Find Your Purpose:

The Path to a Successful Doctoral Experience

College of Doctoral Studies

ABSTRACT

Table of Contents

- Secondary Sources
- Tertiary Sources
- Seminal Works
- Empirical Research Articles
- Periodicals
    - Newspapers and Magazines
    - Professional Magazines and Journals
    - Peer-Reviewed Articles
- Abstracts
- Books
- Textbooks
- Dissertations
- Reference Lists
- Bibliographies
- Annotated Bibliographies

Searching for Materials

- Search Engines
    - Google Scholar
- Databases
    - EBSCOhost
    - ProQuest
    - The Education Resource Information Center (ERIC)
    - PsycINFO
- GCU Customized Access to Databases
    - LopeSearch
    - LopeCat

SECTION 3: THE JOURNEY AHEAD

Chapter 1: Welcome to the Doctoral Journey

By Dr. Wayne Schmidt

Introduction

Starting out, doctoral learners probably have many more questions than answers. The answers to some of these questions will be found in this text, while others will be found as learners progress through the doctoral program. Some learners may already envision themselves walking across the stage, while for others, what will happen in the next three to four years is somewhat more nebulous.

No matter the sport, before the game or match starts, the athletes get themselves ready: basketball players shoot lay-ups, quarterbacks throw passes, and runners practice in the starting blocks. Each of those athletes knows that the event actually begins long before the jump ball, kick-off, or starter's gun; it starts when he or she gets on the bus, heads to the arena, and begins the pregame routine.

Doctoral learners can think of the remainder of this chapter as doing the lay-up drills, throwing some practice passes to the wide receiver, or getting into the sprinter's stance. The information in this text will prepare learners for what lies ahead in their doctoral journey.

Program Overview

An important next step to take in the doctoral journey will be to answer a couple of questions: What is it like to pursue a doctoral degree? What will happen in the next three to four years? Learners' **enrollment counselors** have outlined several key aspects of the journey, and this text will expand on the helpful information and advice they provided.

In making a decision to pursue a doctorate, learners may have asked people they know who already have their doctoral degree about the experience. A typical answer might have gone something like this: "Well, I finished all my course work and was pretty excited about that. Then

I got a letter from the university that congratulated me on completing my course work and told me that all I had left to do was write my dissertation. I had no idea what I was going to research, much less how to write it! I didn't know where to begin. The joy of being finished with my course work was quickly replaced with being scared to death!"

This is an oft-repeated experience of people who received their doctoral degrees in traditional doctoral programs. At Grand Canyon University, the doctoral learners' experience will be substantially different. Learners will begin thinking and talking about their dissertation in their first course. They will be encouraged to begin gathering literature that will form the foundation of their dissertation research study. By the end of the first year of course work, learners should have at least an idea about what broad-based area they would like to research by answering 10 strategic questions about it. By the close of the second year, learners should have focused their area enough so they can present their project formally in a prospectus. Along the way, instructors will welcome conversation with learners about their areas of interest and how those areas might be studied. Instructors also will provide learners with exercises and assignments that will develop their research skills. The dissertation will be woven through the entire doctoral program, not delayed until the end.

People sometimes talk about going back to school to continue their education. In the case of pursuing a doctoral degree, this is true on one level and untrue on another. Yes, doctoral learners do go back to school, and, yes, they do continue their education; however, using the word *continue* suggests that a doctoral education merely continues what happened while working to earn a master's degree. A doctoral education is completely different from a master's program in which students are expected to read what scholars have discovered and written on a certain subject and then report what was said. In a doctoral program, learners are expected to read what other scholars have discovered and written and use that to guide their own discovery and

research. Along the doctoral journey, learners will be enriching and developing their ability to know broadly, think deeply, and act wisely.

When learners complete their degree, they will be the academic professionals writing the studies and journal articles that other students will read and use to discover their own new knowledge. Standing at the doorway of a new experience like that can be a bit frightening. To help through the challenges of the program, doctoral learners will have their enrollment counselors, student advisors, faculty, dissertation committee, and college staff to provide guidance as they make their way through the doctoral program.

Doctoral Perspective

Grand Canyon University offers a Doctor of Education (EdD) degree, a Doctor of Philosophy (PhD) degree, and a Doctor of Business Administration (DBA) degree. The EdD and PhD degree programs also have emphases. The difference between the three doctoral programs is a matter of perspective. First, they differ by degree type. The EdD is often considered a more practitioner-based degree. That is, its research and scholarship are usually focused around making changes or taking action vs. knowledge creation. The PhD is more of a scholarly degree. That is, its research is more focused around knowledge creation rather than making changes or taking action. But they are not that different. Both degrees involve action/change and knowledge creation. It is more of a question of priority and focus. So we often say the EdD learners are Practitioner/Scholars while the PhD learners are Scholar/Practitioners.

Second, they differ by content. The EdD is focused on Organizational Leadership. To be clear, despite having "education" in the title, the EdD is not an education degree in the same way an MEd is. The EdD program does not cover any kind of teaching skills or pedagogy. It is focused on leadership. The EdD designation is tied to the type of degree as discussed above. Courses cover leadership content in various forms and contexts. The PhD is focused on

psychology. So courses cover psychology in various forms in contexts. Another important caveat – the PhD is not a clinical degree. It is general psychology knowledge. It does not train learners to be psychologists who works with patients.

The DBA or Doctor of Business Administration describes both its content and type: DBA learners are Practitioner Scholars, and their coursework focuses on Business Administration

The Elephant and the Blind Men fable can be likened to how learners from each doctoral program perceive the same event. Imagine three GCU doctoral learners—an EdD student, a PhD student, and a DBA student—walk into a fourth-grade classroom to observe the class in action. The EdD learner may watch how the teacher guides the class through a decision-making process or how he or she leads the students through an unexpected change in the day's schedule, which are ways of seeing things through the perspective of leadership. The PhD learner may look at the same events, but, instead, notice how the students process information they hear and see or the steps students take in the learning process, all of which are ways of seeing things through the perspective of psychology. The DBA learner may look to see how the classroom activities are managed. All three will see the same events, but each will have a different description of what took place. Regardless of the degree type, the dissertation process and expectations are the same.

Doctoral DNA

DNA is a "molecule called deoxyribonucleic acid (DNA), which contains the biological instructions that make each species unique" (Deoxyribonucleic Acid (DNA), 2014, para. 2). GCU has developed its own unique DNA structure for each doctoral program to ensure that each program is integrated with critical learning outcomes, research skills, and resources to help doctoral learners successfully complete the program of study with a high-quality dissertation.

The GCU **Doctoral DNA** website contains information explaining what makes the doctoral program unique as well as much of the information that will be passed to learners during their doctoral journey. Also found on this website are timetables that explain the progression of courses and dissertation work as well as descriptions of the topics and direction of course work, which will evolve as learners make their way from through the program. The DNA also has a description of the available support services. As the doctoral journey begins, spending some time perusing the Doctoral DNA website will be time well spent.

Getting Ready

Several years ago, the Fram Company had a commercial with a line that became quite popular. The mechanic who was working on a car in the commercial said that when it comes to fixing cars, "You can either pay me now or pay me later." The point of the commercial was that it is easier and less expensive to pay a mechanic to replace the oil filter as a part of regular maintenance rather than paying the mechanic a substantial amount of money later when the car breaks down and needs major repair because it was not cared for properly.

Preparing for the doctoral journey is much like this commercial. Learners can either prepare now, or they can prepare later, but they will need preparation activities. Preparing for the doctoral journey before the course work begins is easier because learners have more free time now than they will once the courses begin.

There are four things learners should do to prepare for their doctoral journey: look at their calendars and develop a schedule; line up their support groups; refresh their reading and writing skills; and assess their ability to use technology, particularly Microsoft Word. In other words, doctoral learners should pack their bags carefully and make sure that they have their cars serviced in advance of starting their journeys. Being prepared and addressing these areas before the first course begins will enhance the learning experience.

Develop a Schedule

Doctoral course work will take, on average, about 20 hours a week to complete. Therefore, the first preparation task for learners is to find where they will be able to put 20 hours of course work into their weekly calendars. GCU recommends that in that 20-hour commitment, there should be at least one 6- to 8-hour block of uninterrupted, private time. This block will provide doctoral learners with the time needed to read relevant research, organize their thoughts, and express them in writing in a scholarly manner. With that much time needed during the week, it is critical that learners determine what they will adjust or eliminate in their current schedules to create time for their studies.

Doctoral learners often get creative finding 20 hours a week to devote to their studies. One learner began taking public transportation to and from work. He took his readings with him on the train and read during his 45-minute commute. Without adjusting his calendar, he now had 7.5 hours a week to dedicate solely to his doctoral course work. Another learner hired a gardener to do his yard work, which, he said, freed up 2 hours a week for him to dedicate to study. He claims that he still has the gardener several years after graduating, making not doing yard work an unexpected benefit of getting his doctorate.

For others though, creative options such as those are not available. When those without creative options talk about how they found the 20 hours, they tell of difficult conversations they had in which they explained to their children, family, and friends that they needed to attend fewer games, functions, and meetings.

There is no one-size-fits-all way to find the time needed for doctoral studies. Sometimes finding time can be easy, creative, and maybe a bit fun, but often there are difficult decisions to make and difficult conversations to have.

Identify Support Group

When thinking of a support group, most people will quickly identify their family (spouse, children, siblings, and parents) or close friends; however, a doctoral learner's support group may need to extend to include friends and coworkers as well. Having this group of people available is important to the success of a doctoral learner. Learners will need someone to help them get through times of frustration. There will also be times of discovery, and having others to share those discoveries with makes the new knowledge all the better. Long-distance runners know the importance of having people to encourage them at difficult parts of the run. Pursuing a doctoral degree is much the same.

A Culture of Writing Excellence

The College of Doctoral Studies has an ongoing goal of creating and maintaining a culture of writing excellence. When talking to doctoral learners or individuals who may be considering pursuing a doctorate, one may hear them say that they are going back to school to get their doctoral degree. They say that because they may well have been away from the school environment for a while. Being away from the classroom for a while means that some of the school skills, such as critical reading and academic writing, may be a little rusty. Learners in this situation will find that spending some time shaking the dust off their reading and writing skills will be time well spent. A search in Google Scholar on a topic of interest should provide numerous scholarly articles to read. After reading the articles, learners should write brief summaries of the articles and have a friend read their summary for clarity of expression and grammatical correctness. If writing is a struggle, or if grammar skills are rusty, students often find a refresher course at a local community college to be worth the time and effort. These can help learners to get back into the routine of being in school.

