In: SAGE Mixed Methods Research. Pub. Date: 2019 Access Date: January 11, 2020 Publishing Company: SAGE Publications, Inc. City: Thousand Oaks Online ISBN: 9781526498137 DOI: <https://dx.doi.org/10.4135/9781526498137>

### **Quantitative methods**

- Yield answers from the data that can be generalized, at least to others who are represented by the sample from which the data are drawn
- Use very simple to complex numerical and statistical analyses
- Are comparison between 2 groups - Chi square, t-tests, correlation
- Are comparison between more than 2 groups or on more than one dimension – regression analysis, analysis of variance, multivariate analysis of variance.

The results report the probability (the p value) that some result did not occur by chance alone. A recent spate of articles has drawn attention to how we use the probability estimate or p-value in interpreting evidence that is statistically analysed (See [Bastian, 2016](#) and [Nature, 2019](#)) .<sup>17</sup>

### **Qualitative methods can:**

- Yield rich (thick) description of specific cases, events or instances
- Shed light on naturally occurring events or phenomena
- Illuminate the processes and their relationship underlying statistical correlations
- Inform the development of interventions and show how interventions work to produce observed outcomes.

Creswell Hanson & Plano (2007) <sup>18</sup> discuss five qualitative approaches to research: narrative, case study, grounded theory, phenomenology and participatory action research. A basic guide to the basics of qualitative methods is the blog space, [Question Pro](#).

### **Mixed Method. – the best of both worlds?**

- Quantitative description sets the context for in depth qualitative study. Mixed methods studies have recently become accepted as an important way to conduct research, but as Archibald et al (2019) note, there are some

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<sup>18</sup> Creswell, J.W., Hanson,, W. E., Plano, V.L.C., (2007). Qualitative Research Designs: Selection and Implementation. *The Counselling Psychologist*, 35(2), 2360264. <https://doi.org/10.1177/0011000006287390>

methodological and procedural questions to be considered. Archibald et al note that while questions of how mixing actually occurs within studies might trigger methodological concerns for certain practitioners, they may trigger procedural concerns for others

This unit will focus on what the method chapter is supposed to do, what it should contain and how it is presented, rather than attempt to provide a broad survey of the current state of social science methods. I will suggest on-line and other resources for finding more in-depth material to support your search for and writing about your proposed method.

There are many books and articles written on every aspect of research design and method. A rich source is Sage publications, which has a growing library of specialized texts on every aspect of research design and methods. Check out Sage's [Little Blue Books](#) on qualitative methods and [Little Green Books](#) on quantitative methods. Sage also publishes a series of videos that let readers view how to conduct research in both qualitative and quantitative studies. Examples that show the breadth of these resources are clarifying [research method terminology](#), conducting ethical research, and [conducting oral history interviews](#). Merriam (2002) provides the standard in this field.<sup>19</sup>

***Developing the Method.*** The Method section sets out in detail the steps that the researcher took (in the thesis), or proposes to take (in the proposal), in order to conduct the study. It addresses both the development of the data collection, the participants, the research instruments (interview protocols, survey development, observation criteria, how measures are field tested, whether and how scored, etc.), and the procedure (a step-by step chronology for how the data were or will be collected). It finishes with a description of the techniques applied to the analysis of data, leading the reader to the brink of the next chapter – the Results.

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<sup>19</sup> Merriam, S.B., (2002). Introduction to qualitative research. San Francisco: Jossey Bass/Wiley & Sons.

The Method chapter should flow out of the section in the Literature Review chapter that examines how previous researchers have tackled similar issues, what shortcomings or limitations their results may have had, and how your research design will address some of those shortcomings. The Methods chapter provides the link between the Literature Review chapter which contains the rationale for the study and research questions, and the evidence to be presented in the Results. In order to make this link, the reader seeks to be assured that the data collection approach and methods used are compatible with the research questions and are therefore likely to provide convincing answers to them. In the manner of a bowtie (Unit 3), the Method chapter is the knot that ties the literature review bow to the findings bow in the Results chapter(s).

***The Rule of Thumb for the Method chapter or section is:***

*Another researcher with the same resources as you, should be able to enter the same setting and be able to conduct the same research, using the tools and procedures you describe. They should then be able to analyse the data they collect and in doing so should replicate your findings.*

A common problem in draft proposals and Method chapters is that writers tend to recapitulate the theoretical and procedural steps taken by others; material that should already have been presented in its own section in the Literature Review chapter. Keep in mind that the reader already understands what you are going to investigate, why it is an important problem to investigate, and what previous studies have been able to uncover, from earlier sections in the previous Literature Review chapter. Now the reader wants to see if your plan of attack is viable, is likely to address the research questions you have presented and is likely to produce the results you seek.

***Method section in a thesis proposal***

Let's distinguish between thesis proposals, and the thesis report itself.

In a thesis proposal, your supervisor and committee are expecting to see a proposed design and method for data collection that flows out of the literature review and research question(s) for the study. This will be sufficiently detailed to allow readers to judge how the evidence/data you plan to collect will indeed capture the responses to your research questions. It will also include limitations – why the scope of your data collection may be limited and therefore open to questions about its veracity and how you hope to address these. It may also propose how you will meet the standards required for ethical approvals, by suggesting how you will respect privacy, confidentiality, and anonymity and how you will manage any risk that your research may create for your participants. In many ways, your supervisor and potential thesis committee will emphasize the Method section of your thesis proposal, because this is where they will decide if you are ready to translate a researchable question into an operational, reliable data collection from which you draw convincing conclusions. It can be a test of your readiness as a researcher to undertake this study. So how you propose to collect your data might be a critical element for your thesis supervisor and committee to permit you to move ahead. It is also needed in detail in order to apply for the ethical review certificate (and for graduate student support grants). It therefore cannot be a “promissory note” that you will fill in when you start data collection, but it must clearly set out the steps that you intend to take.

### ***Method chapter in a thesis***

The chapter on method in your thesis itself will be much more detailed, and likely finalized after you have completed the data collection that was previously approved in your thesis proposal and ethical review application. Between the proposal and the actual data collection, the context in which you are conducting your research will create constraints and opportunities that you had not previously foreseen, and events may arise that require you to adapt your research design and data collection techniques. Keep careful notes of the events that arise and the adaptations you made. See the section below on Procedure.

### ***Signposts for your readers***

In the Methods chapter, almost no citations are needed. Instead consider providing signposts for your readers. These are sentences in text that remind the reader about previous sections that detail the material that is relevant to this section of the Method. Signposts include end of paragraph, or stand-alone sentences that might look like one of the following:

“As mentioned in the section on .... above, one limitation of previous studies has been.... In this study, therefore, ...”

“The reader will recall that, in Chapter X, the various methods used to investigate this topic included....”

“Drawing on the literature reported above in which one criticism has been that too few cases have been investigated to draw conclusions, I chose to ....”

“The work of X, Y and Z (year) was described previously. They recommended that subsequent research focus on....”

The Methods chapter is usually written before, during and after data collection, adapting to the changes and refinements that you discover along the way. The purpose of this chapter is, once again, to convince your readers that they can have confidence in the veracity of your findings. There will be limits to how far your readers can draw conclusions from your findings. These may include such factors as a small number of participants or a locational bias that limits how far one can generalize to other people or limits due to the ability of human subjects to guess what you are investigating and therefore feeding you the appropriate answers rather than their own opinions. Famous studies have documented this effect – known as the ‘Hawthorne’ or ‘Halo effect’. More about **limitations** in Chapter 8, describing the section on limitations in your discussion chapter itself.

There is a cyclical nature to data collection; Hennink, Hutter and Bailey (2011; 2020)<sup>20</sup> propose a 'research cycle' for qualitative designs that leads students

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<sup>20</sup> Hennink, M., Hutter, I., Bailey, A., (2011), *Qualitative research methods*. Los Angeles : SAGE, ISBN 1412922267: 9781412922265 (Paper)

through the selection of appropriate methods, the collection of data and then the transformation of findings. Although your finished thesis, quantitative or qualitative, has the format of a linear and logically-progressing sequence of steps, in fact each part of the thesis causes you to cycle back to previous sections, adding to and adapting these as you go. It is far from linear, and the method chapter will be also a 'work in progress' through your data collection. Don't be alarmed if this looks 'messy'; it is not uncommon to feel somewhat lost and unsure about how to proceed. It will be messy until you have cycled through it enough times to be able to bring it all into the line that presents it as a written text.

### **What is in a Methods chapter?**

1. Design
2. Participants
3. Instrument or tools development, and other data collection measures
4. Procedure
5. Analysis

#### **1.Design:**

This is the overall structure of your data collection. You describe the type of research that you use, followed by the components that your design will include in the sequence that they will be presented. It is not a detailed description of the sequence however- this will come in the section on Procedure.

The design section can sometimes be represented by a diagram or two, with or without a verbal description. It might show the chronological sequence of your steps in data collection and analysis, or it may represent how the various components inform one another.

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Hennink, M., Hutter, I., Bailey, A., (2020), *Qualitative Research Methods 2<sup>nd</sup> Ed.* | SAGE Publications Ltd; Jackson, K., & Bazeley, P. (2019). *Qualitative data analysis with NVivo.* 3<sup>rd</sup> Ed. Sage Publications.

### ***Design: Implementation and Intervention studies***

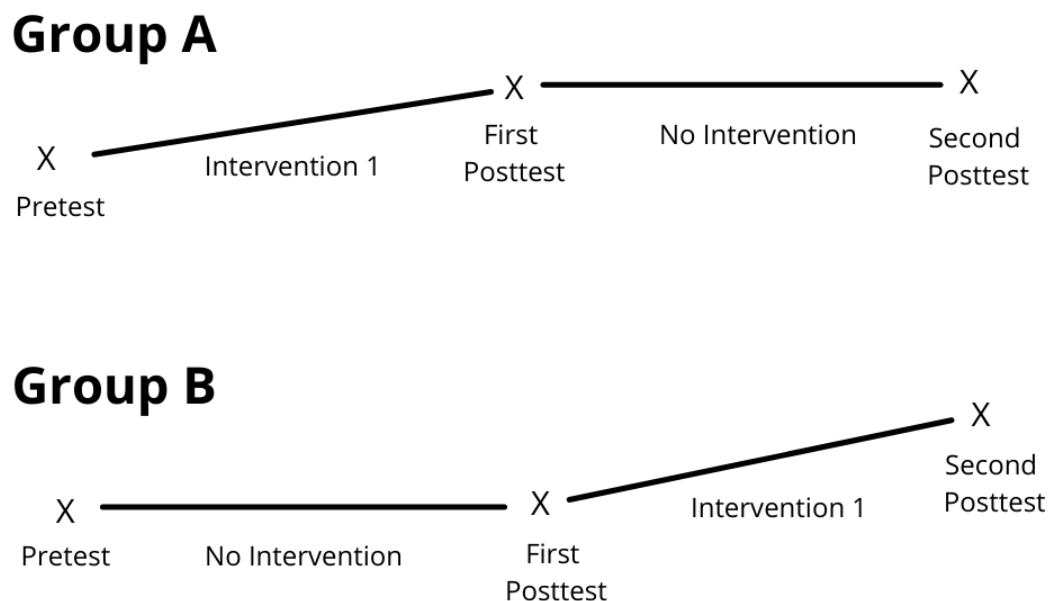
In the social sciences, and particularly in the field of education, there have been many decades of research that seek to evaluate the benefits (or drawbacks) of a new intervention, program, treatment or implementation in providing lasting change for a group of participants. Some of this research is evaluative. Evaluation studies seek to determine whether the intervention was successful, and who benefitted, how and for how long.

This type of research is crucial in leading researchers, stakeholders, policy makers and educators to be assured that a new intervention will lead to success. Until recently, the types of research questions that were addressed by intervention studies needed to be quantitative in nature. Their typical design was to give a group of participants a pre-test to determine the starting level of each person, and then to divide the group into an experimental and a control group. The former received the intervention while the latter did not. Post-testing at the end of the intervention revealed whether the experimental group had benefitted more than the control group. This 'experimental design' has many limitations; not the least of which is that human subjects are adept at jumping out of the pen in which they are housed and jumping into another. For example, the whole group continues to develop whether or not they receive the intervention, or members of the control group might participate vicariously with their experimental peers and make similar gains. We know from many studies that participants will respond positively to attention, even if it is derived only from being a participant in an interesting study or receiving the attention of placebo or control effect (the Hawthorne effect – Unit 4). Further there may be ethical reasons why it is problematic for some participant to receive the intervention while others do not; think of an experimental group receiving a life-saving drug intervention while a control group is denied it.

Here is an example of the design diagram for an intervention or an implementation study that avoids some of the pitfalls of a traditional evaluation design. Both groups get both the intervention and the control treatment, but in different orders. Data are collected at three points – beginning, middle and end.

The researcher hypothesises that the direction of the increases in the outcome measures will be shown in both groups when they receive the intervention and will not be evident when they do not receive it.

**Figure 7 -1: Hypothetical changes in scores due to an intervention**



note: The gains made by the participants are implied by the vertical axes at the left.

The relative impact of the intervention itself can be compared across the two groups. Each group acts as its own control or comparison group when not receiving the intervention.

Let's use an example to illustrate.

A Grade One class of children receives a supplemental reading program intended to raise their literacy skills when it is completed. Before the program begins, all the children are given a series of literacy tests to establish the baseline for their performance. The class is divided into two approximately

equal parts (balancing for gender, first language, socioeconomic status etc.) One half of the class is withdrawn to receive the program in the first term of school; the second half in the second term. The literacy test is repeated twice more (preferably in an alternative form so that the children are not simply learning how to ace the test). Three data points of the literacy test scores (the dependent measure) are collected with all the children – before the intervention program starts, after group A receives the program, after group B receives the program. Theoretically, if the reading intervention program is successful in raising the literacy levels of the children it should have the characteristics of the data lines in the diagram.

Recently, there has been a resurgence of interest in implementation research<sup>21</sup> Century and Cassata (2016) claim that, because implementation research is carried out with different intentions, it merits different approaches to enquiry and different methodologies. Century and Cassata define implementation research as “the systematic enquiry of innovations enacted in controlled settings *and* in ordinary practice, the factors that influence innovation enactment, and the relationship between innovations, influential factors and outcomes” (p. 181). This is ground-breaking because the intention of conducting the research may not only be how to conceptualize and describe the innovation itself, but also how to identify the conditions, contexts and other factors that influence how the innovation is enacted. The researcher might therefore be more interested in how the participants react, what they gain or lose from the innovation, than in the effectiveness of the innovation itself. In the case of field-based innovations such as policy changes, or the introduction of an innovation that is controversial, implementation research can shed light on the outcomes from the perspective of the clients, and not only from the creators.

An example of an implementation research study:

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<sup>21</sup> Century, J., Cassata, A. Implementation research: findings, common ground on what, how, why, where, and who. RRE, 2016, 40, p 169-215

Mary introduces a model and group activities for developing mindfulness and well-being to a group of teachers. Her interest is less about whether the activities “work”, but more about how the teachers take the material and use it to reflect on and make changes to their classroom practices. Mary records the conversations in the weekly discussions over several months, as well as documenting the activities she introduces each week, the participants’ individual recorded reflections, their journals of their experiences following each group session, her own field notes of the experiences emerging for herself and the participants, and their final comments about the shifts in their perspectives and practices. The evidence is matched against the components of the model, not to evaluate the model but to see how the collective experiences and the process of discussion impact individual personal and professional change.

A second example of an implementation study: Jack implements a reading program for toddlers and their parents that is designed to raise awareness of and attitudes toward mixed and same gender families. Jack is less interested in whether the program is beneficial as a learning tool, than in how the children and their parents react to learning about families with two Dads or Moms, and queer and trans parentage. Jack designs an implementation study with a focus on how the participants respond to the stories, and to Jack who delivers the implementation.

## ***2.Participants***

Recall that in Unit 3, the size of the participant group is chosen to reflect the kind of questions and answers that you seek to investigate. A single case study or an autobiography provides considerable richness and depth about one event, phenomenon or personal experience. This is valuable if the research objective is to uncover the detail and nuances of that case. It is often used as a means to document the unique and remarkable experiences of an individual. It is not generalizable to any other case, however, although it may yield further researchable questions.

Amy undertakes research on her grandmother's experiences as a working-class Chinese person growing up in a large city in India. Amy documents the history of Chinese immigration to India, the political, social and community issues that arose. Against this context she describes the remarkable resilience and fortitude that brought her grandmother to Canada, and to become the matriarch of her family.

A large-scale study may have dozens or even hundreds of participants, each yielding small amounts of data that can be aligned and compared, and analysed by quantitative methods to produce results which the reader can gauge as reliable and valid or not. These findings are generalizable to a similar sample of participants, or to a 'population' – all the members of that group. The reader therefore needs to know how to define this population – what parameters are shared with the sample in your study that allow others to define this population and therefore to make inferences and new hypotheses about how this population will respond in further studies.

Jenny's participants are mixed race married couples who live in a wealthy urban area. She notes that her study's findings of the development of each couple's relationship, awareness of race and of the mixed-race experiences of their bi-racial children cannot be generalized to other couples in other geographic locations or with fewer resources at hand. The study does suggest that further research would be useful to understand the development of mixed-race marriages.

In contrast, Cloe is working with a large data set from a government archive. She has multiple groups and 3 or 4 data points for each case. Her statistical analysis will permit her to generalize any significant findings but only about the nature of the 3 or 4 pieces of data. A rich and detailed profile that might 'explain' any findings would need her to select cases from her data set with which to carry out a further, more in-depth investigation.

Describe the participants in detail; for example, their ages, genders, socio-economic status, geographic representation, membership in your target group, etc. What is the 'population' from which you will draw your sample, and how is your sample representative of the population, or of only a subset of it? Describe how you will sample this population (random, stratified in which you take proportional representatives of groups and subgroups, self-selected, snowball sampling in which each participant nominates another, etc.). In large scale studies this will be an overview to be followed in the results section with more details about the demographic characteristics of this sample of participants. In case studies and small sample qualitative studies, however, there may be considerable detail in this section, since you will want to describe the characteristics of your participants as context for the reports of their evidence in the results section. In small samples, it is helpful to give your participants pseudonyms that you can use later in reporting the results. Without violating the confidentiality agreements that you have with your participants you can 'bring them to life' by describing them for your reader as cameos with pseudo-names rather than case numbers. Be careful when you write the cameo descriptions that you do not reveal any information that readers – or other participants – could use to identify them after your thesis is published.

### ***3. Instrument or tools development, and other data collection measures***

In this section you describe the tools that you may have created or drawn from the literature to investigate your topic. This includes surveys, questionnaires, interview protocols, and measures of outcomes (the independent variables). You may also describe the types of recording devices or software you used to recruit and interview your participants, the documents you selected for analysis, the training you gave to those who assisted you to collect and code the data.

If you field- or pilot-tested your tools, for example by trying your questionnaires, surveys, your interview protocols with a group of friends, family members or colleagues, or with a subsample of your study participants themselves, this is reported here (see the note above on field- and pilot-testing).

You may also need to describe how you arrived at the criteria for interview or document analysis categories, or other tools that you will depend on to reveal your findings. In this section it may be appropriate therefore to report not only how you developed your research instruments or tools, but also what the pilot- or field-tests revealed, and how this led to any modifications that you made to your instruments. These may be evidence of how the measures reflect the phenomena under study, either that you collect, or that are reported in the literature by the original authors of the instruments that you use.

**Validity-Veracity.** In Chapter 6, Figure 6-7 represents Validity in terms of how your measures or other forms of data collection validly reflect the population or the events and phenomena that you intend to represent. Does your evidence accurately reflect what you intended to record. **Evidence** of validity is when an outside or independent source verifies that your results apply in the setting that you intended them to represent.

**Validity in quantitative research** describes the validity estimates that you undertook to refine your instruments to meet a statistically-acceptable standard. Statistical Validity is the extent to which the conclusions drawn from a statistical test are accurate. This may depend on such variables as the size of the sample, whether there is a comparison or control group, and the statistical test chosen to analyse the data.

Evidence that your data are valid is shown by how it represents the broader population from which is being sampled. Types of evidence of validity include:

- intrinsic (face) validity – technically not a measure since it is about the look of the measure or evidence. The reader looks at the measure, interview questions, assessment criteria etc. squarely in the eye and asks if it makes sense as an index of the broader phenomena under study. This is a subjective test of a reader's judgement about what the measure or evidence should contain. As an example, if a pollster is asking adults to evaluate the legitimacy of a government's policy change that affects their income or well-being, the pollster's interview questions would need to demonstrate an impartial and fair posing of the question -

a collection of people's opinions that is not loaded by the way it is worded toward a certain viewpoint about the legitimacy of the policy.

- content validity – similar to face validity but it includes an estimate of whether the measure contains enough content to represent all the facets of the phenomenon under study. For example, for many years there has been a huge debate about whether the Intelligence Quotient (IQ) tests are a valid measure of intelligence. Is the something termed 'intelligence' a broad representation of human mental functioning or a subset of deductive problem-solving skills that omit such aspects of human adaptation as critical thinking, creativity, environmental adaptation etc.? So, the debate is as much about the content of the concept of intelligence as of the content of the measures that purport to estimate it.
- construct validity – are the inferences made from the data correctly and fully representing the theoretical concepts that they purport to measure? In the case of a test or survey or questionnaire, what are the component factors that contribute to the overall score and are they sufficient to fully represent the phenomenon under study? Again, using the example of IQ, are the tests which purport to measure intelligence fully representative of the broad range of inductive as well as deductive skills that some researchers would claim to be markers of human intelligence?
- other types of and terms for validity such as empirical, logical, convergent and discriminant, etc. These all have to do with convincing that skeptical reader that they can trust the data or evidence that you collect and present with your instruments.

In **qualitative studies, validity or veracity** are often established by 'triangulation'<sup>22</sup>. Sources external to the data collection are shown to match the trends in the research findings, such as:

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<sup>22</sup> Denzin, N. K. Triangulation 2.0. (2012).6,80–88.doi: 10.1177/1558689812437186

- independent expert ratings of the phenomena under study match the trends in the findings. For example, the questions asked by pollsters in telephone interviews about a new government policy, matches how the electorate votes in a by-election.
- independent ratings of the instruments themselves, to ensure that they reach high levels of acceptability. For example, the researcher develops videoclips purporting to show evidence of good teaching practices. Before asking teachers to identify these practices, the researcher asks a panel of expert educators to rate the content contained in the videoclips to show that, indeed, the video clips contain the teaching practices that will then be judged by the teachers.
- independent evaluation of the instruments themselves (such as interview protocols, observations, criteria for analysis), to ensure that there is a good chance that they will reflect the needed evidence following the completion of data analysis by the researcher, independent verification of a subset of the evidence, using the system created by the researcher to identify main themes and subthemes in the data.
- Personal reflection: Often in the initial chapter of their thesis, the author may include a section about their own journey in arriving at their research topic. The purpose of this is not to impress the reader (although these accounts are often impressive) but to let the reader know about your expertise in this field and your interest and experience with this topic. This serves to let the reader know that you are personally immersed in this field and are acting as a source for attesting to the reliability of your research.

**Reliability: consistency.** In the diagram 6.7 in Chapter 6, **Reliability** is indicated by arrows that point in to the measures themselves, emphasizing the internal structure and consistency of the measures or data collection methods. The purpose the internal consistency or reliability measures is to show your reader that they can rely on the findings you will report, even if they have

questions about the measure's validity. **Evidence of reliability** may include estimates such as:

In quantitative studies:

- Cronbach alpha and other estimates of item reliability in a questionnaire or survey.
- Inter-rater reliability; ratings of the correlation of values set by two independent raters of a series of recordings, interview transcripts or other ratable data such as that collected from a pilot group. Agreement between the two raters of 80% or better is usually acceptable as an index of reliability for the ratable data.
- Test-retest reliability when the same participants complete the same or another version of the test or questionnaire at different times

In qualitative studies:

- In studies using interviews, participants are often sent a transcript or recording of their interview responses and asked to verify that these did indeed accurately represent their opinions, perspectives and experiences.

***A note on field- or pilot-testing:*** it is important to test out in the early stages of your data collection the 'instruments', such as your interview protocol or survey drafts, or the observation criteria that you plan to use with your main participant group. Sometimes this may be the first few interviews or surveys that you collect, but this might diminish your participant sample, so consider asking a colleague to respond to a 'mock' interview or to a draft survey or questionnaire, or to listen independently to a recording of your pilot data to spot mixed messaging, omissions and discrepancies, or to apply your draft coding system. The result may be that you make adaptations to your original data collection instruments, thus raising the validity of your participants' responses, and letting the reader know that the results they will read in the next chapters are based on careful instrument development. Keep careful notes of how you conduct pilot- or field-testing. This will be included in a section of your thesis methods chapter under the 'Instruments development' section or a similar heading.

#### **4. Procedure**

The proposed data collection method in your thesis proposal will be tentative. Its purpose is to fulfill the requirement to match your intended data collection with the research design you propose. When you undertake the thesis data collection itself, however, it should be meticulous. Think of all the possible communication needs of your participants; their right to be informed about the purpose of your study, their right to withhold permission and to withdraw their own contribution, the care you will take to ensure confidentiality, the permission forms that must be signed, the professionally-appealing materials you will need to have ready, the sequence of events you will follow, the steps you must build to maintain an ethical process. Think of everything that might go wrong and how you will deal with it (extra copies of materials, noise while recording interviews, dead recorder or phone batteries, interruptions, unwanted intercom announcements, people walking in, etc.). Then, consider what you will need to code the information into a form that reflects the questions you are investigating.

It was only when I worked with a seasoned colleague who insisted on reviewing every checklist, - every questionnaire, permission form and instructional sequence, every time schedule, availability of rooms, state of recording equipment, - that I understood the importance of being prepared; of knowing exactly what I was aiming to collect, and how I would be coding the data once collected, so that coding sheets were ready and matched the instructions and data collection sequence that I had planned. Were there cookies for the staff room, treats, thank you cards or small gratuities for the participants, and if so were they ready to present? Did we have details about when and where to park, to rendezvous after we had left the research site, the norms and protocols of the schools in which we worked in terms of dress codes, chewing in class, space allocation etc., what permissions we needed to produce, etc. Even so, we ended up with delicate audio recordings of teacher talk that contained loud cracking noises – the results of one of our staff chewing nuts near a microphone!

***Presenting the procedure section:*** The procedure section of your thesis therefore sets out in sequence the steps that you took to collect your data. It has to have sufficient detail that another researcher could replicate it. If some of these are lengthy, such as your questionnaires, profiles of multiple participants, lengthy instructions, permission forms and interviewing protocols, they should be included in an appendix which includes a table of contents. Provide some signposts in the procedure section of your thesis to guide your readers to the appropriate sections in the Appendix. Or place the information as a table or two in text. As noted above, I have struggled with theses that put information into the appendix that was critical to interpreting the method or findings. For example, in one thesis, all participants were given a code number, and their results were reported as a list by code number. The participants however were clustered into groups that were part of the design of the study, although their group information was not contained in the code numbers that they were assigned. The result required that the reader flip back and forth between to appendix and the main body of the thesis to find out which participant belonged to which the groups, in order to make sense of the findings. Find ways to assist your reader to navigate through the complexity and length of your study.

This is especially important for the next, Results, chapter. In an electronic version of your thesis, it is nearly impossible for the reader to keep track of the writer's line of reasoning if they must scroll frequently to figures, tables and the Appendices. The key term here is 'frequently', since your data may be more handily presented in tabular form than in text. Think about describing your measures or analytic categories with tags such as shorthand names or group identity codes rather than numbers or other meaningless coding markers, so that the reader can more easily follow your line of thought.

Hand hold your reader – see Unit 1.

### ***5. Plan of Analysis***

In a thesis proposal, the plan for analysis is usually a brief statement of how you intend to analyse and present your data. This statement might be linked

to the section in your literature review where you have summarized the types of methods and analyses used in previous studies of this type.

In the thesis itself, the analysis section of your methods chapter adds to your growing presentation of the steps you took to ensure the veracity or believability of your findings.

### **a. Analysing Quantitative Data.**

There are several electronic statistical packages that contain a wide array of statistical techniques, from relatively simple computations of central tendency (means, medians, etc.) and simple comparisons between groups such as t-tests and  $\chi^2$  (chi-square), to complex multivariate statistics. The standard is the [Statistical Package for the Social Sciences](#) (SPSS) acquired by IBM in 2009. There are now multiple versions of this suite of electronic resources, from student-focused to large data-base applications. Your university library most likely holds a license to use the SPSS software, allowing you to use it without cost to you. There may also be training programs, workshops and advisors to help you select your analyses and interpret your results. Check the SPSS Survival Manual (Pallant, J., 2020, 7<sup>th</sup> Ed.) at <https://www.mheducation.co.uk/spss>

### **b. Analysing Qualitative Data.**

***Transcribing audio- and video-recordings.*** There are on-line transcription sites that take the audio portions of your data recordings of interviews, discussions etc., and produce a printed transcript that can then be used for analysis. Some of these audio-to-text transcription services are:

- [Dragon Naturally Speaking](#). For Mac users, there's also an OS X edition called Dragon Dictate.
- [InqScribe](#) does not use any speech recognition technology, but it can be used in conjunction with such speech-to-text transcribers as Dragon Speaking Naturally, and Apple dictation.
- [Temi](#). This is a service to which you send the audio transcript from your cell phone recording, and they return a text version by email.

- [Otter](#). This assistive technology transcribes your notes, live meetings and recordings, and can recognize different speakers. It has a keyword search capability
- [Google Meet](#) (formerly Hangouts meet). This app lets people record video conferences and receive a document version of discussions, slides and other materials etc. that can be edited by participants in real time.

**Thematic analysis.** As noted above, qualitative evidence provides a rich, deep and nuanced response from participants about the phenomena under study. It might take the form of verbal interview transcripts, audio-visuals as in focus group video-recordings, or ethnographic accounts and stories. It might be observational or documentary. Researchers seek to analyse the complex evidence of rich description supplied by human participants. An important characteristic is that qualitative researchers often work inductively, filtering their evidence mentally as they cycle through their results and gain increasing familiarity with the trends in it. Their task is to partition it into main- and sub-themes, and by using their own understandings of the evidence and of this line of field of study as a filter to structure the material within the theoretical and conceptual frameworks that they are examining. As Anderson (2007) notes, thematic analysis is “constructivist in epistemological stance, incorporating objective and subjective data in order to provide inter-subjective interpretations that rely on the researcher’s intuitive understanding the findings”. This task is not easy. Not surprisingly, students in the middle of a qualitative data analysis sometimes say that their ‘brains hurt’, or that they are confused or even defeated by the enormity of the task. If this is happening, take a break or a nap, and trust your brain to incubate the material.