Part of writing excellence is formatting one's writing in a particular style. There are several format guidelines: Turabian, Chicago, and Modern Language Association (MLA) are

examples of these format guidelines. GCU uses the American Psychological Association (APA) format. It is imperative that all GCU doctoral learners are familiar with applying APA rules to writing scholarly papers for courses and also for the dissertation. GCU recommends that each learner purchase a hard copy of the most current version of the APA manual and keep it on hand at all times.

Computer Skills

A significant portion of doctoral curriculum involves interacting with a computer. Course syllabi, textbooks, and other course materials are available electronically. The Discussion Forum, where learners interact with each other and with their instructors, is an integral part of doctoral courses that is accessed via computer. GCU has an extensive, growing library, a vast majority of which is electronic, with books and journals available in digital format. In addition, using electronic search tools to find research related to a topic learners are studying is essential. Because doctoral learners interact with other doctoral learners, their instructors, course material, and research using computers, being comfortable using computers is a part of the doctoral journey that should not be overlooked.

If learners are comfortable interacting via computer, the next step is to look at their skills with Microsoft Word. Because the majority of the assignments learners will submit in their doctoral courses will be essays, being comfortable with Microsoft Word is essential. In Microsoft Word, doctoral learners must know how to

- format paragraphs and references,
- spell-check their documents,
- double space paragraphs, and
- review documents using the Track Changes function.

Learners who struggle with APA format issues often find that they have difficulty, not with APA format, but rather with getting Microsoft Word to do what APA format requires. Microsoft Word's default settings are somewhat different from APA requirements, so they need to be changed. Such issues can be addressed easily by conducting an Internet search, as numerous websites provide excellent guidance for the steps required to adjust Word's settings to align with those of APA format.

Worldview

First, and foremost, GCU is a Christian university. It has a rich heritage centered on providing an excellent academic and Christian education. At GCU, those two things are inseparable. The doctoral education at GCU is presented through the eyes of a Christian worldview.

Pritchard (2013, para. 2) defines worldview as, "a way of understanding the world that influences a person's opinion on morality, politics, culture, economics, and societal values. It also informs what a person believes about human behavior, the history of human civilization on earth, and the afterlife."

Whether expressly stated or not, each person has a worldview. It is worthwhile for learners to spend time formalizing their worldviews as they prepare for their doctoral journey.

Conclusion

Making the preparations outlined in this chapter can be done now or later, but learners will need to do them. It will be much easier to address these preparations before course work starts. Learners' preparations should include

- looking at their calendar to find a place for 20 hours of doctoral studies each week;
- lining up their support groups;
- refreshing their reading and writing skills;

- refreshing their APA knowledge and application to scholarly writing; and
- checking out their ability to use technology, particularly with Microsoft Word.

Each doctoral journey is unique; however, this much is certain, the next three to four years will be filled—filled with reading, thinking, reflecting, and writing.

There are people at GCU who are ready to guide, support, and encourage doctoral learners through the difficult parts of their journeys, as well as share in the times of joy.

When those times are in learners' rear view mirrors, and they walk across the stage and are called doctor for the first time, everything will have been worthwhile.

Sidebar 1

The Elephant and the Blind Men

The fable of the Elephant and the Blind Men works as a representation of how learners in the doctoral program can view the same event with different perspectives:

> Once upon a time, six blind men lived in a village. One day, several villagers told them that someone had brought an elephant to the village square.
>
> None of the blind men had any idea what an elephant was, and even though they would not be able to see it, they would be feel what an elephant is like, so they decided to go..
>
> When the men arrived at the village square, they all touched the elephant.
>
> The first man touched the elephant's leg and said, "This elephant is a like pillar."
>
> "Surely not! It is like a rope," said the man who had touched the tail.

"You are both wrong. An elephant is more like a thick tree branch," said the third man who touched the trunk of the elephant.

One man, who touched the elephant's ear, said, "It feels like a fan."

The fifth man touched the elephant's side and exclaimed, "It is more like a huge wall!"

Touching the elephant's tusk, the sixth man said, "It is very much like a solid pipe,"

The men began to squabble over who most accurately described what the elephant was like. They were becoming agitated with each other, when a wise man passed by and overheard their disagreement. The man stopped and asked them, "What is the matter?"

"We cannot agree to what the elephant is like," one of the men replied.

After each man provided their description of the elephant, the wise man explained that all of their depictions were accurate. "You each touched a different part of the elephant, each of which is as you described: a pillar, a rope, a branch, a fan, a wall, and a pipe."

Sidebar 2

The 10 Strategic Points

In the Prospectus, Proposal, and Dissertation, there are 10 key or strategic points that need to be clear, simple, correct, and aligned to ensure the research is doable, valuable, and credible. These points, which provide a guide or vision for the research, are present in almost any research.

1. Topic—Provides a broad research topic area/title.
2. Literature review—Lists primary points for four sections in the Literature Review: (a) background of the problem/gap and the need for the study based on citations from the

literature; (b) theoretical foundations (models and theories to be foundation for study); (c) review of literature topics with key theme for each one; and (d) summary.

3. Problem statement—Describes the problem to address through the study based on defined needs or gaps from the literature.
4. Sample and location—Identifies sample, needed sample size, and location (study phenomena with small numbers and variables/groups with large numbers).
5. Research questions—Provides research questions to collect data to address the problem statement.
6. Hypothesis/variables or Phenomena—Provides hypotheses with variables for each research question (quantitative) or describes the phenomena to be better understood (qualitative).
7. Methodology and design—Describes the selected methodology and specific research design to address problem statement and research questions.
8. Purpose statement—Provides one sentence statement of purpose including the problem statement, methodology, design, population sample, and location.
9. Data collection—Describes primary instruments and sources of data to answer research questions.
10. Data analysis—Describes the specific data analysis approaches to be used to address research questions.

Table 1.1

Master's Degree vs. Doctoral Degree

Master's Degree	Doctoral Degree
Introduction of theories	Application of theories to new and complex situations
Demonstrate comprehension of theory and concept	Cognition
Application of theories to basic situations	Analysis
Build upon existing skills	Synthesize existing knowledge and create new knowledge to add in a field
Problem-solving	Ability to theorize, research, and provide support for a hypothesis
Decision-making	Development of new theories
Ability to demonstrate comprehension of relationships between theories	Apply existing knowledge and perceive new connections
Organize	Evaluate theory application and build new hypotheses based on results
Internalize ideas	Theories presented as a foundation to build new knowledge
Expand on the basic knowledge with advanced theories	
Organize and internalize values	
Theories presented for basic application	

Table 1.2

Difference in Doctoral Degree Programs

Criteria	Practitioner Degrees (EdD, DBA Programs)	Doctor of Philosophy (PhD Programs)
Goal of Program	Application	Research

Research Methodology	Mild Emphasis	Strong Emphasis
Statistical Preparation	Moderate	Extensive
Dissertation Focus	Experience-based	Theory-based
Nature of Question	How?	Why?
Intention	Interpretation	Discovery

References

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Chapter 2: Time and Tools

By Dr. Ronald Berman

Introduction

Time can be a friend or an enemy for the doctoral learner.

As discussed in Chapter 1, pursuing a doctorate is different from completing a master's degree. Simply put, a master's program of study requires students to learn to read someone else's book, while in a doctoral program of study learners acquire the skill to conduct research and write their own books.

An original dissertation manuscript cannot be completed in a single sitting or in a single version. This level of scholarly writing requires personal reflection to consider different perspectives, integrate different theories, review conflicting empirical research, and, ultimately, synthesize what has been read in order to add to the body of knowledge within the discipline. Complex cognitive activities require substantially more time than what was required in previous academic programs. Time is needed to seek guidance from faculty and other learners, discuss research designs, and determine the validity of existing sources. By allocating and using time wisely, doctoral learners may progress more rapidly in their program of study. Successful faculty and recent graduates have discovered a variety of shortcuts, that, when applied consistently, will help learners to succeed.

Time Management

Perhaps the first place to begin developing a personal strategy of success is to consider the involvement and support of family members. It may seem a little strange when discussing time management to talk about family support; however, how one manages time will affect how one's family manages their time, and vice versa. In order to be successful, it is imperative that a learner's family understands the commitment needed regarding support and study time. The best, most efficient time-management system cannot compete with a family's demand for a learner's time.

After an initial conversation with their family, doctoral learners will need to make a list of all the family, professional, civic, and personal activities in which they currently participate. This list might include food shopping, volunteering, mowing the lawn, attending PTA meetings, attending children's

sporting events, playing sports, listening to music, and exercising among other things. From this list, learners will need to identify those activities in which they will no longer participate or will have another family member perform for them.

Doctoral learners should not make plans regarding how they spend their time without discussing this with their family or support group. Participating or no longer participating in personal activities, sporting events, and professional obligations may require others in a support group or family to assume this additional responsibility as the learner progresses in their program of study. As mentioned in Chapter 1, identifying 20 hours per week for your doctoral studies is challenging and will require the support of the family or support group.

Develop a Schedule

Many people think that a schedule is rigid, inflexible, and generally inhibits them from doing all the things that they want to do. However, when balancing a professional and personal life, a good schedule helps to allocate time to complete the most important activities. Schedules also can reduce stress by helping to decide what learners can and cannot do when there is limited time.

There are five things to remember when developing a schedule:

1. The support of family is critical. Make a schedule well in advance to ensure participation in birthday and anniversary celebrations and other family events. These special events reinforce and strengthen the family bond. Do not miss them.
2. Previously in undergraduate and graduate programs, it may have been possible to write an individual assignment the night before the due date; it is not possible to do this successfully at the doctoral level. Scholarly writing at the doctoral level requires synthesis and reflection, which requires substantially more time. Therefore, doctoral learners should plan to finish the first draft of an individual paper at least two days before the due date. This will provide an additional opportunity to reflect and edit the initial draft of the paper.
3. Weekends provide time for both studying and for family activities. For example, some doctoral learners choose to wake up early on both Saturday and Sunday and work from 5 a.m. to noon.

Blocking off time in the morning potentially allows free time for family, personal, or other professional activities from noon to 5 p.m. Then, if more time is needed to study, read, or write, doctoral learners can use part of the weekend evening. Other learners may prefer to use Saturday and Sunday mornings and weekend afternoons as free time to shop, play, and interact with others. This schedule allows learners to allocate several hours later in the day for their studies.

4. Consistency and persistence are critical to success. Doctoral learners should think of themselves as athletes preparing for a marathon, which requires practice and commitment every day. Therefore, they should read, write, or study every day. There will be days when unexpected events occur and completely derail the schedule; however, just as dedicated athletes recover and make the best of the situation by completing a partial workout, so should learners. Each day, learners should spend at least 45 minutes reading or reviewing a draft. Completing even a small task will help learners to make progress. It also will help to reduce personal stress by accomplishing something on a day that was not very productive.
5. Each week, doctoral learners will be exposed to a variety of perspectives, philosophies, and research approaches that will broaden their own understanding of the foundation principles of their discipline. Assigned course readings, student discussions, and independent readings provide a wealth of information that may be difficult to internalize without first spending quiet time to reflect on the linkage and importance of these resources. Therefore, learners should schedule at least 45 minutes of quiet time each week to reflect on what they have read and consider what seems interesting or unexpected. Learners should ask themselves, "What do I not know?" Learners should never conclude this session without identifying three things that need to be investigated. Spending weekly quiet time in this manner can provide great personal growth by helping to make sense of similar and yet conflicting theories and approaches that are presented in the literature. Understanding the differences in the literature is the first step in the identification of a dissertation topic.

Formal Scheduling Tools

Use of a paper calendar to track professional obligations and family commitments, which may have worked well in the past, may no longer be as effective when adding additional commitments and assignment deadlines necessary to progress in a doctoral program. Weekly submission of written assignments referencing multiple empirical research studies completed over several weeks requires an advanced set of tools to manage one's schedule. Changes in research focus, increased complexity when drafting doctoral assignments, and longer than anticipated time needed to read empirical research necessitates the use of schedule management techniques, beyond the usefulness of a paper calendar.

There are many very good, easy-to-use, free, schedule management software solutions available for personal computers and even computer tablets. Computer systems usually include calendar management in their email system. On both Apple and Microsoft based computers, doctoral learners may designate specific colors to represent individual task categories, making it easier to view an entire calendar in a single glance. For example, a doctoral learner may designate green for a doctoral written assignment, blue for a family activity, and red for a professional commitment. Once entered, many scheduled activities will change. Therefore, if possible, select a computer based calendar that may also be viewed and updated on your cell phone or tablet. It is advantageous to immediately modify your schedule as needed when it occurs, rather than trying to remember to modify it later. In addition to computer based calendars, there are many calendar management apps that run on Apple and Android devices. As with computer email calendar systems, tablet apps may also be viewed on multiple devices.

Find a Place to Work

In addition to having a plan, doctoral learners should have a place to work. If possible, learners should secure a dedicated work area in their homes that is separate from the rest of the family space. Ideally, this room will have a door, as it will help to provide a quiet space where learners can focus when working. The work area should be comfortable and have all the necessary tools needed to read, write, and reflect.

The work area should be well lit and include a large desk and file storage. A large desk will enable learners to work comfortably, and the file storage will help reduce clutter.

Navigating the Learning Management System

LoudCloud is Grand Canyon University's learning management system, which is the computer application doctoral learners use in all courses. Learners will use this system to interact with other learners, communicate with faculty, post responses to discussion questions, submit papers, and review grades and comments. Although advisors or enrollment counselors most likely will walk learners through the use of this system, learners should spend a little extra time up front to really understand how to use LoudCloud. Reviewing the instructional videos will save a significant amount time in current and future courses. Reviewing the syllabus at the beginning of every course will help learners plan their time. A detailed understanding of the course description, required course materials, topics and objectives for each module, lectures and readings, assignments for each module, discussion questions for each module, and the course grading scale will help to optimize the learning experience in the course. Additionally, review instructor announcements, additional readings, references, and/or guides added by faculty to augment the course. With the course syllabus in hand, learners should note on their schedules the due date for major assignments. They should make a plan to ensure that they are able to complete the initial draft several days prior to the due date. Learners also should review the assignment's grading rubric before they begin to write, as this will save a considerable amount of time. The grading rubric clearly identifies what the paper should focus on and how the paper will be graded. Learners who are unsure about the assignment after reviewing the rubric should first browse the QFI (Question for Instructor) forum to see if others in the class have submitted a similar question regarding the assignment. Learners may also communicate privately with their instructor by posting to their individual forum or by initiating contact by telephone during faculty office hours.

Participation in the class discussion is an integral part of the learning process. It is through discussion and debate based on credible academic sources that learners develop their academic voice, and learn to interact with others who have a different perspective. To accomplish this, doctoral learners are required to post a substantive initial response to DQ#1 by day three of the topic and to DQ#2 by day five. Initial posts must have at least one supporting reference and be between 150 – 250 words. Additionally, doctoral

learners are required to make three substantive follow-up post during the module. In total, doctoral learners will submit at least five posts per week (two initial posts and three follow-up posts performed on a minimum of three days).

Written individual assignments also provide the opportunity for continued development and refinement of your academic voice. As doctoral writing requires substantial more time to prepare an initial draft and complete the final edit, it is important to continually look for opportunities to maximize time. LoudCloud provides planning assistance by displaying reminders of future assignments due dates. To be successful, learners must learn to use their time wisely. As soon as one assignment is completed, the learner must look ahead, and begin the next course activity! They must start reading the next book chapter, continue to participate in the course discussion, or begin outlining your next assignment. Learners should develop an approach to make progress each and every day. Once this approach is adopted, it will help accelerate progress in their program of study and will establish a very positive framework that will become incredibly valuable as you embark on the dissertation phase of your program of study.

Finally, the learner must always read course announcements when they begin class and continue to do this throughout the remainder of class. Faculty may periodically post announcements about the availability of new course resources, optional readings, clarification of assignment directions, and even changes to assignment due dates based on inclement weather. Being knowledgeable and up-to-date with all course announcements will ensure that the learner maximizes their earning experience and will ensure that time is well spent.

Basic APA Format and Style

Doctoral learners' writings must be detailed, informative, easy to read, and in compliance with doctoral writing standards, which ensure information is presented in a scholarly manner. The best way to achieve proficiency in scholarly writing is to begin using APA format immediately. Once mastered, writing in this format helps the author to efficiently present complex ideas, charts, and graphics. It also

ensures that the author correctly references the works of others. It also helps the reader by providing a consistent format in which to read. Getting started is easier if doctoral learners remember to

- double space their writing,
- learn to use hanging indents,
- use appropriate margins and level headings,
- preset the type format to 12-point Times New Roman, and
- set paragraph spacing to 0.

The guidelines for the APA format are outlined in the *Publication Manual of the American Psychological Association*. However, the APA manual is more than just a set of rules about margins, fonts, and indents; it is a guide on sentence structure and word choice used in scholarly writing. Because becoming a scholarly writer is part of becoming a doctor, being familiar with the APA format is essential. There are also numerous resources available on the Internet. One of the more frequently used sites is the Purdue Online Writing Lab (OWL). Websites like Purdue's OWL, coupled with familiarity with the APA manual, should reduce any trepidation a doctoral learner might have about formatting. GCU highly recommends that each learner purchase a hard copy of the most current version of the APA manual to use as reference when completing writing assignments and working on elements of the dissertation. This important resource should be used throughout the doctoral program.

Library Basics

Fully understanding the body of research literature within a learner's program of study becomes the basis for his or her research and dissertation. To acquire the necessary theoretical foundation to initiate research, learners will read, discuss, analyze, and compare content from a variety of authors published over an extended period of time. To assist in this effort, the GCU Library offers unrestricted access to electronic books and more than 45,000 full-text journal articles and reference guides.

The GCU Library website is organized to help locate books and journal articles efficiently. It also contains links to specialized software to organize a learner's list of references. While written tutorials are available, learners also may contact GCU librarians via phone, e-mail, or live chat for assistance locating specific documents or reference materials. Library training is also provided online.

Learning to critically read empirical research is an important skill needed to succeed in the doctoral program. Dissecting research to understand its theoretical foundation, identify the research question, assess the methodology, and critically view the results is the very first step to identify a gap in the literature which may become a factor in defining a dissertation topic. To expedite the acquisition of this competency, GCU offers doctoral learners free access to the research summarization program, LitAssist™. Lit Assit is a teaching tool that prompts new researchers to extract specific details related to the literature. The prompting technique is similar to the cognitive process that experienced researchers have learned to do, which novice researchers and doctoral learners have not yet mastered. Over time and with continued repetition and usage, learners acquire critically reading skill while also creating a personal literature database that may become the basis of their dissertation literature review. LitAssit is unique among other systems as it is designed to rapidly assist in the development of research competency for novice researchers.

Plagiarism

Doctoral learners will be reading and becoming experts on theories, approaches, and techniques published by authors who have spent their lives enhancing the profession and academic discipline. Not only is citing one's sources an academic requirement, doing so will save time. Citing references helps to develop a better understanding of the major contributors in learners' fields of study. Maintaining a

detailed reference list, segmented by topical area, will reduce the effort, complexity, and duration of drafting the reference list for the proposal and final dissertation manuscript.

Plagiarism is a serious violation. It is unethical and academically dishonest not to give appropriate credit for the ideas of others. To avoid accusations of plagiarism, identify all material that comes from somewhere else with an in-text citation that includes the author and year (e.g., Berman, 2012) and a corresponding entry in the reference list. Doctoral learners who fail to follow these requirements face disciplinary action ranging from a failing grade on an assignment to expulsion from the university.

Conclusion

Tools and techniques will help doctoral learners to succeed and will save them time. Managing time and family schedules, learning to use a word-processing system, employing APA when writing, using the library to locate content, organizing email, and employing technology tools correctly will provide doctoral learners with immediate time-saving benefits. Using these tools in combination with a thoughtful, realistic, weekly schedule developed with the support of family will help to make the doctoral journey a positive, successful, and memorable experience.

Technology

In addition to the necessity of learners sharing their vision with family, having a plan, and setting aside a quiet place to work, learners should consider how to best employ technology. Regardless of experience and expertise using technology, great success may be achieved if doctoral learners:

- consider replacing computers three or more years old, as computer hard drives are more likely to fail after three years;
- backup personal computers often or consider subscribing to a backup service;
- use a second monitor to enable them to view and work easily on multiple documents at the same time; and

- consider deactivating the email notification feature on their computers and other devices. Designating a time to check and respond to email will reduce the number of distractions.