The themes that emerge from the data are not necessarily the topics that were included in the data collection. It is not uncommon for researchers to look for participants’ responses to the topics that formed the interview questions, the survey or questionnaire. Remember that these topics represent the operational definition of the research question, and not the answers that the respondents

provide. The topics are a good place to begin to parse the evidence, but you are looking for the variations in responses; what is different, contrasting and surprising in the answers that the respondents gave.

For example, in a study of the pedagogical beliefs of early childhood educators, their responses to questions about their pedagogical philosophy were triangulated with their actions during observation periods in their day care settings. The themes that emerged were not only what they said they believed, but also how this played out in their practices and decision-making priorities, which differed widely from one setting to the next. The interview questions asked what they believed and did and why they did it, but the thematic analysis showed divergent beliefs and priorities about children's safety, children's decision making and independence, and socialization. These could be verified by the practices that they displayed when they were with the children.

There are sources that assist you with qualitative thematic analysis. If you use one of these, describe the steps you intend to take or did take. Remember the orange layer in the literature review funnel in Unit 5? My preference would be to include this in the analysis section of your method chapter, citing the articles that you use, and referring the reader back to the section of the literature review (where you describe the analysis methods you selected for the study. That is, when presenting your analysis method in this chapter, it is better not to start into a long tangent of why you chose this method and what the gurus in this field had to say about it, but to refer the reader back to where you set this out as part of the review of pertinent literature.

Applying the steps, you begin the analysis for your Results chapter.

Here are some sources for qualitative thematic analysis:

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77–101.  
<http://doi.org/10.1191/1478088706qp063oa>
  - Braun and Clark recommend six phases for the analysis of themes in qualitative data:

- familiarization with data,
  - generation of initial codes,
  - searching for themes,
  - reviewing themes,
  - defining and naming of themes, and
  - writing the results.
- Miles, M.B., Huberman, M.A., & Saldana, J. . (2020). *Qualitative data analysis: A methods sourcebook*. 4<sup>th</sup> Ed. Thousand Oaks: Sage Publications
  - Anderson, R. (2007). Thematic Content Analysis (TCA) 1 Descriptive Presentation of Qualitative Data Using Microsoft Word
    - While Anderson suggests that thematic content analysis (TCA) may not be a sufficient framework for the analysis of some types of data sources, Anderson suggests 12 detailed steps to thematic content analysis (TCA) of textual data such as interview transcripts.
  - Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. Sage.

Faced with sometimes hundreds of pages of transcripts, thesis writers use a wide array of techniques to bring their data into order: Huge sheets tacked onto their walls with reference markers and coloured highlights; binders with pages ordered and reordered; card systems with citations, quotes and pages and cross references; and, of course, one of the software systems that have sprung up to assist them with this process:

Qualitative Data Analysis Software (QDAS)

NVivo™ Typeform™ Dedoose™ Atlas.ti™

Woods, M., Paulus, T., Atkins, D.P., Macklin, R. (2015-6). Advancing Qualitative Research Using Qualitative Data Analysis Software (QDAS)? Reviewing Potential Versus Practice in Published Studies using ATLAS.ti and NVivo, 1994–

2013. *Social Science Computer Review*, 34(5), 597-613.

<https://doi.org/10.1177/0894439315596311>

## **Appendices**

Often the instruments that you use are reported in full in the Appendices of your thesis or proposal. These would be the full version of surveys, your interview protocol, your scoring schemes if any. The Appendices may also contain your letter of recruitment, your ethical review certificate (see below) and other evidence that the reader can inspect if they have queries about how you proceeded. Sometimes, tables of the original (raw) data are included, where these can shed light on the arguments you make in the results chapter.

## **Limitations**

All studies have limitations. Start thinking here of what might constrain your findings, and the inferences you draw from them. Qualitative studies do not claim to provide cause-effect evidence beyond the findings supplied by individual opinions. If it is important for you to identify what is cause and what is effect in the event or phenomena you wish to study, a quantitative design with comparison or control groups, and possibly a multi-stage design or a mixed methods approach might be needed. Since most student theses do not undertake such expensive and long-term research, your own study may only be able to show evidence of co-relationships, or of your participants' convictions about what led to what, or a combination in a mixed method design. Ultimately, this might be a weakness of your study - one that will not lead to failure but that will need to be acknowledged in the 'Limitations' section of your Discussion chapter.

Remember the “So what?” question in Unit 3? Examiners love to ask this question, in order to see how far you are willing to defend your findings. It is a question about the importance of your finding in relation to the overall field of study. Be honest; you may only be able to say that your findings are intriguing but cannot lead to a definitive conclusion and should be followed by further

research to establish its veracity. Or you may defend your approach by saying that conceptually it was not your intention to investigate the broader field, nor to draw comparisons among your cases but to examine in depth the experiences etc. of your chosen case or cases.

### **Ethical considerations**

Get to know the ethical considerations that you are required to demonstrate in your research. It is important that you thoroughly understand “risk”, “informed consent” and “right to withdraw”.

Your university will have requirements that you need to follow to receive acceptance of the ethical implications of your research if you intend to work with human subjects or to investigate personal information. In our university, a central committee examines all research proposals and issues a certificate to indicate that the research meets the standard of ethical approval. Not only the university but also the organization in which you conduct research, such as a school board, community group, not-for-profit organization, may have a procedure for ethical approval of projects involving their clients. This requires you to receive approval from both organizations before you can begin to collect your data.

The criteria for Canadian researchers when using human participants or their personal information for research purposes was set in the 1998 [Tri-Council Policy Statement](#): Ethical Conduct of Research Involving Humans (TCPS). In Canada, the Tri-Council is made up of the three federal funding bodies for research involving human subjects: Canadian Institutes of Health Research (CIHR), Natural Sciences and Engineering Research Council of Canada (NSERC), and the Social Sciences and Humanities Research Council of Canada (SSHRC). The Tri-council issues a set of joint guidelines for how ethical standards are to be maintained in conducting research. This 1998 resource, with amendments to 2005, governs how research with human subjects must consider such issues as confidentiality, researcher conflict of interest, risk to participants, and informed consent to participate.

The criteria that an application for a research study to meet ethical standards must consider are:

1. respect for participants,
2. informed consent,
3. specific permission required for audio or video recording,
4. voluntary participation and no coercion,
5. participant right to withdraw,
6. full disclosure of funding sources,
7. no harm to participants,
8. avoidance of undue intrusion,
9. no use of deception,
10. the presumption and preservation of anonymity,
11. participant right to check and modify a transcript,
12. confidentiality of personal matters,
13. data protection,
14. enabling participation,
15. ethical governance,
16. provision of grievance procedures,
17. appropriateness of research methodology, and
18. full reporting of methods.

Additionally, the researcher must consider whether he or she has a conflict of interest in conducting the research, whether there is a moral hazard, and the investigator's duty of care. Research with indigenous people raises further questions of rights and their implications<sup>23</sup>.

This lengthy list can be considered under several topics.

Providing assurance that:

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<sup>23</sup> Vanclay, F., Baines, J.T., & C. Taylor, N. (2013) Principles for ethical research involving humans: ethical professional practice in impact assessment Part I. *Impact Assessment and Project Appraisal*, 31(4), 243-253, DOI: [10.1080/14615517.2013.850307](https://doi.org/10.1080/14615517.2013.850307)

- The participants are fully informed about and give consent to their participation in the study, and are not being coerced into participating as a result of the nature of the study or the status of the investigator,
- Participants have the right to withdraw from the study without penalty or consequence,
- Their identity will not be revealed, and their data will not be available to others but will be securely locked during the study, and destroyed afterwards
- Participants will not be put at risk, (physical or mental) as a result of participating and will have a means to express any grievances.
- The study itself is sound methodologically.

Studies in which participants are children or people who are at risk will be more thoroughly scrutinized by an ethical review committee, to ensure that parent or care-giver consent meets the ethical equivalent of informed consent.

The Covid19 pandemic is likely to have influenced the criteria for ethical conduct, since more data on human subjects will be collected on-line and by other remote means, leading to questions of confidentiality, privacy and security of the data. Check the Tri-Council policy updates if you are embarking on a new study.

***a. Act ethically.***

More than just following the guidelines for ethical consent and fulfilling the requirements, as a researcher you must act ethically. This includes being respectful of your participants, acknowledging the risks that they think they are taking by participating in your study, their concerns about who might read the final version of your research and whether they will be identified. Participants must have the right to withdraw from your study at any time, and to have their contributions to that point removed, without penalty to them.

## ***b. Plagiarism***

Acting ethically also means giving credit where it is due. Failing to do so is plagiarism, and it could cost you your degree.

Plagiarism is the “theft of intellectual property”<sup>24</sup>. It involves not only using the words of another author without giving credit to that author, but it extends to a fairly murky boundary between your own ideas and words and those of another.

Maurer et al. (2006) list the following sources of plagiarism:

- turning in someone else's work as your own
- copying words or ideas from someone else without giving credit
- failing to put a quotation in quotation marks
- giving incorrect information about the source of a quotation
- changing words but copying the sentence structure of a source without giving credit, and
- copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not

[Plagiarism.org 2006]

There are various ways that writers plagiarize such as paraphrasing, using similar ideas without crediting the source, changing grammar and using synonyms, cutting and pasting from the vast amount of information online, crediting to sources that are no longer available on websites, and providing misinformation about sources.

The murkiness of plagiarism arises when an author passes off material that is not their own, sometimes unintentionally or accidentally. This can happen because the author is not familiar with the citation style required by their university. As a reminder, make sure you know and are fully conversant with the style guide requirements of the American Psychological Association, now launching the 7<sup>th</sup> edition (Unit 3).

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<sup>24</sup> Maurer H., Kappe F., Zaka B.(2006). Plagiarism - A Survey. *Journal of Universal Computer Science*, 12(8), 1050-1084.

Another source of unintentional plagiarism may be when your own ideas that you have carefully fostered, developed and described, coincide with those of an author who has already published them. For example, you might have developed a theory of how differing personalities respond to different situations, or a hypothesis about the gendered roots of a professional identity. If someone else has already expressed these ideas in print, it is your responsibility to find them and to credit the published author as the source of the ideas. This has implications for the thoroughness of your literature search and the presentation of your review of the literature (Unit 5).

There is also a type of self-plagiarism, where one copies one's own ideas that have been published elsewhere under a copyright, without referencing that source! Many thesis writers have already embarked on publishing by submitting early drafts of their research to journals. Be careful in writing your thesis that you credit your own writing when you are recapitulating similar material.

There is also a fine line between original work and work supplemented by various software programs. For example, if a writer prepares a paper in a language other than English, then uses a translation program, followed by a tidying through a software program such as Grammerly™, is the resulting paper the author's own original work, or is it the shared work of the author and the software specialists who wrote the programs to convert it?

Finally, there is intentional plagiarism. This is a deliberate piracy of someone else's writing presented in your thesis as if you were the source. I've seen thesis drafts and a proposal that presented huge sections of someone else's ideas without giving credit to the original author. The word 'plagiarism' comes from the Latin 'to kidnap'. In a research lab, there may be fear that others are kidnapping your ideas and bringing them to print before you are able. It is the responsibility of both you and the manager of the projects to ensure that this does not happen.

I'll note that I have also read one thesis drafts that was almost entirely made up of quotes from others, fully attributed to their sources, but without any

binding statement to show the original thinking of the author; a clear violation of the requirement that a thesis must consist of original material.

Famously one of the graduates from my university was found to have plagiarized sections of others' writing for his Ph.D. thesis. This person, employed in a position of high responsibility and trust, lost not only his doctoral degree, but also his job and his reputation.

# UNIT 8: Presenting the findings

**Key concepts previously encountered in Units 1 to 7.**

## **Unit 5 - Literature Review**

This is why the method I have chosen is appropriate

This is how I plan to analyse the evidence I collect

Theoretical and conceptual frameworks

How do you construct a lit review?

## **Unit 6 – Formulating a researchable question:**

Defining a research problem –

**Action** sense of problem - What I'm trying to do/find out. "There's little/no research" is not a good reason to undertake the study.

**Source** sense of problem – What led to the problem - "What are the characteristics?" – descriptive 'look and say' questions

**Context** sense of the problem – What needs to be done. The broader picture but not the immediate question.

**Primary source** sense of problem – Why this problem exists: "From what we already know from previous research in the literature, the problem that now needs to be addressed is..."

Defining the elements of a question

Operationalizing each term

Taking a Quantitative or measurement-based approach or a Qualitative approach

Convincing your reader: Validity, veracity, reliability and confidence

## **Unit 7 - Method:**

Design: Implementation and Intervention studies

Participants

Instrument or tools development, and other data collection measures.

Procedure

Plan of Analysis

- a. Quantitative analysis
- b. Qualitative analysis

Appendices – helping your readers navigate

Limitations

Ethical considerations

### **Summary of Unit 8**

- Making sense of your data
- Qualitative thematic analysis: Strategies for finding the themes
- Quantitative data - What to present
- Presenting the results – sequencing the parts
  - Holding the reader's hand
- Strategy – Do I need to reframe?
- The "So what?" question revisited
- Some resources for qualitative data analysis

In the previous unit, method, we discussed how you might present a plan for how to tackle analysing your findings in order to present it to your readers as a justifiable and valid approach to your interpretation of your data. In the Results chapter, the results are presented, following the plan you proposed.

There are as many forms of data analysis as there are theoretical approaches and data collection methods. In previous units the main quantitative and qualitative approaches have been mentioned, with links to resources to explore each one further.

Forms of analysis include–

#### **Qualitative:**

discourse analysis, content analysis, conversation analysis, narrative analysis, critical analysis, grounded theory, and thematic analysis of text, observations, interviews, focus groups, documents.

#### **Quantitative:**

Ranging from application of measures of central tendency (means, medians etc.) to complex multi-variate analysis, factor analysis, and meta-analysis.

### **Making sense of your data.**

What to select:

#### ***a. Qualitative thematic analysis:***

Before the main analyses that respond to your research questions, you may want to think about and possibly address some of the following:

1. what evidence do you have that your procedure was objective and arm's length from your own interpretive biases (such as the extent and depth of your field notes, the steps you took to ensure that the ethical obligations you undertook were preserved, etc.).
2. How did you undertake the analysis so that the evidence itself could be identified?

3<sup>rd</sup> party independent analysis of a part of the data ensured that the themes corresponded with those identified by an outside authority;

The respondents themselves reviewed and amended the transcripts of their interviews,

Triangulated with other sources of data, etc.

3. What evidence do you have to ensure readers that the data collection met ethical requirements  
minimizing coercion to participate and researcher bias;  
deriving evidence that third parties, or the participants themselves could independently verify?

As you begin your main analysis, your data set may be enormous. Typically with qualitative data, you may have amassed pages of responses, perhaps transcribed into a binder load of printed pages with participant pseudonyms, dates and field notes, or stored as charts that cover your room's walls, or held in carefully identified, dated and sourced electronic files of

transcription. They may be organized through one of the software programs discussed in the last unit (NVivo™, Dedoose™), or in citation managers (Refworks™, Endnote™). You may have highlighted possible themes electronically or with markers, cross referenced them by keywords, and perhaps added coloured stickers or electronic connectors to flag interesting and unexpected data. Your data may be print transcripts of interviews, observations, focus group discussions, documents, and other sources, sometimes with several sources in one set.

You may be unsure of how to move from the categories or topics that you introduced in your interviews, observations, surveys etc., to the themes that are emerging from the data set. You try not to select the topics that you brought into the data collection as your analytic themes, but to be open to the themes raised by your participants. These are the jumping off points for your thematic analysis. It is an inductive process, and not always a comfortable one for high-verbal, sequential, deduction-inclined researchers. As noted in unit 7, you are trusting your own brain to be the filter through which your data will be separated and flagged. People ask, “Have I done this right?” There isn’t a recognized right or wrong way to do this; the objective is to document the steps you took and the resultant findings so that your readers can see that you were objective, systematic and thorough.

In Unit 7, section 5: Analysing qualitative data, techniques for data analysis and software supports were mentioned, including steps to develop codes for verbal data. In either the method chapter of your thesis or in this Results chapter, you will clarify the selection criteria that you eventually select to analyse and report your data.

Here are some strategies for selecting your main findings for analysis and commentary:

- Read and re-read your transcripts. Become so familiar with them that the themes represented by one or more respondents start to stand out.

- Your research questions are a main driver for your search for answers from the data. But they should not be the themes that emerge.
- A portion of your participants raise this issue or responded in this way to this question. In your justification of this thematic analysis, the portion (more than two, half, etc.) is explicitly set by you as a significant indicator of a theme.
- If certain participants are key informants compared to others, their responses are selected, and other evidence is compiled to support them. Be careful however not to ‘cherry-pick’ participants’ data that only reflect your views or the theoretical base that you posited, at least without comparing and contrasting them with other perspectives. Your presentation needs to show that you were objective in selecting your themes, even if these themes become the main findings of your study.
- Evidence to support veracity –You look for the correspondence between the evidence you marked and from triangulation or 3<sup>rd</sup> party analysis.
- Participants may respond in ways that suggests priorities or hierarchies of importance within the data. These could help you rank the most to least important or focal themes.
- Ask yourself what is surprising/ unexpected that emerges from your data. This is an important source of themes in qualitative analysis, because it is taking you and your reader beyond the expected, and potentially opening new findings or adding nuances to your thematic analysis.

Some examples:

Joanne recalls that she kept seeing a disparity between what her respondents were saying and how they were acting in their classrooms. She reports “I kept resisting this. I didn’t want to recognize it. They were telling me about how they planned for children with low language skills in their activities, but when I observed

them, these kids were sitting by themselves, not participating and not sure what they were supposed to be doing”

When asked what was surprising about her data about identity and belonging, collected with 2nd generation Arab speaking youth, Mina noted “It struck me that the more they were integrated with their peers, and the more they identified with their current workplace, the stronger their use of slang words and the styles of speaking of Canadian youth. Conversely, the youths who spoke a less fluent form of their second language tended to feel their greatest sense of belonging when they were with their parents’ friends and the Arabic-speaking immigrant community”

### ***b. Quantitative analysis***

***Pre-amble stuff:*** Before the main analyses that responds to your research questions, what evidence do you have of the validity and reliability of your instruments? Describe the results of the steps you took to create instruments (third-party or independent verification of interview and observation coding schemes, alternative forms of surveys, protocols etc.) to show how you established that they were valid and not subject to respondent bias.

What are the main characteristics of your participant groups (means and variance scores, demographics)? Keep your ethical obligations in mind here – take care not to report descriptive information that would reveal the identity of any participant. For example, use pseudonyms or code numbers, and do not report workplace, economic or other demographic data that would single out one or more of your participants.

What evidence do you have to ensure readers that the data collection met ethical requirements (minimizing coercion to participate and researcher bias; deriving evidence that third parties, or the participants themselves, could independently verify)?

I often turn to the Appendix in a thesis that shows the letter used to recruit participants to the study. This letter tells a great deal about what the participants understood to be their task in agreeing to the study. For example, I would be sceptical of the objectivity of results of a study in which the recruiting letter told

the prospective participants what the researcher hoped to find or assumed would be revealed:

“How do educational institutions perpetuate stereotypes of race (or gender, or?) through their curriculum?

How obligated do you feel to convey these stereotypes?”

Alternatively, the recruiting letter might ask

“In the required curriculum, do you have any concerns about the ways that differences in race (or gender or?) are portrayed? If so, how do you deal with these concerns?”

### **Presenting your results.**

The main task of reporting your analysis of the results is to address your research questions – (“Are there differences between...?” How well did the intervention work? etc.).

***Holding the reader’s hand.*** The key to readers finding their way around the results is to add side heads, titles to tables and figures, and reminders about what was presented earlier, to create signposts for them to follow. It’s OK to briefly recapitulate what you are doing (without lots of references and a restatement of the method), reminding them of which participants you are presenting, reminding them about the key variables, the instruments and where the readers can find the full details.

Use tables, graphs and figures where possible to distill the data into a reader-friendly form. Give such graphics full headings that represent the data being presented and that allow each table or figure to stand alone. Enclose the key to interpreting each of the graphics. Think of projecting each table at a presentation, or at your defense, with sufficient labelling to be almost self-explanatory. Note that the APA style manual Edition 7, treats figures and Tables similarly: with bolded table or figure number at the top, followed by the title, before the graphic itself.” For example:

**Table X**

Percent of participants responding to each question by gender and age.

Heading 1	Heading 2	Heading 3
1	X	X
2	X	X
3	X	X

Once again it is important to stress that there is no correct sequence to the presentation of your results. Unlike publication style guides, there is not a universal standard for how one presents a thesis, beyond the basic requirements that you convey to your readers that they can be confident in your results, and that you are consistent in how you present your material. So final decisions about format and content will ultimately rest with your supervisor and committee. Here however is a template for presenting your results that attempts to be “reader friendly”.

Small stuff first: Evidence of the veracity of your measures/observations/sources: Size of sample, representativeness of sample, how many and who were the resulting participants, Tables of demographics of your participants, figures and graphs, etc. –

*Quantitative* – items analyses, validation and reliability estimates of your instruments if applicable, main data trends prior to in-depth analysis (Tables of means, etc.), details of measures;

*Qualitative* - the instrument adaptations following piloting or field testing, adaptations to the design that resulted from the actual data collection in the field, how field notes were used, field note summaries etc. The main question(s): Begin with a brief recapitulation of each research question –remind the reader why the literature led to the question by *briefly* summarizing who said what, as presented in the Literature Review. Don’t start a new literature review here, however; provide signposts such as authors, sources and key concepts, and literature review section

headings, to allow the reader to trace back to the appropriate section in the Literature Review and other previous chapters.

- a. Qualitative narrative, ethnographies and case study – The findings may not follow a ‘results’ format but may document the unfolding of the evidence.
- b. Iteration, foreground may become background, background may reveal new findings, intriguing variations
- c. What has emerged that is important (not trivial) that I might not have thought important at the outset?

My own doctoral supervisor used to say, “*Take care of your data and your data will take care of you*”. I didn’t fully appreciate this until I became a fully-fledged researcher. What he meant was that, if I keep detailed notes of what I did and why I was doing it, at some point those notes would be needed to show that the study was carefully constructed, the data painstakingly collected and analysed, and the interpretation was believable.

### **Strategy – do I need to reframe?**

You prepare an outline of your main results matching them to your main research questions – but they don’t fit! What are you to do?

This is not the end of your thesis journey! If the results did not pan out as expected, it does not mean that you have to scrap the work you’ve done. It’s OK to re-adjust the questions. Indeed, if your results that emerge from your carefully implemented data collection do not fit the questions, the literature review which justified them and the theoretical base on which you depended, you may be breaking new ground! This merits a different or at least a revised thesis.

Ask yourself:

- What will give context and meaning to this modified presentation?
- Do I need to modify, reemphasize or even change the literature?
- Does my research question need restructuring to fit the data?
- Do the results fit the original research question, or do I need to modify/tweak the question?

- Do I have some excellent evidence/data here that I didn't anticipate?
- Do I need more analysis to bring it out?
- Has there been a shift in foreground and background that justifies a change in how I emphasize the results?

Here are two examples.

1. The indigenous workers in a South American country developed a social movement with an identity based on the pre-industrial agrarian skills and practices and spiritual beliefs that had marked their cultural past. As the movement grew, members in both the urban ghettos and the rural communities swelled the numbers. The researcher conducted interviews with movement leaders, key informants, and with those opposing them; government officials and industry bosses. The expected findings, that the government and industry were disregarding indigenous cultural knowledge, skills and beliefs, faded into the background of the results. Instead, the leaders and informants of the movement saw it as the beginning of a social revolution in which workers would assume ownership of the mining and metal industries and move toward a new social order in the country. Those opposing them were fighting to control their hold on power. This thesis therefore called for some literature on social movements that assume political power.

2. A thesis had extensive data of a survey of parents, teachers and principals. The premise of the thesis was that gender played a part in the responses. No significant findings emerged on gender, but it was clear to the reader from the tables listed in the Appendices that the responses of the three groups differed markedly. Why did teachers and parent respond so differently from principals? With whom did each group correspond, and on what variables? A phase two investigation that examined the reasoning used by members of each group was needed.

### **The “so what?” question revisited.**

This brings us back to that pesky “so what?” question that is a favourite at the oral defense. Step back and ask yourself “So what?” What do my data tell me that is important and that contributes to the existing field that I reported in the literature review, or that is a tangential field of research? Do I need to add to the literature I presented in order to strengthen the justification I made for conducting this study?

### **Some resources for qualitative data analysis.**

Hennink, M., Hutter I., & Bailey, A. (2020), [\*Qualitative Research Methods\*](#), 2<sup>nd</sup> Ed, Sage Publications Ltd.

King, N., Horrocks, C., & Brooks, J. (2019). [\*Interviews in Qualitative Research\*](#), Second Edition. Sage Publications Ltd. UK

Miles, M. B., Huberman, A. M., & Saldana, J. (2019). [\*Qualitative Data Analysis: A Methods Sourcebook\*](#), 4th Edition. SAGE Publications, Inc

# UNIT 9: Closing the loop – The Discussion and the Abstract.

## Key concepts previously encountered in Units 1 to 8

**Unit 1.** The interconnected-ness of the elements of a thesis

Meet the reader - those who need to be convinced

Your data will speak for you

**Unit 2.** Working with your supervisor.

Your external examiner

**Unit 3.** Structure of a thesis – the Discussion “Why does this matter?” Tying the bowtie.

**Unit 5.** What is a literature review, and why is it important?

Theoretical and conceptual frameworks

**Unit 6.** Research questions – Formulating a researchable question

Defining the elements of a question

**Unit 7.** Plan of Analysis

Limitations

Ethical considerations

**Unit 8.** Making sense of your data

Presenting the results – sequencing the parts

## Summary of Unit 9.

- Purpose and focus of the discussion.
- Stepping back.
  - a. Summary
  - b. Main findings
  - c. Surprising and novel findings
  - d. Conclusions
  - e. Implications

- f. Recommendations.
- g. Limitations.
- Writing the Abstract - In a nutshell.
- Structure of an Abstract
- Fake news and the intent of the thesis (Unit 1).

After days, weeks, perhaps months of being immersed in your data, and having finally presented it in an organized and coherent way, you now turn to the Discussion chapter. Take a deep breath. It's like starting a whole new project!

The purpose of the Discussion is to tie together the results and the start of the thesis, by revisiting the literature and reminding the reader of how it led to your research questions. Then you examine your results, in light of the original intent and the state of the literature that you previously analysed. This process requires that you stand back in order to look at both the trees (your results) and the perimeter of the forest (your purpose and overall structure for the thesis).

### **Stepping back.**

Your readers too have reached this chapter after being immersed in multiple pages, tables and graphics of the minutia of your study. It's now time to step out of your own lenses and step into the shoes of those kindly, smart and skeptical readers who have a limited knowledge of your topic, and who need your hand to place the results into the big picture of your investigation. What do they need to be told about the overall findings of your thesis? What reminders and signposts will you provide to help them to see the total landscape, and to be able to distinguish 'the forest from the trees'?

This is a new chapter and so it should begin with a summary of your progress to date. Here is a suggested list of headings for this chapter.

### **a. Summary**

Start with a *brief* summary. Keep it brief, without citations unless necessary. Remember that most readers will have read the preceding chapters, but for those who haven't, what do they need to get up to speed with interpreting your results?

1. First, recapitulate the context for the study.
2. Second, remind the reader of the main research questions.
3. Third, provide a brief reminder of the participants, the methods used, and the analytic approach you chose to apply.
4. Now tell the reader that you will discuss the findings in light of the literature, reviewed in your Literature Review chapter.

### **b. Main findings**

Summarize the main findings and highlights, noting the outstanding results. Use side headings to mark the main findings/ results. For each finding or group of findings, remind the reader of (but don't re-present) the literature that led to this study, and then examine the findings in light of the literature. Based on the literature and the research questions, develop the arguments that tell the reader, "I anticipated that this would happen," and "This follows from the findings previously described". Remind readers of the sources (by author or event), using citations that are already in your reference list. Link your findings to the theoretical framework that you presented earlier. It is in this chapter that your own voice emerges. You are able to say that "Based on the literature and the findings of this study, it is apparent that..." and "The results may indicate/suggest that ...." or "While further research is needed to determine whether..., the findings may indicate that..."

Do not stray too far from the evidence you present. You can speculate about trends, but you should not make generalizations about your findings for which you have no solid evidence, except to suggest that further research may be warranted to explore the finding further.

### ***c. Surprising and novel findings***

Also report unexpected and surprising findings - “This emerged beyond the expected findings, shedding light on...” Add new reference material only if it explains new findings that you had not previously anticipated, and that didn’t form part of your Literature Review chapter, because they are novel or add dimensions or nuances to the previously presented literature, or contribute a new dimension to the theoretical framework that you previously presented.

Sometimes the variation among your respondents may be as interesting as their trends and mean scores. In a quantitative thesis, this is your opportunity to examine the overall direction of your findings, including the ‘trends’ that might suggest further research needed to develop them (See Unit 7, Method, section on avoiding p value potholes). I recall a survey of two groups of respondents that had few overall or mean differences. But the variation in each group was markedly different. One group were clearly divided on the issue, loading up at either end of the range of responses provided by the survey, with few in the middle of the range. Another group clustered toward the middle of the range, with few strongly opposed or in support at the extremes of the range of response choices. It would have been interesting to have added some interviews to the design of the study to find out what was contributing to the broad and disparate distribution of scores in the groups.

By drilling into your results, and pointing out anomalies and unexpected trends, you are adding your bricks to the wall of scholarship that you summarized in the Literature Review chapter.

### ***d. Conclusions***

Should there be conclusions drawn from the results? My preference is that conclusions amount to no more than a summary of the main points of the discussion – You are telling your readers “Based on the literature and the issues discussed in the theoretical framework (and my own autobiographical experiences, I thought this would happen!!” Readers need to be able to verify your conclusions so these should not go beyond the evidence you have presented.

### ***e. Implications***

In this section you turn to speculations. Your own voice is again present here in interpreting your findings – not as opinions but as speculations about what, under what circumstances and with whom or in what contexts, these results might carry implications for practice, policy and research in your field. You may want a separate section on “Further research” although this can be combined with the section on implications and will be anticipated by your examiners at your defense. What could these findings potentially tell the readers about this area of research, and what more would be needed in order to extend the findings?