Chapter 3: The Doctoral Identity

By Dr. Jim Hadley

Introduction

If you do not know who you are, how could you know what you have become?

This chapter discusses the notion of establishing a doctoral identity and embracing the dispositions necessary to become a doctoral researcher and scholar. This concept of doctoral identity also includes having an understanding of personal dispositions. According to Merriam-Webster, a disposition is a predominant tendency to act in a certain manner under given circumstances (Disposition, n.d.). Another view of disposition is that it is a part of a learner's own organic and authentic self, similar to what Carl Rogers (1964) indicated when he said, "the inner world of the individual appears to have more significant influence upon his behavior than does the external environmental stimulus (p. 125).

The idea of becoming an authentic self is not only plausible, but it is within the reach of those who want to understand their own dispositions. It is a hope, a desire, and a quest to understand one's real persona. It encompasses growth and development of a sense of authenticity in any domain. Maslow (1965) spoke of authenticity as the pinnacle of development in his work on self-actualization and peak experience. Tillich (2000) suggested, "We cannot compel anyone to accept himself. But sometimes it happens that we receive the power to say 'yes' to ourselves, that peace enters into us and makes us whole …" (p. 4).

Doctoral learners are embarking on a journey that cannot be taught as a skill or a competency; it is a journey that only they will be able to describe and live phenomenologically, experiencing as only they can. There will come a time in this journey when doctoral learners recognize change in themselves. They will discover that the process of earning their doctoral

degree has affected changes in the way they think and live in the world. Once learners complete their doctoral degree, they can reflect on what they can give back to the world. Pursuing a doctoral degree is an undertaking of enormous magnitude. To navigate this journey, it is important to understand some of the challenges, expectations, and adjustments necessary to be successful.

Role and Dispositions of a Doctoral Learner

When one becomes a doctoral learner, he or she may encounter different expectations from peers, faculty, and family. There is a perception that a doctoral learner is expected to display and embrace certain dispositions. Just as there are expectations for law-enforcement officers to display and embrace certain dispositions in the role of protecting citizens and upholding the law, there are expectations that doctoral learners must recognize. Learners are expected to exhibit certain dispositional tendencies in preparation for becoming scholars.

At GCU, doctoral learners are expected to embrace and adhere to specific dispositions as part of the process of earning a terminal degree. Doctoral learners:

- Are dedicated Scholar-Practitioners, passionate about their field, and become leaders in the disciplines and communities they serve.
- Are committed to producing scholarly research, which is ethical and academically honest.
- Are self-directed, able to self-motivate toward their continued pursuit of knowledge and are responsible for their own learning.
- Engage in reflective scholarly practice, asking questions of both self and others.
- Actively communicate effectively and professionally with peers, faculty, and college staff.

- Are accountable for the quality and academic integrity of their own scholarship and research agenda.
- Are receptive to the feedback, analysis, and constructive critique from peers and faculty within their scholarly community.
- Demonstrate how to design, execute, and present independent, academically rigorous research, that adds to the body of knowledge within their discipline. (Grand Canyon University, n.d.).

Doctoral learners should maintain a relationship based upon respectful communication with everyone they come in contact with; they should be dedicated to growth and the pursuit of a higher understanding of scholarship and knowledge; they should be committed to self-reflection and improvement of critical thinking in all domains of life. Additionally, enculturation to this philosophy of advanced scholarship and learning includes changing the attitude of the learner. Positive collaboration with peers, faculty, and staff is a grounding principle critical to successful completion of course work and the dissertation. These dispositions provide a foundational approach in dealing with fellow classmates, faculty, and staff. Professional communication, self-appraisal as it relates to owning criticism and feedback from faculty, and being assertive in moving forward with the doctoral degree requirements all speak to the dispositional expectations of learners. These dispositions set the standard and expectations of the Scholar-Practitioner model for the College.

As discussed in Chapter 1, a doctoral degree is not merely completing assignments; it is diligence in completing research and exploring a body of knowledge that may be foreign, which may contain new vocabulary and conceptual thinking. A doctoral degree requires significantly more time reading peer-reviewed material. A hypothetical assignment might be to read two

chapters from a seminal book and ten journal articles. These reading assignments may be so lengthy and contain so many new vocabulary words and concepts that learners have to reread a paragraph multiple times to make any sense of it.

Ask anyone who has gone through this rigorous process, and he or she likely will discuss the sacrifices, the number of edits to the dissertation, or the number of times the APA manual had to be consulted to correctly cite and reference a work to make it perfect. Doctoral learners must prepare to make these same sacrifices, in addition to others that will be uniquely their own.

Emotional Expectations

Doctoral learners will experience stress; however, for the most part, the stress is manageable if learners are aware and have the appropriate contingencies to handle the demands. This section will not prescribe how best to manage time or how to eliminate stress; suggestions for those occurred in the previous chapter. This section offers ideas that may be effective in maneuvering through the challenging emotional maze of doctoral degree completion.

Managing the demands of the assignment deadlines will be a primary consideration in a successful doctoral journey. Faculty may not be as open to missed or late assignments as learners have been accustomed to in previous college experiences. Faculty who teach doctoral-level courses recognize that life happens, but they also will have a level of expectation that doctoral learners must persevere through life issues. It will be critical that learners recognize the deadlines they are required to meet. If learners plan adequate time to meet those deadlines each week, stress can be mitigated. Waiting until the eleventh hour on the due date likely will result in poor quality work, and, more than likely, the professor will recognize the work as a last-minute response.

Realistic Performance Expectations

In addition to planning time effectively, setting realistic expectations will also help to manage stress. One important expectation is that doctoral learners accurately assess their own learning abilities. Some learners may have come to the doctoral program with a certain expectation about how they will perform based upon previous experience and success at the master's degree level. Learners who earned a 4.0 Grade Point Average in their master's degree may have some unrealistic expectations about how they will perform at the doctoral level. The level of reading and writing rigor that learners experience during doctoral study typically does not lend itself to perfect scores. Feedback about how to improve should be expected, and openness to growth in both subject matter and writing competencies are valuable. Instructors are scholars and practitioners who typically have been in their fields of expertise for many years and have published in many venues. Learners' research, synthesis, and writing skills will develop throughout the program, and rarely are these skills perfected at the onset. Learners accustomed to perfection should not let receiving a B minus set them back.

In the Olympic Games, athletes train most of their lives to compete and represent their countries on the Olympic stage. An Olympic gymnast may indicate that making the Olympic team is not enough, but that she also wants to win the gold medal in her event. When it comes time to hit the balance beam in competition, the judges are looking at every move. A barely missed landing on a reverse summersault, enough to catch the eye of several judges, shaves off tenths of a percentage leaving the gymnast in fourth place for the competition and off the medal stand. Is she a failure? Absolutely not. She did not meet her goal of winning gold, but she competed at her personal best and in the Olympic Games. Just as the Olympic Games are the pinnacle of athletic competition, pursuing a doctorate is the height of academic degrees. Getting a B minus in a course or on a paper at this level should not be viewed as a failure. Setting

realistic expectations is important regarding the time, effort, and financial obligations learners will contribute to their degree program.

A doctoral graduate shared a memory of an instructor who asked the members of his class to write down the only thing that would keep each of them from completing their degrees. After several minutes of consternation, one learner wrote down a single word. The word was "ME." The learner realized that the only thing that could prevent him from completing his degree was himself.

All But Dissertation (ABD) is a moniker doctoral learners do not want. Completion of the terminal degree is the quest, the journey, and a part of the learner's life. If getting a doctoral degree were easy, a much higher percentage of the population would be walking around with a terminal degree.

Internalizing Knowledge

At this stage in an academic career, learners should how they best learn, retain, and recall information to apply to new concepts and questions. Perhaps learning is more effective in a quiet environment such as the library. Perhaps information is retained more readily when it is read and reread several times. Metacognition, or thinking about thinking, is a strategy important to master in order to hone the critical-thinking skills necessary to understand disparate concepts and theories. Doctoral learners will need to understand how to synthesize ideas into the literature review of their dissertations. Metacognitive strategies may assist learners in recognizing which research articles to include in their essays and how those articles speak to the concepts at hand. These strategies are fluid, however. Learners will find that different professors have different expectations about what seminal material is essential and what peripheral material is not as relevant.

Bandura's (1997) theory of self-efficacy and Weiner's (1985) concept of attribution theory are models directly related to the doctoral journey, and the two tie together and relate nicely to the concept of metacognition. Bandura (1997) suggested that the strength of a person's belief that he or she can complete a task successfully is related directly to the eventual accomplishment of that goal. The greater a learner's self-efficacy, the more likely he or she is to reach the goal. Weiner (1985) proposed that in a learning context, individuals are motivated by the successful outcome of completing an academic task because of the way successful completion makes individuals feel about themselves. Both theories are similar in the sense that behavior is directed positively toward the successful completion of a goal, and completion of that goal creates a feeling that something important has been accomplished. Individuals recognize they are able to persevere and break down obstacles to reach their goals. The circular fashion in which the concepts of metacognition, self-efficacy, and attribution are tied together is illustrated in Figure 3.1.

Once doctoral learners use metacognition to identify an effective strategy to initiate their tasks, they approach the task with their toolbox of research, critical-thinking, and effective

writing strategies. Completing similar challenges in previous course work reaffirms the self-efficacy that they are able to break down the obstacles necessary for completion of the assignment. After completing the assignment, they feel good about themselves because it was a difficult goal, and, by completing it, they now have knowledge to complete subsequent assignments. From a theoretical perspective, this sounds easier than the actual application; but that is the point. Once learners have achieved a goal, they have strategy, motivation, and reward for their efforts and something to fall back on when the next difficult assignment is presented.

Becoming an Independent Learner

Imagine the number of circuits, processors, and transistors in a tablet, such as an iPad or a Surface, and what it took to invent and make those components. Doctoral work is not necessarily like constructing electronics, but there are similarities with regard to learners figuring it out all the details on their own and exploring new territory in which they create new knowledge. The expectation of all doctoral learners is that they add to the existing body of knowledge and literature through their own independent research and publication. Learners will find enthusiastic faculty members who are interested in their topics; however, those same faculty members will point out the number of times that learners' topics may have been replicated in one form or another. One question learners will hear numerous times is, “What prior research has been done on the topic, and what gaps have been revealed?” An independent learner is one who can take nebulous or limited guidance, sift through tremendous amounts of data, and look through the reference page of a tertiary article to discover resources related to the topic of interest.

This is not to say that there are no processes, milestones, guides, and policies to follow as doctoral learners move through their course work and dissertation. Leaners need to be aware that there may be many obstacles to negotiate because they will be conducting original research that

may not have any prior protocols or paradigms. This is really the crux of becoming an independent learner. The role of faculty and dissertation committees is to help the learner to hone a topic that is manageable and to create a dissertation proposal that can be completed within a reasonable time frame.

Although learners will find faculty with similar interests and background in their research topic, ultimately, this is the learners' research/dissertation, and they have complete ownership of the results. Taking ownership does not mean that doctoral learners will not receive extensive feedback, critical edits, and strong guidance from their faculty now and their dissertation committees later. What it does mean is that learners are responsible for answering that feedback, making the necessary edits with the highest possible quality, being proactive in responding to feedback, managing their time along to the way to avoid delays, and listening to the guidance from faculty who understand how to successfully complete the doctoral journey. Learners who need detailed and sequential instructions will have to change their approach a bit. Being an independent learner also means defending an approach and position based upon sound academic research and literature, not opinion. That is what will be expected of doctoral learners when they have to justify their assertions and claims through relevant and recent literature.

Realistic Approach to Conducting Research

Creating new knowledge sounds formidable—and it is—but it happens every day. It will be the learner's responsibility to forge ahead with the research, to examine the existing body of knowledge, and to determine how this particular study can contribute to what has been written and researched before. For example, the concept of leadership is a very popular topic in the social sciences. A quick search of the literature will show thousands of peer-reviewed works. Exploring new territory on this concept would take strong analytical and critical-thinking skills.

Where would you start if the topic has already been researched and written about? What are effective ways to review and understand the massive amounts of literature to have a better understanding of what can be researched and tested from an original perspective?

This is where a doctoral learner will need to break existing paradigms and look for gaps in the literature that are reachable and contributory. For example, take the idea of personality and leadership: A quick search of an electronic library using the search terms "personality AND leadership" resulted in 7,628 peer-reviewed journal articles on this topic. Should that dissuade a learner from researching the two components of interest? Perhaps the learner is interested in what types of personality characteristics are most prevalent in strong leadership styles. This is where learners can become independent, looking for uncharted territory and thinking out of the box to continue to hone an original research topic.

However, the learner should not try to read all 7,000-plus journal articles to find gaps in the literature. A more effective way to approach this might be to look at a single personality component, such as the concept of intuition, and pair that with leadership to see what the search results look like. The learner has read prior research noting that intuitive leaders have a greater impact on an organization than individuals who are less intuitive. Another search of the electronic database using the search terms "intuition AND leadership" yielded 270 peer-reviewed articles on this topic, which is quite a reduction from the previous 7,000. The learner may feel it is possible to read all 270 articles in about six months, but is that practical? This topic is still too broad and needs even more fine-tuning.

Therefore, to break this down even further, the learner has read that leaders who base decisions primarily on intuition are effective in certain types of organizations and that they are successful business leaders. The learner adds all of these phrases and finds there are 13 articles

that match at least all three of the phrases identified. This is significantly more manageable. In a matter of minutes, the learner's small search has yielded relevant and reasonable results.

As learners read these articles, they may become aware that research has already been completed on the topic in which they are interested. Since their responsibility is to create an original research question and new knowledge, what options do they have now? As independent learners, they should start to look through the reference pages of each of those additional articles to find the roots of the research. When they find those articles, they look at the references of those articles to find gaps in the research and literature that can provide several ideas about what direction to take their own research topic.

This is just a small example of some of the research and topic hurdles learners may face as they begin their doctoral journey. As learners start their course work, it is important to remain flexible in identifying an appropriate research topic, because there is a very high probability that it will change along the way. If learners are inflexible and only pursue what they have in mind from the beginning, they may find themselves frustrated by suggestions from faculty throughout their journey. Remaining flexible will allow them to take ownership of their research and will help to eliminate stress if they find out their perfect research topic has been replicated more than 10 times.

Persevering Through the Dissertation Phase

There are countless stories at every doctoral college across the nation in which learners who have been adept at completing course work have been halted in their tracks with the dissertation process. Learners may already be familiar with the phrase “paralysis by analysis,” which simply means that thinking too much about something can result in a lack of action. Many learners have constructed a study with strong alignment from the problem statement through the

methodology, and they have robust data, but they become stuck when it is time to write the dissertation. This is where taking ownership of the research project comes into the equation. The dissertation committee is responsible for providing learners a compass to stay clear of the hazards and pitfalls in their journey. That compass may not only cover true north but may lead to other territories that are uncharted; however, it is the learner's responsibility to determine the right course of action.

Financial Responsibility

One last part of becoming an independent learner is the financial responsibility for doctoral education. Paying back what is owed is the expectation of those providing the loan, the doctoral community, and fellow colleagues, and it is what learners should expect from themselves. This expectation of financial responsibility to one's education fits into the doctoral dispositions discussed earlier in this chapter and into the ethical considerations of becoming a scholar-practitioner.

Academic Preparation

In preparation for the life-changing journey that is doctoral study, schemata changes will occur and learners will need to start building new habits and behaviors that will assist in their success. Learners will recognize immediately that the language used in the research studies they are assigned to read may seem different or foreign. They should not see this as an impediment, but as an opportunity to increase their vocabulary, which will help in writing their own essays. Learners may consider creating a lexicon of new words they come across, because these words may be prevalent throughout the reference material. Learners will assimilate this new research and develop a new way of communicating in due time.

Reading

One of the best methods of acquiring knowledge on a dissertation topic is to read articles and dissertations. If learners are dedicating the recommended 20 hours a week to their doctoral studies, devoting much of that time to reading journal articles, they will see their vocabulary increase exponentially over time. If learners take the time to read extensively, they encounter new words, and, contextually, they will have a better understanding of what the researchers and authors are trying to communicate.

Reading is critical to a learner's ongoing dissertation preparation. There are typically five chapters in a dissertation, but every published dissertation has a literature review chapter. This is typically the longest, most extensive, and most difficult to write. Doctoral learners should catalog every book, journal article, and any scholarly material they read, and record that for potential inclusion in the literature review chapter. This proactive record keeping will save learners a tremendous amount of time in their future classes, because many of the books, empirical research journal articles, and authors they will be reading will be applicable in many of their courses and in writing their dissertation. The importance of reading cannot be overstated.

Writing

Once learners have completed the required reading, they will move on to writing about a particular topic. How do doctoral learners know when they have become scholarly writers and can meet the standards of an effective doctoral writer? This nebulous concept faces all faculty and learners pursuing their terminal degrees, and although rubrics have become a standard means of assessment, the elusiveness of writing in a doctoral tone and voice is more difficult to capture and measure. College faculty members recognize scholarly writing when they read it, and they will advise doctoral learners continually on how to capture effectively the proper tone of scholarly writing. Certainly, instructors will make, and have made, thousands of comments over

the years regarding correct subject/verb agreement and poor syntax, as well as comments on sentences with little specificity and paragraphs that are one run-on sentence. These comments are made with the goal of helping learners identify and fix these issues. Learners who have stronger writing skills may be coached more easily regarding content and analysis of subject material, while learners who struggle with English composition at the basic level may be directed to seek assistance to supplement their doctoral course work.

As incoming doctoral learners, it is important to understand that being able to produce sound academic writing is critical. The College wants to ensure that all doctoral learners are provided the opportunity to learn the necessary skills to be successful during all phases of the dissertation process from the beginning to the end of the program of study. The College has identified writing skill as a competency that needs attention and focus from all faculty and learners within CDS.

The difficulty of mastering academic writing is not only identified with new doctoral learners, but it also seems to be a persistent issue identified by the Academic Quality Review (AQR) team as learners are writing their dissertations. Faculty members spend significant time identifying grammar issues, formatting problems, and very basic sentence structure problems. As a result, they have less time to provide feedback on content and analysis. It is the learner's responsibility to understand the requirements for scholarly writing and apply those standards to all assignments and dissertation work.

In order to establish a culture of writing excellence, the College will support the identification and execution of strategies to improve learners' writing skills. During the initial three classes, learners will have at least two major writing assignments per course. If a learner does not meet the minimum expectations of doctoral-level writing for any of these major writing

assignments, the instructor will engage with the enrollment counselor and academic advisor who will then make contact with the learner to discuss the available writing resources. It is the learner's responsibility to seek out those resources to improve their writing skills. It is important to be mindful that engaging these resources does not represent any type of punitive action, nor is it an indication of failure in the class or elimination from the doctoral program. Learners are provided with an opportunity to capitalize on additional resources and to achieve mastery in one of the major competencies in the doctoral program. If a learner chooses not to seek assistance, that is his or her prerogative; however, if the writing competency does not improve in future papers, the same process will occur if faculty identifies the writing as unsatisfactory.

It is also important to recognize that the faculty is responsible for providing timely and critical feedback in course work assignments and papers, in the prospectus, and ultimately in the writing of the dissertation. It is what the learner does with this feedback that can create either a frustrating experience or a realization that the feedback is intended for improvement. In most cases, if not all, there will be edits to many of the documents required for the dissertation, and these edits may delay the completion of the dissertation; the important point to this is that the learner has control over how quickly he or she wants to make the necessary changes.

Conclusion

Recognizing growth through metacognitive reflection will aid doctoral learners in understanding where they have been and where they are in order to move to where they need to be as scholar-practitioners. Additionally, recognizing the emotional challenges that can, and will, occur in the doctoral journey can help learners understand more fully the rigors and expectations of completing course work and dissertation. Life happens, and the ability to set priorities, carve out time for completion of reading and writing, and setting boundaries for what is and is not

acceptable in learners' spheres of influence will assist them in their journey of becoming a doctor.

The best advice anyone can give is to embrace the change that will manifest in various domains of life. As the researcher, the writer, and the doctoral student, learners will transcend previous academic experiences. This is not to say that there are not tendencies towards self-growth and awareness in every person, but these latent talents and gifts will manifest in ways that will create the scholar that learners need to become to graduate.

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Chapter 4: Effective Research

By Dr. Charles Banaszewski

Introduction

"Thinking outside of the box" is a common phrase that has found a place in popular culture as well as in academic circles. It refers to a person thinking creatively about a particular topic or issue; however, this description and action is not completely accurate. A person cannot truly "think outside the box," unless the individual understands all six sides of the box, as well as demonstrates a number of different cognitive strategies to get to that point.