### ***f. Recommendations?***

I am always skeptical of someone drawing recommendations from a thesis that was developed to test the current state of the research in the field and is therefore posed as hypotheses and speculations. I don’t advise adding recommendations to your thesis, beyond speculating on the further research that is needed to clarify findings, to generalize the findings, or to suggest what might be added to the theoretical framework of the study. I am uncomfortable when writers make recommendations for policy development or change in practice that would have consequences beyond the parameters of the study. Depending on its focus, your thesis might be able to support recommendations or raise questions about policies or practices that are already in place, and your supervisor and committee may think that they should be included. Ultimately, this is their call.

### ***g. Limitations.***

This section of your discussion chapter is important and will likely become a part of your examination at your oral defense. It is worth a careful presentation.

In many theses that I have read, this section is poorly presented. Most writers focus on describing methodological limitations:

“I had 4 participants but 14 would have been better”

“My participants didn’t represent the breadth and complexity all the folk who are members of this group.” “They all were drawn from the same school/class/interest group” etc.

“Only 30 percent agreed to participate, creating a potential sampling bias.”

“Thirty percent of the survey returns were incomplete, so the group averages were substituted where data were missing.”

These may all be true and may need to be included in your limitations section, but think also of the complexity of human nature, and how this might have affected your data collection. Despite all the safeguards you put in place to ensure privacy and anonymity, did you have a sense that some people did not provide the responses that they truly felt or believed? Did they not respond because your survey failed to capture the complexity of their experiences? If you interviewed, were some respondents more loquacious than others, resulting in some of your data reflecting the extent to which they were reluctant or willing to elaborate their beliefs and experiences?

Is there a temporal or historical bias in your evidence – policies that have changed rapidly in response to changing social dynamics that may not have been reflected in the recollections and opinions of some participants? I think of one thesis writer who waited years to report the findings of parental opinions about the education of students with disabilities. The opinions of these parents had long been superseded by changes to education policies and practices. The examiners might question the relevance of the findings – the “so what?” question again.

Take care not to draw conclusions from findings that don't support your initial hypotheses. Sometimes writers draw incorrect or false conclusions from incomplete or non-significant data:

“No participant indicated that they were unhappy with the initiative. Therefore, we can conclude that everyone was content with it.” (False - logical error).

“The result was close to the  $p < .05$  level of confidence, therefore it can be concluded that ....”(requires some justification for why  $p > .05$  can be interpreted as significant. See Coolidge<sup>25</sup>)

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<sup>25</sup> Coolidge, F.L. (2006). *Statistics: A gentle introduction. 2nd Edition*. Sage Publications. Section on Trends, and does God really love the .05 level of significance more than the .06 level? p.130.

“I was unable to gain the participant’s agreement to present this finding, but my field notes indicate that...” (Ethically unacceptable).

“There was no evidence that A caused B, so we can conclude that A and B are not related.” (False - logical error).

It is most important to remember that ALL research studies have limitations. It is not a mark of failure or incompetence to have limitations. Instead, you are telling your readers to be cautious about how they interpret your findings, and not to accept your evidence as if it was universally true. Perhaps your findings were able to confirm your hypotheses only partially, or your results are presented with limited or incomplete evidence and therefore your conclusions must be interpreted in light of the evidence that was available to you. You are warning the reader that more evidence may be needed to verify the tentative conclusions and speculative conclusions that you present.

### **Writing the Abstract - In a nutshell.**

When writing your thesis, the beginning and end of the writing sequence are reversed. The Abstract will appear at the very front of the final thesis, but it is best written or at least given its final revision at the end of the writing process.

### **Structure of an Abstract**

Here is a suggested template, with *an example*<sup>26</sup>, for writing the Abstract:

Sentence 1 – the context

*Effective teaching skills consist of high levels of student engagement based on good classroom and time management skills; the ability to scaffold learning that is adapted to students’ current levels of understanding; cognitively engaging students in higher-order thinking; and encouraging and supporting success*

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<sup>26</sup> From Jordan, A., Schwartz, E., & McGhie-Richmond, D. (2009). Preparing teachers for inclusive classrooms. *Teaching and Teacher Education*, 25, 335-342. doi:10.1016/j.tate.2009.02.010

Sentence 2 – the main research problem – any other questions

*The research reported here suggests that in elementary classrooms, effective teaching is effective for all students, both with and without special education needs.*

*We make the case that effective inclusionary practices and therefore overall effective teaching, depend in part on the beliefs of teachers about the nature of disability, and about their roles and responsibilities in working with students with special education needs.*

Sentence 3 – the participants and what they did/how they responded; other evidence presented.

*Thirty-two elementary classroom teachers were interviewed about their beliefs and practices, and they completed a ratings survey, the Beliefs about Learning and Teaching Questionnaire (BLTQ). Each was observed teaching core lessons by two independent observers who rated their inclusive practices with the whole class and with two students, one identified as having a disability and one as normally achieving. The teachers were not told who was being observed.*

Sentence 4 - the main findings

*We provide evidence that teachers' beliefs about the nature of disability and about their roles and responsibilities for students with disabilities predict differences in their classroom practices with students both with and without disabilities.*

Sentence 5 - implications

*The implications of these findings are considerable for teacher training and teacher development. Little is known about how skills for effective inclusion are developed, but it seems that teachers' beliefs about students' disability and ability as fixed or malleable, and teachers' epistemological beliefs, may play a part in the practices that teachers prioritize in their teaching.*

(264 words)

## **Fake news and the intent of the thesis (Unit 1).**

In its final draft, the thesis should present a coherent whole, from the introduction of the context of the research problem to the discussion that links back to the research questions and to the research literature from which the questions were developed. It is a loop – the analogy is a bowtie in which the parts come together in a full circle.

In the first unit of this book, I stated that “the purpose of scientific endeavour is to uncover the 'truth' about something” and that “the term 'truth' is increasingly suspect in our current society where 'fake news' and allegations of biased representation are frequent responses to any form of publication”. There are differing arguments about the nature of truth, and whether there is a standard of truth that exists beyond each person’s personal experience. I noted that my approach to thesis writing is largely empirical in nature; that the voice of the thesis is the evidence or data, and the reader stands to be convinced by the findings presented and conclusions drawn by the author.

Throughout this book I have argued that the purpose of a thesis is to present the evidence that is as close to an approximation to the ‘truth’ as is possible, given the constraints of social science that involves human subjects. This requires the reader to decide whether the author has made a case for how the study contributes to its field of research, whether he or she has provided sufficient detail of the selection of participant and of the procedures for data gathering, whether he or she has abided by the ethical and moral standards of scholarship and has explicitly addressed the shortcomings of the study and the potential limitations in interpreting the results. The author has the responsibility of convincing the readers that the presented findings are trustworthy, and that all steps have been taken to remove personal bias and persuasive rhetoric. The author is inviting the readers to judge for themselves whether the claims and conclusions are believable and convincing. These are the criteria on which the thesis and the candidate’s defense of it will be judged; the topic of the next unit,

10.

The voices of your participants have been heard in your Results chapter. In the Discussion you can finally let your own voice be heard. You are still constrained to stay within the parameters of your research study, but you are at liberty to speculate why the results occurred as they did and what this might mean for your theoretical and conceptual framework, and therefore for the development of further research in your field. You are still not at liberty to resort to rhetoric or persuasion; your readers still have to be persuaded by your arguments and not by your language. You can however now frame what you investigated and found in light of your own experience, and the speculations or hypotheses with which you entered the study.

# UNIT 10: Defending –preparing for the final examination

## Key concepts previously encountered in:

**Unit 1:** Defending a thesis means that your evidence – your data – will speak for you.

Meet the reader– the audience for whom you write.

**Unit 2:** The importance of real-time feedback during the writing process.

- a. Personal characteristics of students that complete the degree.
- b. Supervisor characteristics; styles of supervision.
- c. Working with your supervisor and thesis committee
- d. The external examiner

**Unit 4:** The "So what?" question

**Unit 8:** Presenting the findings

**Unit 9:** The discussion

## Summary Unit 10.

- The general structure of the Final Oral Examination (FOE)
- or Final Senate Oral (FSO).
- Selecting the external and other examiners.
- The elapsed time between booking the date of the examination and the examination itself.
- Waiting for the oral examination.
- The conduct of the examination.
  - Sequence of the doctoral oral exam
  - The candidate's presentation
  - Rounds of questioning
- Outcomes of the oral examination
- A note on remote or virtual defenses.

## **The general structure of a Final Oral Examination (FOE) or Final Senate Oral (FSO)**

Different universities have different procedures for examining their candidates. For example, in some cases a Master's thesis candidate will not have to attend an examination in order to defend the thesis, but it will be judged by two or more faculty readers on the basis of the written version only. In other cases, the candidate will be asked to defend the thesis before a group of examiners at an oral meeting. At the doctoral level, there is nearly always an in-person, an audio-conference or a combined in-person and audio- or video-conference examination.

### **Selecting the external and other examiners.**

This is usually a supervisor's responsibility, although some consult with their candidates. Look for someone who will appreciate your findings, is knowledgeable in the field (but doesn't have to be the resident expert in it), and who appreciates the mentorship that faculty bring to doctoral candidates. The faculty who serves as examiners must usually meet certain qualification requirements. Therefore, the Registrar may need to verify the Curriculum Vitae of examiners appointed from outside the university.

### **The elapsed time between booking the date of the examination and the examination itself.**

There are usually several weeks between the point that your committee accepts the final draft of your thesis and agrees that you can proceed to oral defense, and the examination itself. During this time, the Registrar of your university will appoint the external and other examiners following the composition of the examining committee required by your institution, collect the external examiner's credentials and ensure that all the examiners are eligible to serve in this role, appoint the chair of the committee and book the examination room,

circulate your thesis draft ahead of the meeting (this may become your task), and collect the external examiner's report ahead of the oral examination.

The role of the chair of the committee is to ensure that the rules of the examination are upheld, and that the focus is on the thesis content and performance of the candidate, and that there is no conflict or acrimony among examiners. The chair also collects and collates the votes and reports the result of the examination to the Registrar.

### **Waiting for the oral examination.**

What can you be doing while your full thesis draft is being read by your examiners, and while you wait for your oral date? Quite a few things!

- If you haven't done the fine matching of references to citations, organized a tidy table of contents that is reflected in your chapter headings, you can do those – hopefully by this point they have already been done.
- Proofread carefully! Check editing, grammar, writing (see Unit 11)
- Catch up with any new literature in your field that has emerged since you started to write. Note above that you can raise any new insights during your presentation at your oral examination that you discover while reviewing the authors and sources that you cited in the literature.
- You will need to check whether your examiners have been working in areas that impinge on your study, since this is likely that, at the oral defense, they will draw their questions from their own background.

### **The conduct of the examination.**

***As you go into this examination, keep in mind that you know more about the content of this thesis than anybody else in the examination room - be confident!***

If your supervisor and committee have done their job in bringing you and your thesis to this point, it is unlikely that a curve ball will be thrown at you! A poor defense, and conflict among the core members and supervisor shows them in a bad light, so it is unlikely that, even following a difficult and fractious supervision,

the committee will argue in this public forum. One task of the chair is to ensure that this does not happen. Another is to make sure that the rules for holding the examination are followed.

### ***Sequence of the doctoral oral examination.***

#### ***a. The procedures are discussed.***

Before the candidate enters the examination room, the chair of the examination ensures that all the examining members have read the thesis, and that no-one has reason to excuse themselves, either because they have not read the thesis or because of a conflict of interest.

Other procedures are also discussed;

- the order of questioning starting usually with the external examiner, followed by other examiners, and finishing with the supervisor;
- the voting requirements – the categories of passing grades and the option of postponing, if not failing, the oral defense,
- the method of voting; usually confidential votes on slips of paper that the chair of the examination tallies.

So, if you have been asked to sit outside the examination room, and there seems to be considerable time elapsing, don't worry that they are arguing about your thesis. That won't happen till the other end of the defense. The examiners are discussing the procedure that they will follow.

#### ***b. The candidate presents the thesis.***

**The candidate's presentation:** After the candidate is invited into the examination room, the examination usually starts with a time (about 20 minutes at our university) for the candidate to describe the thesis. In this presentation, the candidate uses a few summary PowerPoint slides, handouts, or a shared screen presentation in the case of a video-conference examination, and a verbal description to summarize the purpose, research questions and main findings of the study.

When preparing for this presentation, some of the things to consider are:

- The purpose of this presentation is to let you, the presenter, settle into the research, and to hit your stride with the material that is so familiar to you.
- The members of the committee have all read the thesis. The presentation is not intended to inform them about the contents that have already been presented in the thesis. It may serve as a reminder to those examiners who read it some time ago, but each of them arrives at this examination with a list of questions and is ready to start questioning you. So, this presentation time is “settle down” time.
- The presentation can therefore be a chance to pick out the issues that you would like to develop with the examining committee, and to some extent lead the conversation that will follow.
  - You could speak to some of the points in a little more detail.
  - You could talk about your background in beginning this work, and how the findings relate to your reflections on your background.
  - You can also add an update to the material in the thesis by describing a study that you have found since you submitted the thesis some weeks before.

***c. The questioning begins.***

Remember that the examination is not only about your defense of your thesis, but also about the written thesis itself. That is, if the thesis is well written and the findings acceptable, your ability to defend it at the examination will only be a part of the vote that each examiner will make. On the other hand, if the thesis is less than well written, your oral defense of it may be the deciding factor on how the examining committee votes.

***Rounds of questioning:*** The members of the examining committee now take turns in asking their questions, in the order that they have previously agreed to follow. In preparation for this, think about what each examiner may pick out to question you about. What is their area of expertise? Quantitative researchers may focus on your data tables. Ethnographers might explore the context of your interviews, etc.

One likely topic will be the limitations of your study. By now you will be familiar with the section of your discussion that addresses how far you can extrapolate the results, given the limits of your research design:

- your participants; how far they represent a 'population', that is; the people from which the sample was drawn; why the participants may have been influenced by various design or recruitment factors, etc.
- your research design; whether it meets the requirements to produce believable and reliable results, and whether you had thought of other ways to do the study.
- your analysis; whether it provides a convincing explanation of the evidence or data you present.

Your examiners will probably want you to discuss how far your results are important to your field, your topic, your professional as well as academic knowledge.

During your questions, it's OK to say you don't know or that you are not familiar with a certain work. You won't pass or fail on the knowledge of specific work that is introduced at your oral unless it is central and seminal to what you are defending. Even so you may be asked only to add it to your final version.

It's OK to ask for clarification or a restatement if a question baffles you. There is no timed test to answering a question, so don't hurry to answer with the first thing that comes to mind. You can mull the question and even ask for clarification, and you are not penalized for thinking carefully about the appropriate response. If you did not fully understand what the examiner is asking, you can request them to re-ask the question, even after you have given your first response.

The examiners will also be likely to lead you to suggest what further research would be possible to overcome the limitations that you describe. There is often a point in the oral when the discussion moves away from substantive questions about the content of your thesis itself, to its context and to speculations about the implications and where they could lead. Questions take the form of

“What would you do differently if you were to do this study again?” “What is the next study that needs to be done following this one?” While these are serious questions that you need to be prepared to answer, they mark a point in the examination that may indicate that there are no more substantive questions being raised. Listen for this point. Once every examiner has had a round of questions and the discussion starts to entertain speculations beyond the content of the thesis itself, you can take a deep breath to acknowledge that, at this point, the examiners are ready to reach a decision.

### **Outcomes of the oral examination.**

At the end of the examination, you may be asked to step out of the examination room and wait while the examiners vote on your thesis and your defense of it. Each institution has a set of voting criteria that each examiner considers. You will want to check these out before the examination, so that you know the decisions available to the examiners. These may consist of several ‘pass’ grades, including pass without changes, pass with typographical errors and omissions corrected, and pass with substantial modifications of a paragraph or more in certain parts of the thesis.

There may not be a ‘fail’ grade, but a recommendation to reconvene the oral defense when major changes have been made. If this is a second, reconvened oral defense however, there may be a ‘fail’ option for the examiners to use in their vote.

### **A note on remote or virtual defenses.**

Increasingly, Final Oral Examinations (FOE) are being held via teleconferencing. You and part of the committee may meet in an examination room, while other members of the committee, such as your external examiner, join from a remote location. In the days after Covid19, oral exams will be increasingly held via video conference platforms such as Zoom, in which the whole examination committee meets you on-line.

Some of our students experienced the remote or virtual alternative during the Covid19 pandemic. Their notes on how to prepare for the virtual oral examination are useful:

- Read FOE instructions & send your presentation in advance
- Practice with Zoom & record your presentation in advance (check for timing, presentation, images & screen sharing delivery)
- Do, do, do a mock defense on Zoom with the thesis group (schedule well in advance of FOE to be sure you have time to consider feedback). Find a good space for the Zoom meeting and give people at home a heads up to not use smart phones, internet or anything that might interfere with your virtual examination.
- Keep the notes, pens, cue cards, & glass of water handy
- Be sure to focus on your presentation (not on the technology if this is to be handled by the technicians at your university)
- Dress professionally (our students who had been through this process suggested “no pyjama bottoms unless that is part of your thesis”!)
- At the end, leave the virtual meeting & keep your phone close by.
- Take a screenshot with the committee afterward to remember the moment (or ask your supervisor to take one).
- Once you get the good news, be sure to find a way to celebrate and connect with your supervisor to mark the moment. You do not want to miss out on the usual opportunities to celebrate, even if you are using media at some distance from your committee members.

I would add that, because the video conferencing software can pick up sounds from a speaker’s computer, the conversation is better when the participants wear headphones rather than listen through their computer’s audio. I have attended meetings where the candidate’s reply to an examiner was echoed on the examiner’s computer and re-broadcast to the committee – a technical distraction that is easily remedied if the volume on the examiner’s machine had been turned down.

Entering that doctoral oral defense room is an anxious and sometimes scary moment. Keep focused on your achievement to this point, the fact that your supervisor and committee have permitted you to go to the examination which is indicative that they believe that you are up for the task, and the fact that you know as much if not more about this thesis than anyone else in that examination room; the background and history, its place in the scholarly literature and the strength of the findings.

### **Be confident**

Throughout your education you have been one of a crowd, a student who had to work hard to stand your ground among the large group that surrounded you. Now you have reached the point where all the attention is focused on you and your accomplishments to date. This is a session of great minds, all interested in you, your knowledge and your future, all of them viewing this couple of hours as the beginning of the next phase of your career. Savour and enjoy it.

# UNIT 11: Writing

## Key concepts from previous units:

- **Unit 1:** Purpose of a thesis/dissertation
  - Meet the reader – convincing them that your question, evidence, interpretation and conclusions are justified, believable and sound.
  - Veracity-validity vs. 'fake news'
- **Unit 3:** Writing using the [APA Publication Manual of Style](#)
- **Unit 5:** Citing others' research
- **Unit 7:** Ethical considerations and plagiarism

## Summary of Unit 11: Writing

- Leading your reader through your material.
- Common mistakes:
  - Opening the introduction to the thesis with platitudes, overly broad claims or restatements of the obvious.
  - Using overly complex sentences.
  - Using passive sentences
  - Avoiding the first person “I” and “We”
  - Trying to persuade
  - Using superlatives
  - Non-sequiturs, run-on sentences and dangling modifiers.
  - Avoiding overstatement
- Adhering to APA format:
  - Headings
  - Citing sources
  - Bias-free language
  - Placement of Tables, Figures and Footnotes
- The first full draft.

- Presentation
- Number your pages.
- Verb tense
- Punctuation
- Proofread
- Plagiarism

Connelly writes about the narrative inquirer: “By highlighting the context and the background stories, I can remain true to the scholarly task, laying bare my assumptions and rationale for the work” (Clandinin & Connelly, 2000). The ‘laying bare’ of one’s assumptions and rationale are key to how to write. In this unit we examine the most common mistakes that writers make and consider their impact on how they obscure the writer’s assumptions, and on how they distort the writer’s intent.

### **Leading your reader through your material.**

How would you lead the most important members of your audience through your thesis if they were sitting opposite you in your living room? One of my colleagues suggests that you invent a Great Aunt for this role; a person who is smart and knowledgeable but does not know the field in which you are working. How would you introduce your topic to her, and then describe to her what you investigated while hand-holding her through its complexity? (You can review the role of the reader in Unit 1).

You wouldn’t try to dazzle your Aunt with your knowledge. Rather, you would try to unravel its sections and show how each interacts with its neighbour, so that she can follow your train of thought. You would remind her of main ideas and key concepts and definitions as you lead her through each argument and section. You would intersperse ‘sign posts’ so that she can keep up with your description; “You remember that I defined x as...?”. “I described this technique when we discussed ...”. You would partition the material, giving discrete units a

title (headings) so that you could refer back to each unit when you start to tie the pieces together; “The reason I did this goes back to where...”.

What would you try to achieve as you embarked on your description? You would want her to agree with you that what you set out to find was reasonable and that what you did find was convincing and justified in light of the steps you took.

This same process is how you write. For those who believe that they are ‘not good at writing’, usually the problem is that they don’t have a good handle on what they need to say, and where they want to take their readers. You can write; – in a sense you do it all the time, whether in spoken or written format. Fuzzy writing usually stems from fuzzy thinking.

OK – at the beginning of this book I did suggest that you can write to think; that writing is one way to clear the fuzz. But in this final draft proposal or thesis, the landscape needs to be clear. Several times I’ve heard supervisors require their candidates to summarize in one page what their study is about. This isn’t because they don’t have the time or inclination to read more than a page: It’s because a writer who can tell the reader -or Great Aunt- what the study is about in one page has a really good grasp of their material. That one-pager will become your Abstract, and it will be the last thing you finalize.

The challenges in writing a thesis are:

- *Passive sentences.* Being clear about what you want to say. Fuzzy thinkers often resort to passive sentence structures because they are not clear about the relationships among their variables, and what lead to or follows from what (examples below). Passive sentences are also the hallmark of writers who want to avoid using the first person. Lack of active declarative sentence structures is also the preferred communication of those alarmist who want to hint at but not come right out and say what they mean. (*See what I mean...?*)
- *Sequencing.* Deciding on the correct sequence of topics, events, findings and conclusions so that your reader can follow.

- *Objectivity.* Being objective and factual, and not persuasive and argumentative (at least not before your discussion chapter)
- *Defining terms* so that you and your readers understand how you are using them.
- *Citing sources.* Attributing opinions and evidence to the sources from which you drew them. This requires carefully annotated citations of sources and quotations that are fully attributed to their authors, to ensure that you are not plagiarizing.

Pragmatic language is communication that is understood by others. It does not bedazzle, it isn't overly complex, it doesn't allude to facts without stating them directly. Unlike a good detective novel, it doesn't leave the best till last but seeks to help readers know where they are going from the very beginning of the thesis, and what they can expect to find on the way.

### **Common mistakes**

Please refer to the comprehensive lists of writing issues that the APA Publication Manual presents in Section 2: Expressing ideas and reducing bias in language. It is an excellent resource. While I will not recapitulate all the points that the manual presents, here are some of the most common mistakes that I have encountered in theses in our field:

#### ***Opening the introduction to the thesis with platitudes, overly broad claims or restatements of the obvious.***

“Inviting social work organization at secondary schools can give a better understanding of the people living below normal living standards and can also grow empathy for the poor. Students when exposed to the problems of the society will think about how they can make a difference and this will produce more people like Abdul Sattar Edhi and Mother Teresa, people who nobly fought against poverty (H & B, 1999)” (Passive sentences, *nebulous and persuasive*)

“In last two decades the education system is changing rapidly” (*instead be more specific about the changes that are the context for this study*).

“Focusing on the importance of social and emotional development in the early years could mean better overall outcomes for children in the years to come (H. et al., 2017; McC et al., 2007) and the kindergarten context is an avenue to gaining more knowledge about these domains.” (*This is also a passive sentence, with no clear indication of who is to focus, nor what constitutes a ‘domain’. Say instead that “this study will examine the social and emotional development of children in the early years”- and preferably specify which early years*).

You want to impress upon the reader that your study is important, but do not make grandiose claims about the potential benefits of your study. The evidence you present will do this for you. Here is an example of an introduction that succinctly tells the reader what the purpose of the study is, and what they can expect. Note how the writer leads the reader from the broad context to the specifics of the study.

“In recent years, the term inclusive education has played an unprecedented role in research and policies across the globe, which gave rise to a variety of different understandings of this concept (10 references follow). It is relatively accepted amongst scholars (such as (5 references follow)), to differentiate between a narrow and a broad understanding of inclusive education.” (*The context is broad but not so broad that it loses its impact as a statement of fact, especially with a tribe of citations to support it.*)

The author continues: “On the one hand, the narrower understanding focuses on the placement and the catering for specific students (*author’s emphasis*), such as those with identified special educational needs and/or disabilities (SEND). On the other hand, a broader understanding of inclusive education incorporates views on the diversity of all students, and the changes that the schools and the school system must pass through to be able to provide a supportive learning environment for all”. (*An early distinction set the stage for the potential inquiry*)

“The main purpose of the present study was to investigate how the teachers’ attitudes towards inclusive education for all can be measured. The attempted new measurement instrument was thought to be sound and robust (*passive sentence*). Concerning the former, the instrument should allow a valid and reliable measurement. And concerning the latter, the instrument should be ready to be used in multi-language, multicultural and multinational settings”. (*A promissory note that the author will present evidence*).

“The attitudes were assumed to comprise certain facets; accordingly, the purpose of the present study was also to establish certain dimensions of the measurement instrument.” (Chapter 1 p.1., Kielblock, S. Ph.D. thesis, Justus Liebig University Giessen, Germany and Macquarie University Sydney, Australia, 2018).

*The reader knows where they will be taken, and that the next step will be to find out what facets of attitudes, and therefore of the instrument, the author will investigate.*

### ***Using overly complex sentences.***

Another common mistake is to use overly complex sentence structures, sometimes with multiple embedded clauses that contain several new ideas, all in an attempt to sound ‘scholarly’. Good academic writing is simple. It depends on short active declarative sentences that follow one another so that the concepts they hold are clearly presented.

Some examples of confusing syntax:

“In a similar direction goes the arguments of T L (2014) who looks at “conjunctures” that create conditions for the rise of new identities, subjectivities and capitalist relationships”.

“Interestingly, the need for an authoritative figure to resolve a situation when asked what children would do if someone wants to play a game they do not like is significantly associated with seeking an authoritative figure when someone is having a meltdown.” *This is also a passive sentence.*

“I speculated, based on the participants’ experience and narratives operating within settler-colonial ideology, including a resistance or negotiation of those very same ideologies will foreground conceptions of accountability and motivation for transformation.”

### ***Using passive sentences.***

Another common problem is the use of a passive sentence construction that does not make clear who is doing what. A bad passive sentence can border on conjecture or persuasion because it leaves the reader with hints and nuances that are not supported by citations or evidence:

“Although both papers recommend .... it is unclear who is to take up this role”.

“The language in collective agreements has been found to be somewhat nebulous, giving rise to increasing disputes”.

“Language as a learned structure is seen already typically in two- to three-year-olds using the syntax of verbs in the present and future tenses to talk about what is and will happen (K & R, year) when expressing needs, values and other topics”.

“The target for this study was to conduct interviews with...” (*My aim for this study...?*)

### ***Avoiding the first person “I” and “We”.***

One of the difficulties that writers face is trying to avoid using the first person in their accounts. By avoiding using “I”, they are forced into using a passive sentence construction that may cloud the meaning:

“The participants in group 1 were instructed to complete the survey in the first sitting, whereas the participants in group 2 were not instructed to complete the survey until the second sitting” ...”*In the first sitting, I administered the survey to Group 1, and in the second sitting to group 2*”

Alternatively, writers avoiding the first person may attribute to their research or dissertation/thesis those attributes for which they were responsible. This is *anthropomorphism*; attributing human characteristics to inanimate objects:

“This dissertation aims to investigate...” (*I aim to investigate...*)

“The study wanted to learn about...” (*In this study, I hoped to learn about...*)

“The research chose to select...” (*I selected...*)

“Qualitative study targets researchers to understand...” (?)

Section 2.04 of the APA Manual of Style explicitly states that the first person, singular or plural as appropriate, can be used in scholarly writing. Some supervisors, however, may not be comfortable with this, and may direct you otherwise.

### ***Trying to persuade:***

Sometimes it is tempting to glamourize your writing with language that is creative or colourful. If this language goes beyond the evidence, it is a form of persuasion that should be avoided. Persuasive writing uses unsupported claims in several forms to recruit the reader to the author’s views:

“It turns out that school climate matters a whole lot. An immense amount of research has shown that school climate predicts...” (no sources cited).

“Several researches boiled out (sic) that leadership is the only source which influence teachers’ occupational satisfaction” – (no sources cited)

“Documents and policies define the mechanics for systemic functions, weaving through the relationships, defining their order, status, privilege, while simultaneously creating tensions amongst them.” (*This is another example of anthropomorphism, or the attribution of human characteristics to inanimate source. The subjects are the creators of the documents. The results of complying with the documents might be the creation of tensions.*)

Also avoid appealing to “common knowledge” or “beliefs” without sources:

“It has been a common belief that the school principal is the only person who can bring positive change in school success”.

“Research has shown that ...”(no cited sources)” (a particular ‘aargh’ for me!)

### ***Using superlatives:***

This is another form of persuasion:

“Although there are **myriad** challenges associated with the development and implementation of cooperative teamwork pedagogy in a **very** diverse classroom population, many post-secondary institutions recognize ....”

“they need to focus on students (sic) achievements **more rigorously** the never (sic. *than ever*) before”.

### ***Non-sequiturs, run-on sentences and dangling modifiers.***

“Graduate students conduct research to explore different issues and play significant roles in interpreting, exchanging and disseminating their acquired research knowledge, which is not studied enough.” The writer intends the subject of “play significant roles” to be students, but as it is presented, research is the subject.

“According to Jones, Goldner, Butler and McEwan (2015) suicide is the second-leading cause of death among Canadian youth aged 15-19 who often are not aware of how to get help”. This sentence has an unfortunate sequence. There are at least two ideas here: The first is that Canadian youth, 15 to 19 years of age, may not be aware of how to get help. As a result, they may commit suicide. The second is that suicide is the second-leading cause of death in this age group.

“From personal experience, growing up in the Ontario school system, social media have been used as a pedagogical tool to instigate transformative thinking”. The subject seems to be the writer who cites personal experience as the basis for an evaluative comment about the object of the sentence, social media. But the passive construction of the second half of the sentence not only does not follow from the subject clause, presenting an implied purpose that is persuasive.

Sometimes writers string together several differing ideas in one sentence conjoined with several ‘and’s:

“To my knowledge, no research has been done to assess what kind of dramatic film is being used as part of the curriculum and a brief inquiry I

conducted with teacher contacts revealed that many of the films in use are documentaries”.

### ***Avoiding overstatement***

“In the most extreme scenarios, failing to do so is a matter of life and death”.