In doctoral studies, learners are expected to think critically about every aspect of their dissertation project. An enormous amount of time and effort will be spent thinking metacognitively about each stage of the process as well as each component. There will be times researchers will have to think creatively about their work and think outside of the box, in order to make discoveries that will contribute new knowledge to a learner's field. These boxes can be found in many different places throughout the journey of doctoral learners. It can come in many sizes. In the beginning, learners might be confused about where to begin because their undergraduate and master's programs have provided assisted and guided learning experiences, as opposed to the independent nature of a doctoral program. Doctoral learners will spend hours, days, and even weeks contemplating their project's hypotheses or research questions, which will lead to a comprehensive review of literature and eventually a proposal demonstrating their knowledge of the topic, as well as outline the intended methodology for data collection and analysis. Learners can view the process as one big box or a bunch of boxes that fit inside of each other until the final project is complete.

In order to identify and open these boxes, doctoral learners must transform themselves into effective researchers who embrace independent learning strategies throughout the research

process. Although, a doctoral learner's committee is there to guide and support a learner, the majority of their research and analysis will take place independently. The early stages of the search and discovery phase will require learners to build a list of reading sources, followed by an extensive and exhaustive literature review of the topic and its related subjects. The independent researcher eventually will transform into an independent writer who will produce a dissertation. "Successful completion of the dissertation 'marks the transition from student to independent scholar'" (Council of Graduate Schools, 1995, p. 9, as cited in Lovitts, 2008).

In order to conduct a research project of this magnitude, doctoral learners must become information literate, which means they must develop a set of skills to locate, identify, evaluate, analyze, and synthesize information. The National Forum on Information Literacy (n.d.) defines information literacy as the "ability to know when there is a need for information, to be able to identify, locate, synthesize, evaluate, and effectively use that information for the issue or problem at hand" (para. 4). Learners will need this combination of critical thinking and informed decision making in order to separate meaningful information from insignificant material. Learners also must possess technology literacy skills to navigate the system of databases operant in today's modern libraries.

The purpose of this chapter is to help learners become information literate. It will provide definitions of key terms, explanations of effective research practices, and guidelines to navigate the GCU online resources. In addition, doctoral learners will recognize the necessary tools needed to think outside of the box, in order to become a successful independent learners and scholars.

Walter Webb

Walter Webb is in his first semester as a doctoral learner at GCU, and he does not have much experience with research. Although he has a master's degree, his previous program was

more project-based and did not require an extensive research component. His first assignment asks him to compare and contrast three empirical articles about transformational and transactional leadership. He is unfamiliar with the terms *empirical*, *transformational*, and *transactional*, but decides to read the research articles anyway, figuring he will pick up their meanings along the way. After reading the first article, he is more confused than when he began, because the terms are not explained specifically, and the research relies heavily on quantitative measures. The second article is more of the same, but he realizes there are a couple of names repeated in both studies that have contributed to the terms *transformational* and *transactional*. The third article is a qualitative research study that relies heavily on vignettes for its communication of data. Walter likes reading about the participants, but he does not really understand the researcher's subjective narrative style of communicating the data.

Walter begins his research by typing the terms into his Google search bar. Each time he finds the same three websites at the top of the page: Wikipedia, About.com, and MindTools.com. He visits each webpage and reads the definitions as well as the history behind the concepts. He recognizes the repeated names from the first two articles and learns that these two people developed the leadership concepts. Walter is feeling good about his research and wants to get a head start on writing his paper.

Walter begins writing, but after about 15 minutes he realizes that he does not know what to write about. He discusses the two leadership styles and the founders, but he cannot think of anything else to write. He returns to the articles, finds some interesting quotes, and inserts them into his paper. Unfortunately, Walter is getting frustrated and is becoming anxious. He decides to do a little more research and finds a great YouTube video that demonstrates the difference between the two leadership styles using an animated dramatization. He adapts the example into his narrative and cites the video as a resource. Walter finishes up with a conclusion that repeats

the definitions of the terms one more time. He submits the work and awaits his instructor's feedback.

A couple of days later, Walter is shocked to see a below average grade with a considerable amount of feedback commenting on the lack of research and analysis. Walter's confidence is shaken, but he contacts his instructor to find out more about the areas upon which he needs to improve. His instructor asks Walter about his research process and his use of these popular websites. After Walter explained his choices, his instructor discusses using quality resources, such as peer reviewed articles, seminal works, and primary source material to develop a doctoral-level narrative and explains the importance of using only scholarly resources. He warns Walter against the sites he used because they lack credibility, accuracy, and relevance. Many students are unable to make this adjustment, but Walter took his instructor's advice and eventually developed into a fine researcher because he learned to manage his time more effectively and learned how to distinguish scholarly sources from non-scholarly material. Walter became information literate.

Sally Smart

Sally Smart is Walter's classmate and she embarks on the same assignment. Her previous degree required her to write a master's thesis, which relied heavily on research to support her ideas. Sally is also unfamiliar with the terms *empirical*, *transformational*, and *transactional*, but she elects to find out what the words mean before she begins reading the three articles. She uses the Internet to get a basic understanding of the terms. She takes some notes on key concepts and contributors, and then scrolls down to the references and further readings sections. Being familiar to the research process, she opens her RefWorks program and creates a reading list for this particular assignment by logging reference information for one book and three articles. Feeling confident in her understanding of the concepts, she reads each article and records

detailed notes that include page numbers and paragraphs. Afterwards, she views the references of each article and enters a couple of entries into her RefWorks program. Her reading list now consists of one book and six peer-reviewed articles.

Because this was Sally's first time using GCU's Library, she watches the videos on how to navigate the search functions of the system and reads the supplemental instructions to make sure she does not miss anything important. Upon completion, she opens her RefWorks program and begins to enter the titles of the articles. She reads the abstracts to each article and decides that two of them appear promising for a complete reading. She downloads the articles to her computer and begins a search for the book she needs. GCU does not own a copy of the text, so she places a request for the book through InterLibrary Loan. Realizing the book may not show up in time to complete the assignment, she focuses her immediate attention on the two articles downloaded to her computer. Again, she takes detailed notes and writes down some more reference material she could examine.

The three assignment articles and two supplementary readings all reference the same two researchers. She thinks it would be a good idea to find out a little more about these two scholars by doing an Internet search. She finds out that one of them had written a seminal work on transformational leadership (the same book she ordered through InterLibrary Loan), and the second author recently built upon the seminal author's work. Having a firm understanding of the research topic and articles, Sally decides it would be good to create an outline for her upcoming paper. It is a comparative analysis that requires her to create headings in APA format. She visits an APA related website to learn about the most current APA requirements concerning a research paper and creates a template on her computer. She begins to write the introduction and makes sure that all the pertinent information is present. She establishes her academic tone on the

assumption that her audience is unfamiliar with these three articles but will have doctoral-level reading expectations.

The book arrives in the mail, but Sally does not have time to read the entire text. She reviews the Table of Contents and identifies one chapter that could contribute to her paper. She skims the chapter and takes her usual notes. Sally finishes the research component of her studies and begins writing. She gathers her notes and writes her paper. The writing process comes easily for her because she has so many ideas about which she could write. She supports her analysis with the outside reading material and she finishes her draft 3 days before the due date. Instead of submitting it right away, she steps away from the document for a day, and then returns to edit and proof her work. She fixes the shortcomings and submits her document. A couple of days later, Sally is pleased to receive an above average grade with complimentary feedback applauding her ability to balance facts with strong analysis. Her confidence is strengthened, and she looks forward to the next assignment.

Sally and Walter's knowledge base began at the same place, but Sally was able to excel because she understood the steps to become information literate.

Throughout the doctoral program, learners will be asked to locate, read, analyze, and write about research on a regular basis. Learners must become information literate in order to open up those "boxes" and conduct successful research. Whether learners are conducting research for a class project or working on their dissertation, the importance of sound research practices will be the foundation to high-level scholarship.

Technology Literacy

Many learners who make the transition from a traditional ground schedule to a fully online program are apprehensive about having to depend solely on an online library for research. Most of their fears are rooted in a lack of technology experience, but after a couple of trial runs

and the completion of the library tutorials, the learners should feel confident in their technical skill set. Boeriswati (2012) believed learners who do not possess **technology literacy** must develop this skill set "as a tool to facilitate achieving the objectives" (p. 651). However, computers and technology have become inseparable with education and higher learning. The changes to learners' preferences and behaviors cannot be ignored by higher education. According to Frand (2000), "Most students entering our colleges and universities are younger than the microcomputer, are more comfortable working on a keyboard than writing in a spiral notebook, and are happier reading from a computer screen than from paper in hand" (p. 15). Comfort with technology helps alleviate some fears, but it does not guarantee information literacy. A study investigating the research behaviors of the "Google generation" revealed that people born after 1993 are adept with computer technology, but demonstrated severe shortcomings in the areas of critical thinking and analysis (Rowlands et al., 2008). A study focusing on Generation Y doctoral students found mixed results. These learners were "sophisticated information seekers" who could adequately evaluate sources, but this group was more resistant to implementing new technology that would contest current research strategies (Carpenter, 2012). It appears that some doctoral learners have an "if it's not broke, don't fix it" approach to education, which has its benefits; however, a research project of this magnitude will require learners to implement technological tools that may make them feel uncomfortable at first. After applying such computer programs, learners will be relieved to see how the programs help them organize and analyze their research. These studies may appear alarming to the state of higher education, but becoming technology literate is a process that takes repetitive practice and a willingness to adapt to change. These adjustments will contribute to the successful completion of a doctoral program.

Information Literacy

Head and Eisenberg (2010) admitted that "Research seems to be far more difficult to conduct in the digital age than it did in previous times." The main area learners struggle with is their ability to assess the information once it has been found. The American Library Association (2000) identified **information literacy** as being able to

- determine the extent of information needed,
- access the needed information effectively and efficiently,
- evaluate information and its sources critically,
- incorporate selected information into one's knowledge base,
- use information effectively to accomplish a specific purpose, and
- understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally (para. 3).