“The accelerated learning techniques begin with the preparation of the environment to add more value. This encourages more comprehensive and systematic way to teach by using both brains”.

“Besides other factors, teachers (sic) effectiveness is one of the most researched and debated factor among educational professionals that has maximum impact on academic performance of students”. (Also, a passive, persuasive and superlative!)

### **Adhering to APA format:**

In Unit 3 we suggested that the [American Psychological Association Publication Manual](#) would be your best friend when writing. Note that during the corona virus pandemic, APA is providing free access to its newest 7<sup>th</sup> edition.

At the risk of failing to do justice to the excellent writing guide and tips in the APA Publication Manual, here are some of the frequent format errors that I encounter:

### ***Headings***

APA (7<sup>th</sup> Edition) recommends five levels of headings:

1. **Chapter**  
**Centred, Bold, Title Case Heading**
2. **Flush left, Bold, Title Case Heading**
3. ***Flush left, Bold Italics, Title Case Heading***
4. **Indented, Bold, Title Case Heading, Ending with a period.**
5. ***Indented, Bold Italics, Title Case Heading, Ending with a period.***

### ***Citing sources***

It is important to make sure that all sources cited in the main body of the thesis text also appear in the Reference list. And vice-versa, ensuring that no items appear in the reference list that have not been cited in text. To ensure that lists match and that the format of your writing conforms to the APA style requirements, you may want to enlist the support of a good citation software program (Unit 5). Otherwise, spend a chunk of time with a marker cross checking each entry and the year of publication against its mention in both text and reference list.

### ***Bias-free language***

Person-first language vs. identity-first language is evolving, so that terms such as 'Deaf person' are acceptable in some Deaf communities, whereas Person with a hearing impairment may be preferable in others. See the Manual for details of what terms to use. The authors of the APA Manual prefer the use of the term "Disability" to "physically (or mentally) challenged", or "special needs", which they see as condescending. British journals and legislation, however, use the term "SEN (Special Education Needs) to refer to, among other, students with disabilities.

The language of gender identity and sexual orientation is also in the process of evolving. According to APA, gender refers to a social construct and identity. When writing about the genders of participants in the Method section, report the numbers or percentages of participants according to how they self-identify, if relevant. Sex refers to the biological sex assignment at birth. Unless this, or sexual behaviour, is germane to your study, usually the term to use will be 'gender'.

### ***Placement of Tables, Figures and Footnotes?***

When you write for publication, these elements are usually attached at the end of your submission. In a thesis, however, they appear either in text at the place where they are mentioned, or in an Appendix. Short tables and figure can

appear on the same page as text, while longer tables may need to follow a page break so that they begin at the top of their own page. Multi-page lists and tables may need to appear in an Appendix, however. Keep in mind when placing these, that the Appendices should be for reference rather than a part of the main results story. They therefore should provide detail that supplements but is not required to follow the material in the main text. The reader, especially one reading on-line, encounters technical obstacles and interruptions to the flow when required to switch between Appendices and main text in order to understand the presentation of results. So, hand-hold your readers and refer them to Appendices when they might want greater detail that you provide in the results section.

Fully label each Table (at the Top) and Figure (at the bottom), and make sure all scales, axis, and keys are labelled and explanatory notes are included. Footnotes appear also at the bottom of the page on which they are first mentioned. Note that footnotes do not contain citations and references, and they are seldom used except to clarify a definition, remind the reader about an abbreviation, and provide similar signposts that are explanatory but not essential to the main flow of the text.

### **The first full draft.**

Before sending it to your supervisor and committee, make sure your draft has a Table of Contents, including where to find the lists of Tables, Figures, references and Appendices with contents. Don't forget to number the pages. This may sound picky, but it is frustrating for a reader (aka professor) to read a lengthy chapter that does not have signposts in the form of -

- An introduction that says where you will be going,

- Headings and side headings

- Page numbers (so he or she can reference comments back to you, and can make notes of what to discuss with you)

- A brief summary of what you have tried to accomplish

## **Presentation**

Proofread and don't trust the spell and grammar checker or translation or transcribing software. If your supervisor has to do fine edits, the larger picture of what you are trying to do and where you are going is hard to follow. Make sure the small typos are fixed before sending your work to your supervisor or committee.

- In the last two **decayed** the education system is changing rapidly
- They need to focus on students (sic) achievements more rigorously **the never before**
- the researcher wanted to show the effects of those students who participated in co-curricular activities and passed intermediate now studying in graduation and master's level *defiantly changed* attitude of learning."
- All values have been found *ecstatically* significant beyond .01 level of significance

**Number your pages.** Then build the numbers into your Table of Contents, and then cross check after completing further edits or additions to your draft, before sending to your supervisor or Committee.

**Verb Tense?** Writers get confused about the tense to use when writing proposals and theses:

In a thesis proposal, the future tense is usually used to describe what the researcher intends to do and how they will do it.

In a thesis, the method and procedures have been completed so these are now described in the simple past tense. As a general rule, the material reporting the literature that describes research that occurred in the past is presented in the past tense, while findings and theories that are current are presented in the present tense:

“Extensive prior research on doctoral supervision and the researcher community has identified...”

“Situational Leadership(R) *has* been developed over the past 40 years by Hersey and Blanchard and their associates. This leadership model *is* unique in that when it is applied to the dissertation process,...

“Pekrun (2019) and Pekrun and colleagues (2019) *focused* their research on...”

“Pekrun (2019) *has developed* the Control Value Theory to predict how emotions *are* regulated during doctoral studies...”

Take care to check the changes in tense when cutting and pasting chunks of your thesis proposal into your thesis drafts. Ensure that the tense will work.

**Punctuation.** Despite the way that Facebook and MSM garbles your possessive apostrophes, ‘s is usually a possessive. The noun possesses the next descriptor. There are a few exceptions however:

Its – a possessive exception to the rule - something that **it** possesses. “My cell phone is recharging its batteries” (possessive but not ‘s).

It’s –colloquial form of ‘It is’. It’s your thesis.

“This desk is our desk. This desk is ours. Is that desk theirs?”

Singular and plurals are becoming increasingly poorly presented:

“Teacher’s clarity of the...” (incorrect)

“If teachers teaching...” (incorrect)

“They need to focus on students achievements more rigorously the never (sic) before.”

“Teachers’ knowledge ...”(correct)

“Charles’s paper..” – belonging to Charles

“People’s rights.” – belonging to people, but since ‘people’ is already plural, the apostrophe belongs before the possessive ‘s’.

**Proofread.** You may be totally fed up with your written efforts, and close to sending it to your supervisor so you can take a good long break! But please proofread it one more time. Set it aside – preferably for a few days, then re-read it to yourself or to a friend. Does it make sense? Is your meaning clear? Have you used the slippery, elliptical, passive sentence structure to avoid having to go back to cite a source or to attribute a value judgement?

As a reader of many student papers, believe me: the last proofread is well worth your time – and the patience and commitment of your professors.

## Plagiarism

Ethical writing means giving credit where it is due. Failing to do so is Plagiarism, and it could cost you your degree.

Plagiarism is the “theft of intellectual property”<sup>27</sup>. It involves not only using the words of another author without giving credit to that author, but it extends to a fairly murky boundary between your own ideas and words and those of another.

Maurer et al. (2006) list the following sources of plagiarism:

- turning in someone else's work as your own
- copying words or ideas from someone else without giving credit
- failing to put a quotation in quotation marks
- giving incorrect information about the source of a quotation
- changing words but copying the sentence structure of a source without giving credit, and
- copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not [Plagiarism.org 2006]

There are various ways that writers plagiarize such as paraphrasing, using similar ideas without crediting the source, changing grammar and using

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<sup>27</sup> Maurer H., Kappe F., Zaka B.(2006). Plagiarism - A Survey. *Journal of Universal Computer Science*, 12(8), 1050-1084.

synonyms, cutting and pasting from the vast amount of information online, crediting to sources that are no longer available on websites, and providing misinformation about sources.

The murkiness of plagiarism arises when an author passes off material that is not their own, sometimes unintentionally or accidentally. This can happen because the author is not familiar with the citation style required by their university. As a reminder, make sure you know and are fully conversant with the style guide requirements of the American Psychological Association, now launching the 7<sup>th</sup> edition (Above and Unit 3).

Another source of unintentional plagiarism may be when your own ideas that you have carefully fostered, developed and described, coincide with those of an author who has already published them. For example, you might have developed a theory of how personalities respond to different audiences, or a hypothesis about the gendered roots of a professional identity. If someone else has already expressed these ideas in print, it is your responsibility to find them and to credit the published author as the source of the ideas. This has implications for the thoroughness of your literature search and the presentation of your review of the literature (Unit 5). Even though you may have thought of them on your own, you could be accused of stealing someone else's intellectual property, or plagiarism.

There is also a type of self-plagiarism, where one copies one's own ideas that have been published elsewhere under a copyright, without referencing that source! Many thesis writers have already embarked on publishing by submitting early drafts of their research to journals. Be careful in writing your thesis that you credit your own writing when you are recapitulating similar material.

Finally, there is intentional plagiarism. This is a deliberate piracy of someone else's writing presented in your thesis as if you were the source. I've seen thesis drafts and a proposal that presented huge sections of someone else's ideas without giving credit to the original author. The word 'plagiarism' comes from the Latin 'to kidnap'. In a research lab, there may be fear that others are kidnapping your ideas and bringing them to print before you are able. It is

the responsibility of both you and the manager of the projects to ensure that this does not happen.

I'll note that I have also read at least one thesis drafts that was almost entirely made up of quotes from others, fully attributed to their sources, but without any binding statement to show the original thinking of the author; a clear violation of the requirement that a thesis must consist of original material.

Famously one of the graduates from my university was found to have plagiarized sections of others' writing for his Ph.D. thesis. This person, employed in a position of high responsibility and trust, lost not only his doctoral degree, but also his job and his reputation.

Here is Ondrej Sipr's [tongue in cheek interpretation](#) of a thesis writer's phrases and the reader's interpretation of their intended meaning:

<b>As Written</b>	<b>As Interpreted</b>
"A highly significant area for exploratory study"	A totally useless topic selected by my committee
"In my experience.."	Once
"In case after case ..."	Twice
"In a series of cases..."	Three times
"It is believed that..."	I think
"It is generally believed that..."	A couple of others think so too
"A definite trend is evident"	The data are practically meaningless
"While it has not been possible to provide answers to this question..."	An unsuccessful study but I still hope to get it published
"Three of the samples were chosen for in-depth study"	The other samples didn't make sense
"Typical results are shown"	This is the prettiest graph

“A careful analysis of obtained data..”	Three pages of notes were obliterated when I knocked over a glass of beer
“After additional study by my colleagues “	They didn’t understand it either
“A statistically-based projection of the significance of these findings...”	A wild guess

## **UNIT 12: Finding the supports you need.**

### **Key concepts in Unit 2:**

1. Keeping motivated
2. Time management and stress
3. The importance of real-time feedback during the writing process.
  - 3a. Personal characteristics of students that complete the degree.
  - 3b. Supervisor characteristics; styles of supervision.
  - 3c. Working with your supervisor and thesis committee
  - 3d. The external examiner
  - 3e. Preparing to meet with your supervisor.
4. Peer support and critical friends

### **Unit 12 summary:**

- Believing in yourself
- Resources for you to access.
- Writing supports from your local university.
- Online web-based resources
- Print resources.
- Advocating for yourself.
  - Disability services.
- Caring for yourself.
  - Resilience

In Unit 2, we discussed working with others, as well as looking after yourself. Several resources for supporting thesis writers were examined. In this unit, we take a more in-depth look at some of the obstacles that thesis writers may encounter in moving ahead.

The research on thesis completion rates suggests that many factors, arising from both others' expectations of you, and your own sense of self-worth, can undermine your achievement and make your progress stall. In this unit we continue the investigation of what may impede your thesis completion, and we add to the list of resources that you can access for support.

### **Believing in yourself**

We all know how to look after ourselves. The trouble is we often have a critical parent in our heads, one that sets conditions on what we need. "I'm tired but I won't sleep if I don't finish these edits, this chapter". "I don't deserve to take a break, at least not until I've finished this draft". "I've been taking too much time away from this thesis, and I need to make up for slacking off". "How can I justify spending the fees if I don't finish this?" "I'm daunted by the thought of spending the whole summer working on this thesis".

Such messages place your own physical and health needs and wellbeing in a secondary place below your work. The outcome is stress, fatigue, and sometimes guilt. From the perspective of that inner parent, you start to view yourself as lazy or a disappointing. You wonder if you are really competent, capable, or smart enough to undertake this project. Remember the 'Imposter syndrome' in Unit 2?

The accusations may not rest with you alone. You have reached the top of the student pyramid. You have been a student, on and off, since kindergarten, and most of the time you were a number. In graduate school you began to have an identity as a researcher in a field of expertise. Now you are at the top of the formal process of fulfilling requirements to graduate. Unless you undertake another post-graduate degree this may be your last endeavour in the education system. Somehow, though, you have the impression that you no longer need

help. Perhaps someone has said to you that you are now an independent learner, and at this level, you should know how to undertake research and write a thesis. But you are struggling to keep going. You may wonder what you missed in preparing for this thesis. Are you being selfish in putting this thesis ahead of your family's time, care or finances? Having already devoted several years to this project, were you wrong to embark on it?

Designing, conducting and analysing a body of research and reporting it is a huge undertaking and a steep learning curve. As noted in Unit 10, be confident. You do deserve to give this thesis project your best shot. Getting to the completion, however, is not built into your genes; it requires that you learn new skills and strategies and find resources to provide you with feedback, as well as believing that you are competent, worthy and deserving. You are not required to attempt this on your own.

It's important to think of the thesis journey as a learning process. As noted in Unit 10, this thesis is not the end point of your learning; it marks the beginning of the next phase of your career, and there will always be more to learn. It is a milestone in your life, not an end point. Completion tells prospective employers and referees that you have acquired a set of skills and have expertise in a defined and narrow topic. Learning a set of skills for undertaking original research and presenting it on paper, however, takes time, commitment and many helping hands. More important, you are acquiring research, analytic and writing skills that you will be able to apply to future tasks. You are learning how to learn at a high level of cognitive complexity. So, accessing resources and depending on the expertise of others are not marks of failure but of growth.

### **Resources for you to access.**

Throughout this guide, I have referred to resources to assist you. These are just a few of the resources that you will find by hunting, both on your university's website and also on the Web. Local resources are often not coordinated and available in one place, but they will surely exist. Supervisors and advisors may suggest that you try a resource, but they too may not be

conversant with all the alternatives that are available to you. The librarians will also be an important source of help with finding a variety of online and print resource materials. Their expertise is often under-used by thesis writers who hope to muddle through on their own. Check the workshops and resources that your local university library offers (see [this example](#)).

And there are resources beyond the technical aspects of writing. There will be support people to whom you can talk in confidence about workplace stress, anxiety, depression, burnout and other mental health issues. To access these services, you do not have to be a mentally unwell person: They are there to help prevent you from becoming more stressed. There will be people with whom you can talk about stress due to finances, family and work demands on your time, and housing, English language skills, and cultural integration. You need not tackle these alone. Half the challenge is locating them.