Brandgruwel, Wopereis, and Vermetten (2005) found doctoral learners put more effort into their processing and evaluating phases of their problem-solving exercises than undergraduates; however, effort does not guarantee an accurate assessment of information. Not all resources are created equal, and learners must be judicious in their approach to evaluating research. Becoming information literate requires a learner to identify, understand, and evaluate the strengths and weaknesses of each source before they can use it. Learners should examine five main areas when it comes to evaluating their research project's source materials: authority, currency, objectivity, accuracy, and relevance. To ignore these elements can hurt learners' ability to author an effective narrative and may open them up to criticism from the academic community.

Authority

In this age of digital information and technology, evaluating the credibility of sources has become a challenge, because anyone with a computer and basic computer skills can build a

webpage and publish information on a particular topic. “The Web may not be subject to filtering through professional gatekeepers, and it often lacks traditional authority indicators such as author identity and established reputation” (Metzger, 2005, p. 2). Learners must resist the temptation to access the quick and ubiquitous data littering the Internet. The authority of these sources usually is lacking, providing little more than surface-level facts. According to Metzger (2005), "There are no universal standards for posting information online and digital information may be easily altered, plagiarized, misrepresented, or created anonymously under false pretenses” (p. 2). At the doctoral level, the use of webpages, blogs, videos, and self-published books as reliable and referential sources is not acceptable. A doctoral learner should use only scholarly sources that clearly communicate an author’s expertise on a topic and the publisher’s commitment to scholarship. Here are some basic questions learners should ask themselves before incorporating a source into their body of knowledge.

- Does the article come from a peer-reviewed journal?
- What are the author’s credentials?
- Does the book provide referenced material from credible sources?
- Who is the publisher?
- Does the publisher have a reputation for scholarly publications?

In academia, it essential for doctoral learners to answer these questions or they risk their work being open to censure due to a lack of respectable sources.

Currency

A particular topic might have a long history of published research for which scholars have continually published new findings over the years. The earlier work is important because of its foundational contributions to the field, but its findings may have become dated and/or

obsolete. Other than a seminal work, learners should attempt to employ current research to support their position and/or findings.

For example, a study published in 1972 examined adolescents' recreational reading preferences during a high school study period. A second study published in 2010 examined a very similar topic. Unless the doctoral learner is conducting a comparative study between the two periods, the second study should be used because the contemporary conditions surrounding today's adolescents is much different than it was in 1972. Identifying current research is encouraged when referring to secondary source materials, such as peer-reviewed journals and books. Some fields, such as Fine Arts or Humanities, must use primary sources that could be hundreds of years old, but the secondary sources utilized usually end with the most up-to-date work being discussed. Also, using current research can help establish the doctoral learner's authority on the topic. It is recommended that learners attempt to find research published from within the past five years whenever possible.

Objectivity

Bias is one of the most alarming words in a researcher's vocabulary. Traditionally, positivist research methods have attempted to minimize bias because it suggests a researcher lacking objectivity will produce errors in methodology and analysis. However, there are post-modern theories of research, such as post-positivism, interpretivism, critical theory, and feminism that suggest bias is an unavoidable condition the researcher must accept and admit. Objectivity is important and should remain a priority for researchers conducting a preliminary search or a literature review; however, they must realize their choices and omissions can indicate a level of bias that can be avoided with a well-balanced selection of literature.

The following are a few guidelines doctoral learners should follow when evaluating the objectivity of a source.

1. Evaluate the referenced material for variety and quality. Researchers should use a variety of academic research to support their work. The absence of support or the author using their past work as the dominant source material should raise a red flag. Here are a few sample questions a doctoral learner can ask.
    - What kind of sources does the researcher cite?
    - Does the documented material come from academic sources, such as dissertations and journal articles, or popular sources, such as magazines and websites?
    - Does the researcher provide a complete list of references from various scholars?
    - Does the researcher use more than one or two sources to support the narrative?
    - Does the researcher reference only his or her own work?
    - Is the source current, within the past five years?
    - Is the source from a peer-reviewed scholarly journal?
2. Researchers should be sensitive to their tone and choice of vocabulary.
    - Does the researcher sound objective, or does his or her narrative reveal an emotional investment that would indicate bias?
    - Does the narrative provide a balanced viewpoint, or does the researcher make absolute statements that limit the possibility of further investigation?
3. Controversial content material can open itself up to research bias. Passion is an important element to being a successful researcher, but if passion clouds a researcher's judgment, it can compromise the integrity of a research project.
    - Does the researcher align himself or herself with a political ideology without disclosing his or her subject position?
    - Does the researcher offer an opinion that is outside of the research findings or scope of the study?

- Is the research sponsored by an outside organization (private enterprise or nonprofit)?

Determining the objectivity of a source helps doctoral learners to validate their selection and be able to differentiate the degrees of bias between multiple studies.

Accuracy

Doctoral learners should read and reference peer-reviewed articles because the research has gone through a rigorous review system that has determined the source's reliability. It is important to note, peer-reviewed research does not guarantee 100% accuracy; however, this scholar-based process does provide a much stronger foundation of resources for learners to assess. Peer-reviewed research articles are not absent of limitations, but the information found within is considered the most reliable type of scholarly work. The issue of accuracy pertains mainly to websites, blogs, magazines, and other popular sources that have not been reviewed by scholars. GCU does not accept these types of sources for discussion post responses, assignments, or dissertation work.

College students have been seduced by sites like Wikipedia, Ask.com, and Answers.com because of the rapidity and simplicity of the product. However, these sites, along with blogs and other nonacademic websites should be avoided at all costs. The absence of scholarship, authority, credibility, and reliability attached to each one cannot be ignored. Can a person learn about a topic by visiting one of these websites or find some reference material to read? Yes, of course, but it is not appropriate at the doctoral level to use these resources for an academic research project, especially doctoral-level research. To put it simply, a learner's scholarship and credibility would be called into question. To be fair and equitable, the same would go for any instructor who accepts such resources as academic in nature. It is recommended that learners become proficient using the databases available in the GCU Library.

Relevance

Doctoral learners looking to develop quality research will generate a long list of sources that could potentially find their way into their reference list. It is unlikely that all of the sources found in a search will yield useful information. Also, learners may find multiple studies discussing approximately the same thing. Instead of using all of the studies, they should determine which source is better or more relevant to the project at hand. Sometimes this can be an arduous task because learners must make difficult decisions, but it is a worthwhile endeavor that will lead to a stronger document in the end.

Like Sally Smart, learners will do keyword searches and try to find as much related material as possible, read the abstracts for each item, and make a list of possible reading materials. Depending on the size of the study and the number of resources, learners most likely will skim the articles first to determine which will be most relevant to the project as well as add them to the reading list. It is a good practice to create an annotated bibliography because it will help learners keep the reading materials organized and accessible. As new ideas begin to develop and evolve, learners may need to revisit the annotated bibliography to determine which articles to read or reread more closely. As the writing process commences, learners will have to make those difficult choices and decide which sources are most relevant and will make a contribution to the narrative.

Differentiating Between Sources of Academic Literature

Primary Sources

The interpretation of the term *primary source* is dependent upon the field of study. However, the most common definition pertains to the originality of the material. It is an original or seminal source, artifact, or evidence that has not been changed in any shape or form. These sources offer a first-hand account of an experiment, event, and/or experience related to a

particular moment in time. Original documents include speeches, diaries, manuscripts, interviews, letters, official records, taped recordings, original news footage, and researcher's video documentation. Autobiographies and memoirs are also considered primary resources although the content material is documented after the original events took place. Empirical research is one of the main sources doctoral learners and scholars will use to support their work. Its data is gathered through observation, experimentation, and testing. It is vital to a doctoral learner's development to frequently read and use this type of primary source. Empirical research is normally published in journal articles and/or periodicals, but other types of research can be found, such as reviews and reports. Journal articles can occupy both primary and secondary source identification depending on the discipline and source of knowledge. Primary sources are cited and referenced by secondary sources for a variety of reasons and motivations, but mainly to support, criticize, comment, investigate, build, and/or expand on a subject.

Secondary Sources

A secondary source refers to written or recorded material that interprets, analyzes, or evaluates primary sources in a way that suggests the written narrative is one or more steps removed from the original material. Some examples include journal articles, research studies, essays, reviews, presentations, magazine articles, books, textbooks, and book reviews.

Ideally, doctoral learners will have access to primary resources, but depending on the study's focus and methodology, secondary sources can play a dominant role in learners' understanding of their field, especially when it comes to constructing a comprehensive literature review section for a prospectus, and, eventually, a dissertation.

Tertiary Sources

These sources generally are summaries or condensed versions of primary and secondary sources. Often, these sources are related to reference materials, such as dictionaries, encyclopedias, reference guides, and indexes.

Table 4.1

Examples of Primary, Secondary, and Tertiary Sources

Primary (Original source material)	Secondary (Source analyzes, evaluates, and interprets primary source material)	Tertiary (Summaries or condensed versions of primary and secondary source material)
Archival material	Biographies	Abstracts
Artifacts	Books	Bibliographies
Autobiographies (books)	Book reviews	Chronologies
Correspondence	Conference proceedings	Dictionaries
Diaries	Dissertations	Directories
Empirical research articles	Editorials	Encyclopedias
Government documents	Essays	Guidebooks
Interviews	Literary criticism	Manuals
Letters	Magazine articles	Indexes
Magazines	Reports	
Manuscripts	Research studies	
Memoirs (books)	Reviews	
Newspapers	Textbooks	
Photographs	Treatises	
Research Studies	Scholarly journal articles	

Scholarly journal articles

Works of art (music, painting,

poetry, etc.)

Seminal Works

Seminal works are papers recognized by the research community as important landmarks and major breakthroughs in scholarship. These papers promote a new theory that becomes an acceptable and valid perspective that all future scholars must read and incorporate into their understanding of the field in order to conduct informed research projects. Doctoral learners will include at least one seminal work in their literature reviews to demonstrate their understanding of the field or to use as a theoretical foundation for their own research. This is required to establish the conceptual framework of a dissertation. For example, a doctoral study investigating a hypothesis related to transformational leadership must identify the origin of the term, established by James Burns (1978), but then elect to use a more developed theory from Bernard Bass (1985) to establish his or her research study's theoretical foundation.

Although, an author of a seminal work will usually produce several publications around a particular topic, the original seminal paper is separate from the author's other publications because it originally established the idea that will inform all future research activity.

> The model begins with a new theory published in a research paper. If the scholarly community comes to accept the validity of the new theory, this paper is considered a seminal paper. This seminal paper influences the scholarly community's thinking and ultimately, the body of knowledge. The seminal paper stimulates the writing of other scholarly papers. Last, the novel thinking, expressed in the seminal paper and subsequent scholarly papers, is organized into new patterns of thinking which can be recorded in subject heading schemes and then applied to the subject indexing of newly published scholarly papers (Lussky, 2004, p. 4-5).