Types of resources that you can request:

### **Writing supports from your local university.**

Writing 'boot camps' are on-line or face-to-face days – and sometimes weeks- of sessions in which you set yourself the task of working on your thesis, in the company of other thesis writers. There may or may not be resources available for you to draw on if you need help. The 'Write-In' sessions that my colleagues and I organize are day long silent writing sessions held either face-to-face in a pleasant, quiet seminar room, or on-line where writers set up their spaces at home and then connect by email. The sessions have a gentle accountability feature; at the end of a session the lead faculty member connects with each writer, either face-to-face or online by email or via a Zoom meeting. One of the attractions of these sessions is that if a writer is struggling, they may ask for a confidential interview to help them move ahead. We can then suggest resources and services that might help them, as well as look at the work they are doing, and suggest how it might be structured and presented.

The Student Success Centre in our faculty organizes similar writing sessions for both Masters and Doctoral students, coordinated by senior graduate students.

The main Student Support Centre of the University also has a dedicated team of writing supports led by an experienced writer and publisher who is also a faculty member: [Explorations of Style](#).

### **Online web-based resources**

If you 'Google' thesis or dissertation support, there is a myriad of material for you to tap into. In Unit 2 some of the YouTube videos were suggested that provide support for writing. They include several versions of how to write a literature review, design a research project, and collect and analyse data. There are many more, including new resources that address the physical distancing that has resulted in a burgeoning of on-line resources resulting from the Covid-19 pandemic.

The on-line resource recommended by our students include:

The [National Center for Faculty Development and Diversity](#) (NCFDD).

This is a large and well-coordinated on-line support service and blog for both faculty and graduate students. The NCFDD's timely advice covers a wide range of topics such as coping with overload, planning to publish, and navigating the political minefield of a new faculty position. This on-line site regularly schedules writing boot camps. They conduct writing challenges that span a couple of weeks or longer, and a dissertation success program that teaches important thesis writing and planning skills. One of the benefits of the NCFDD programs is that they help you to prioritize and schedule your thesis work. As will be seen below, one form of stress reduction is to allocate set times for activities so that you can 'let yourself off the hook' for being pre-occupied with one task and not another.

[The Thesis Whisperer](#), an Australian National University site hosted by Dr. Inger Mewburn. Dr Mewburn also hosts a site for faculty supervisors: [The Supervision Whisperer](#).

[The Academic Ladder](#) offers a free dissertation toolkit as well as tips for motivating and organizing your writing, life-work balance, academic job interviews. [Gradhacker](#) is an on-line blog that provides advice for graduate students

### **Print resources.**

There are both how-to books on thesis preparation, and research papers written by researchers who investigate one of the most captive groups of human subjects available to them; the university student body.

At the risk of repeating myself yet again, I must remind you that the style guide for writing in our field is the [American Psychological Association Manual of Style](#), 7<sup>th</sup> Edition. (2020). APA

It also contains excellent advice about writing style, presentation, formatting, levels of headings to use, etc.

The students with whom I work recommend the following as useful resources: Harman, E., Montagnes, I., McMenemy, S., & Bucci, C. (2003). *The thesis and the book: Guide for first-time academic writers*. 2nd Ed. Toronto: University of Toronto Press.

Evans, D., Gruba, P., & Zobel, J. (2014) *How to write a better thesis*. 3<sup>rd</sup> Ed. Springer International Publishing

Farkas, D. (2009). *The smart way to your Ph.D.: 200 secrets from 100 graduate*. Your PhD Consulting.

Goodson, P. (2016). *Becoming an academic writer: 50 exercises for paced, productive and powerful writing*. New York: Sage

Graff, G. and Birkenstein, C. (2014). *They say / I say: The moves that matter in academic writing*. W.W. Norton and Co. This book is recommended by several of our thesis writers. It sets the stage for how to write for a scholarly audience and how to locate yourself in the presentation

For French language thesis writers,

Noreau, P. and Bernheim, E. (2016). "La thèse: Un guide pour y entrer... et s'en sortir" Les Presses de l'Université de Montréal.

### **Advocating for yourself.**

"It is important to destigmatize those who could use some assistance.

[Communicating] that it's all right to seek assistance [requires] a clear and

authentic message within the organization from the CEO on down', Panaccio says." (Concordia study, *Globe and Mail* March 2, 2020).

In a review of the factors that cause and alleviate stress conducted at Concordia University<sup>28</sup>, one interesting finding was that Perceived Organizational Support (POS) was critical to employee wellbeing in the workplace. POS is the belief that the organization in which one is working cares about one's contribution as well as about one's wellbeing (Eisenberger, Huntington, Hutchison, & Sowa, 1986, p.501<sup>29</sup>),

As the above quote suggests, the whole organization, in this case the research unit in which one is enrolled, needs to send the message to all students that seeking assistance is not only acceptable to the organization, but crucial for the wellbeing of the students. Thesis candidates as well as their peers not only feel more competent when they are supported, but also have greater wellbeing, less doubt about their progress, and more commitment to their work. Of course, the thesis supervisor and committee are central to the organizational support for thesis candidates.

Yet there remains a stigma about asking for help. The need for assistance and direction is seen as a weakness, not only by the student, but also by some of the resource people in the workplace, and by a lingering perception in society at large that the responsibility for success lies within the individual. As a result, students are reluctant, even scared, to seek assistance. This is particularly true when accessing assistance is related to a disability.

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<sup>28</sup> Panaccio, A. & Vandenberghe, C. (2009), Perceived organizational support, organizational commitment and psychological well-being: A longitudinal study. *Journal of Vocational Behavior*, 75(2), 224-236. <https://doi.org/10.1016/j.jvb.2009.06.002>

<sup>29</sup> Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, 71(3), 500–507. <https://doi.org/10.1037/0021-9010.71.3.500>

### ***Disability services.***

Most if not all universities and colleges have an office that advocates on behalf of students with disabilities. There is government funding to support these advocacy services. Please consider taking advantage of them if this is appropriate for you.

What counts as appropriate? In the field of disability studies and inclusion there has been a major shift in the last 20 years, away from identifying a disability as a labelled attribute of an individual, toward seeing disability as an issue of access. A person with a disability has limited access to the mainstream resources that others enjoy, not because he or she is deficient in some aspect of learning, but because the mainstream is geared to a normative understanding of ability. For example, lectures held in university lecture halls and classrooms are based on the assumption that students can walk in on time, climb to a seat, hear what the lecturer is saying, take notes, and see and read what is being projected on the screen. Students can also carry their laptops, know how to type to take notes, and are familiar with the software that is being used by the lecturer. They must know what the expectations (curriculum objectives) are for completing the assignments, and the timelines for producing them. Some of these attributes may be part of each student's physical abilities; others are cognitive, and most are learned. Students who are unable to access one or more of these skills are at a disadvantage in learning from the lecture. But this may not be the responsibility of the student; it may be caused by an organizational assumption that all students can access the lecture and the requirements in the same way. Most disabilities are due to interrupted communication, not deficits of the individual. Hearing impairment is a barrier to hearing the lecture, unless it is modified by a sign language interpreter or by a voice-to-print supplement. Vision impairment, similarly, requires the mediation of computer software to enlarge print, or to convert print into an audio presentation. Our foreign students may experience language barriers when listening in a lecture mode, even though they would not be considered as 'disabled'. More problems arise when a disability is unseen; when it creates difficulties with learning, wellbeing, or when it impacts self-

confidence in the form of anxiety or depression. If you think of a disability as a communication breakdown that is created by a learning environment which has been structured for the (elusive) norm, you can see that the responsibility for solving the communication barrier rests with both the student and the organization. The student has the right to access the learning environment, and the organization has the duty to accommodate the student's learning needs to allow him or her to have a chance to meet the instructional goals and expectations of the curriculum.

One issue however is that people's perceptions of disability vary widely. At one extreme, there is a view that the individual is responsible for his or her own disability and must undertake the necessary learning detours alone, in order to reach the university's 'standard' of achievement. At the other extreme, there is the view that the university is entirely responsible for making the learning environment accessible. In fact, neither extreme allows for the needed accommodations. Both parties need to engage in designing them collaboratively, in light of the student's individual needs and the learning goals of the organization, so that the student has access to the same opportunities as his or her peers.

Formulaic accommodations such as 'allowing more time', 'writing in a separate room', or 'writing from home', do not fulfill the accommodation needs for many students. In order to design a good accommodation, there are several steps to be taken:

1. The instructor or person responsible for allocating marks and grades lists the main learning objectives that the instructor has set for the course, and on which grades will be allocated.
2. Learning objectives are developed as a list of skills, content knowledge and learning strategies that indicate mastery of the course content. That is, when thinking about the knowledge and skills that signal success in the course, consider what skills, strategies and content knowledge will be needed in the process of reaching that point.

3. For each objective, how can the student demonstrate that he or she has met this objective using accessible alternative communication strategies. What will the criteria for mastery look the same or look different in this format?

Take for example a timed written examination, conducted in the university lecture hall. Is completing the assigned work within a defined time limit an essential objective of the course content? If not, what is the time limit on an examination or assignment designed to measure? If it is an essential objective, (for example, in athletics, or surgery) then communicating that the skill has been attained will be judged by a timed presentation format. If this is a written examination, the candidate who cannot write may be required to dictate, using either a voice-to-print technology or through a scribe.

If a time limit is not a useful criterion for demonstrating mastery in the course, why is it being used? Perhaps convening students in an examination room is intended to test how much material students have memorized or can apply without reference to book, and to limit access to the use of outside resources. If this is a crucial objective, then an oral examination may replace a written one. Time limits and extra time may not be relevant to how participants demonstrate their mastery of the material.

Accommodations are described here in an attempt to encourage students with difficulties, who may or may not have 'disabilities', to seek the advocacy resources that will supports their success. Some barriers to moving ahead may also stem from external factors that contribute to stress, fatigue and well-being, such as finances, health, difficulties with family members, peers, supervision. There are resources also for these, and you can also introduce your own personal accommodations for them: See Caring for yourself, below. Check your on-line student handbook to see what is available to assist you to move ahead.

***Peers as colleagues, mentors and empathizers.*** In the spirit of this chapter to date, the message is that you do not, and indeed should not, have to undertake this thesis journey alone. I am always impressed by the knowledge

and skills exhibited by a group of our doctoral students when they convene to hold a 'mock oral' defence for a candidate ahead of the final examination. In other contexts, such as classes, video chats etc., the wealth of knowledge of peers is striking. Your colleagues are an important support system for your progress.

Some of the techniques used by graduate students that I've heard about include:

**Writing buddies.** Two or more students report their process to each other on a regular basis, in person, by email or by using a chat room such as Google Chat, Skype and Zoom. They may monitor each other's writing and offer feedback.

**Blogs.** Enterprising students have set up an on-line blog to document aspects of their work through their thesis journey, they invite other to check in, share their reflections, and progress. In our faculty, one such blog is Jacqueline B's YouTube site for students undertaking a Ph.D.; "[Academic Skills and Ph.D. life.](#)" Larger institute- wide or even world-wide blog spaces were mentioned previously: [Explorations of Style](#), [National Center for Faculty Development and Diversity](#).

**Coursework that builds collaborative groups into the structure of the course.** There is a significant shift away from the traditional competitive ethos of university learning toward more collaboration, cooperative learning and teamwork. This may reflect a broader societal shift toward greater teamwork in the workplace. Peer relationships often form out of formal coursework in which students collaborate in pairs, groups or teams to achieve course objectives.

### **Caring for yourself.**

Be kind to yourself. I frequently encounter people who are hard on themselves for not meeting their own or others' deadlines. Take breaks and reward yourself when you have completed a challenging task. As we noted in Unit 2, when you have been away for a while from writing, it takes time to get up to speed. Reflect on how you write, the settings that work for you, and how scheduling writing impacts your achievements (time of day, length of session,

coping with distractions). For example, our students tell me that writing for a half-hour a day, though recommended for some, can also be frustrating when most of the time is spent catching up with where you last left off.

There has been a great deal written on wellness, health and wellbeing, some of it resulting from the self-isolation experience of the 2020 pandemic. While it isn't possible to give a detailed account here of how to cope with stress and mental well-being, there are resources that are easy to access, to help readers who need emotional and mental health supports.

- The Canadian Red Cross recently put out a little booklet "[Psychological First Aid](#)", (Canadian Red Cross, 2019), to assist people to increase their selfcare, and to find calm and comfort in their otherwise stressful lives. The Red Cross also offers on-line courses and workshops as resources for people seeking supports.

There are of course many other online support systems. A few of these are:

- [Crisis Services Canada](#) offers confidential, 24-hour suicide prevention and support. Anxiety Canada notes eleven different 'types' of anxiety and offers helpful approaches for dealing with them. The site links to tools for cognitive behavior therapy that allow you to use your cell phone to access tools to help reduce anxiety, worry, panic, perfectionism and phobias.
- The [Heart and Stroke Foundation's website](#) has a section on stress reduction.

Your university will offer resources for health and wellness. There are many just being offered as a result of the shift from person-to-person to online learning.

### ***Resilience***

The antithesis of stress is resilience; the ability to recover quickly from difficulties that impact your wellbeing. In the case of students working on their doctoral completions, stress may take many forms, in the workplace, at home and elsewhere. Stress is often associated with overload, with having too much to deal with when time, energy and resources are limited. A [study at Concordia University](#) examined how people react to the perception of work overload. The

researchers defined overload as participants feeling like they have too much to do without the resources to meet demands. Researcher Panaccio, cited above, notes “Something I found interesting was that perceiving to have poor [work-life-school] balance contributed to negative emotions, [such as] feeling sad, guilty or anxious, but it was really the perception of work overload that contributed to emotional exhaustion, a component of burnout.” Stress, leading to burnout, happened when students perceived that the workload was more than they could handle. Building resilience could help adjust more quickly to the workload, says Panaccio. She added that perhaps it would be equally effective to “develop time management skills [that] reduce the *perception* of having too much to do”. Panaccio may be suggesting a personal accommodation: Setting up routines that allow one to spend a dedicated portion of a week on thesis work serve not only to move the work forward, but also can alleviate the stress associated with feeling out of control of one’s thesis work. As little as a couple of hours a week of writing time can contribute to one’s resilience and wellbeing, by making progress and therefore reducing stress.

Five contributors to resilience are featured in the following [Irish YouTube video](#): Connect, Be active, Take notice – smell the roses, Keep learning, Give back)

Six ways to improve your health and well-being at work are suggested in this [YouTube video](#) (Be active – don’t spend the day seated; Use the stairs; Hold stand up or walking meetings; Take regular screen breaks; Go outside for lunch; Eat well).

There are also several YouTube videos that help you to relax, and reduce anxiety:

- [progressive muscle relaxation](#)
- [body scan meditation](#)
- [10 minute meditation for anxiety reduction](#)
- [20 minute guided meditation](#)

As [Ryder at Concordia University](#) noted, “Early intervention and help and support can save an awful lot of time and hassle, not to mention the indefinable morale decline that doesn’t have a fixed cost”.

Completing the degree can be euphoric. It can also be followed by a period of loss; a gap left in the time you used to allocate to your thesis, or a hole in your drive to complete. This ‘postpartum’ period is common, so plan for it and be ready to celebrate your accomplishments and then to turn toward your future.

Completing a thesis is a journey. It is seldom a sequential, step-wise process. It is frequently a series of twists and turns, re-designing, revising, rethinking. It is more like climbing a mountain backward than running a race. You are learning not only about your topic and its corollaries, but also about yourself; how you cope with pressure, how much work is appropriate for your energy and attention levels, how far you can push yourself, how resilient you are in the face of criticism, and how to prioritize the many demands on your time. Through it all you must maintain a belief in yourself and in the contribution to scholarship that you are making. This is your thesis; your brain child, your rite of passage to this degree.

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