Doctoral learners will discover many authors' names repeated over and over in scholars' bibliographies, but it is important to note that there is a difference between a seminal author and researchers who publish frequently. These researchers are recognized as experts, but not the author of a seminal work. Doctoral learners must learn to differentiate between the two. For example, Bass's (1985) seminal text, *Leadership and Performance Beyond Expectations* is considered a seminal work on transformational leadership. Doctoral learners often cite Peter Northouse because of his popularity and visibility; however, his prolific contributions to the field of leadership are not seminal in nature. Determining which works are seminal is not as difficult as it sounds because, often, these same experts will cite the seminal paper and refer to it is as influential, important, classic, or seminal in their own research articles.

Empirical Research Articles

Empirical research is the observable study of a phenomena and/or event. Researchers gain knowledge by means of direct and indirect observations based upon the five senses, as opposed to deriving conclusions from theory, belief, and/or ideology. Empirical research is the foundation to experiments and the scientific method, although empirical data can be attained and measured through quantitative and qualitative methods. A researcher's relationship with the data

collection and analysis of the data is primary. The work does not come from the collective assessment of others' research, but rather the direct observation and analysis of a researcher's pursuit to answer a hypothesis or research question.

Here is an example of an empirical research study: A researcher wants to test her hypothesis concerning whether or not children are prejudiced against fat-free labels on their choices of ice cream. The researcher sends a survey to a sample population consisting of fourth and sixth graders at three elementary schools in a Midwestern state. The surveys are filled out and sent back. The data is collected and analyzed by the researcher. The researcher publishes her findings in a peer reviewed journal. As you can see, the relationship between the data and the researcher is primary.

Here is an example of nonempirical research. A researcher reads 25 articles on transformational leadership techniques used in public high schools. From her reading, the researcher comes to the conclusion, through statistical methods of contrasting and combining results, that school districts were resistant to the introduction of transformational leadership techniques with students, but were receptive to the technique with staff members. The researcher writes a paper discussing these findings and publishes it in a peer-reviewed journal; however, there is no hypothesis and sample population present in the research.

Empirical research articles, also known as primary research articles, report the results of a researcher's findings using a set of commonly used sections. Most empirical research articles consist of these sections:

- Abstract
- Introduction
- Hypothesis or Research Question
- Literature Review

- Methodology (sample population, approach, and measurement tools)
- Discussion
- Conclusion
- References

Researchers may vary the language they use to identify these sections or elect to combine two sections together under a single heading. For example, the Introduction and Literature Review sections are often merged together. Regardless of the headings used, these sections are always present in an empirical article in some form or fashion.

Periodicals

A periodical is a written work that is published on a regular basis. The quality of periodicals will vary depending on the materials, type, and subject matter. The most common types of periodicals are newspapers, magazines, newsletters, yearbooks, trade journals, and scholarly/academic journals. Doctoral learners must recognize the difference between scholarly/academic, professional trade, and popular publications.

Newspapers and Magazines

These popular periodicals' intended audiences is the general public and they do not rely on rigorous academic research to support their news stories, editorials, and interviews. The authors are professional writers who may or may not be experts on the subject material, and the publications are supported by advertisements. The vocabulary is usually very accessible for large consumption and comprehension. While there are times doctoral learners may use these resources to help describe a social, political, or cultural condition of a particular time period, mainly, they should be supplemental in nature and should not be used as a foundation piece to research because they usually lack quality documentation and consist of minimal analysis.

Professional Magazine and Journals

Many scholars become members of professional organizations to continue their professional development in their respected fields. Most professional organizations publish a magazine or newsletter to inform members of trends in scholarship, current events, resources, and professional development opportunities. These publications are subject-specific, but the tone of writing will vary depending on the editor's mission. There are many opportunities for scholars and practitioners to network with others and gain recognition through published contributions. Doctoral learners will find value in these readings on a professional level but should not rely heavily on such publications for their main source of scholarship.

Peer-Reviewed Articles

Peer-reviewed articles probably will be the most popular reading material for doctoral learners throughout their program of study. These articles are found within scholarly periodicals, called journals, and are authored by scholars, researchers, and specialists. The content is based upon original research written with an academic voice that demonstrates a specialized understanding of the field's vocabulary and past scholarship. Generally, articles are arranged in a similar format that will provide readers with recognizable sections: abstract, introduction, literature review, research questions, methods section, limitations, results, conclusion, and references.

Before publication, these articles are reviewed by a number of scholars to help ensure the quality of research. The reviewers do not know the names of the authors in order to reduce the possibility of influence and bias (McKinley, 2008). Although most research has limitations of some form, these experts are checking for validity or research methodology, reasonable

conclusions, and sound arguments. Many articles are sent back to writers for revisions, or if an article is lacking in major areas, such as validity or rigor, it will be rejected. If the research will meet the expectations of a scholarly article, it likely will be published in a journal.

Abstracts

All published research articles will have an abstract at the beginning of the document to communicate to readers a summary of the research paper or project. Generally, it is a synopsis ranging between 150-250 words that briefly disclose the researcher's rationale, methodology, results, and implications for future studies. An effective abstract will be clear and concise with an accurate report of the research without evaluative commentary (American Psychological Association [APA], 2010, p. 26). It is usually the first thing a researcher will find and read in the search process. Abstracts are an important tool used by doctoral learners and seasoned researchers to quickly ascertain an article's relevance. "Readers frequently decide on the basis of the abstract whether to read the entire article" (APA, 2010, p. 26). It will save learners valuable time and help them better understand the scope of their subject area. Many databases only index abstracts, instead of full-text documents, which means the researchers will have to find or request the full-text version from their institution's library. It is recommended that learners cite from the full-text document, as opposed to citing from an abstract because it implies the researcher has not read the actual article. All doctoral learners will be required to author an abstract for their dissertation.

Books

Doctoral learners should have a stack of books on their desk at all times with a notebook containing detailed notes or a set of post-it notes stuck to pages with ideas written on them,

reminding them where to find useful content. They should also have a list of eBooks on their computers with a number of bookmarks set to important pages for future reference. Some books are written by authors who have written a seminal work, and this format is a way for them to expand upon their research. Other books are edited collections from various scholars contributing theoretical and practical applications on a particular subject. Both are valuable and can provide great insight for doctoral learners to build their body of knowledge.

It is important for doctoral learners to read as much as possible on their subject, and books provide a more in-depth perspective that will give them more access to necessary background information and contextual understanding. However, depending on the field of study, books should be used sparingly in the literature review of the dissertation as citing assumes the learner has read the entire book. Unfortunately, it may be impossible to read everything on the physical and virtual bookshelves; however, learners can use the Table of Contents, Index, and Bibliography as tools. This process is similar to reading the abstracts or a peer-reviewed article and dissertation in order to discover quickly whether sections of the text will be applicable to the research project at hand. In APA, these sections should be cited appropriately by identifying the individual chapter or section actually used.

Textbooks

At the doctoral level, textbooks are a rarity compared with undergraduate or master's programs because instructors require learners to read directly from scholars' published works, as opposed to spending time reading basic information and summations (exceptions may occur in the field of health care). Textbooks do contain extensive bibliographic information that can be

applied to exploratory stages of research; however, doctoral learners should not cite textbook material in their research; they should visit, read, and cite from the original referenced texts.

Dissertations

The end product of a doctoral program is the dissertation. It is a long narrative that demonstrates a doctoral learner's expertise on a particular aspect of a topic through the documentation of a scholarly research project resulting in new contributions to a field of study. Dissertations are an ideal source for doctoral learners because many dissertations may contain relatively recent research that has not been published as a book or journal article. However, dissertations should be used sparingly because they are not subject to the same peer-reviewed process as research studies published in journals. At GCU, it is recommended that no more than five dissertations can be cited to support a learner's doctoral research. The real value comes from learners having the opportunity to read another scholar's work and develop metacognitive connections that can help demonstrate what is expected when it comes time to write their own project. Most dissertations follow a particular format that can serve as a blueprint or map when learners are looking for information quickly.

Reference Lists

A reference list identifies the work cited in an author's text. Besides its pragmatic application, learners can follow the cited material to its original source. It is recommended that learners use an original source whenever possible because it ensures the context and intention of the cited work is accurate. It also demonstrates an individual's ability to conduct an effective research project.

Bibliographies

A bibliography is a list of sources that an individual has consulted throughout the research project, but not necessarily cited in his or her narrative work. A major work, such as a dissertation, will include a reference page and bibliography. Learners should use a bibliography whenever it is available to construct a comprehensive list of resources.

Annotated Bibliographies

An annotated bibliography expands upon a traditional bibliography by including a brief description for each reference. Learners evaluate each source and summarize the main points found within the reading, as well as determine its relevance and quality. This is an effective practice for learners conducting an extensive literature review over a substantial amount of time. Often, learners may forget the main points of an article they read a year earlier, but an annotated bibliography helps them figure out whether or not the material is relevant. Also, writing annotations forces learners to develop their critical acumen and become an authority on the subject material at the same time.

Searching for Materials

The most challenging phase of any project is getting started, particularly in knowing where to begin. It is similar to a person walking in the mall looking for a particular store. The person is familiar with his or her surroundings, but does not know in which direction to go. The person is fearful of choosing the wrong course because it would mean having to back track and start over. The person decides to use the resources available, walks over to the map, and sees the "You Are Here" icon.

Doctoral learners experience something very similar when embarking on a new research project. Where should they begin? Which way should they go? No one likes to waste time or do extra work, but learners should embrace this process and not view the failed attempts as dead ends, but, rather, as if they were explorers navigating the borders of the terrain. Learning the geography of the field and becoming an expert of the subject's landscape will help learners perform a comprehensive study.

However, not all learners will look at the map and view the same starting point. Unlike the store locator, there can be multiple "You Are Here" icons when it comes to a learner's experience and process. Some will begin with a general Internet search to get a basic understanding of the topic's terminology or read a book they purchased online. Others may prefer to use Google Scholar to generate a list of potential readings. Still others may go to their online library and utilize the available databases (ProQuest, ERIC, EBSCOhost, JSTOR, etc.) to commence their investigations. The first two choices are acceptable starting points, but learners should not end their research where they began. All learners should and must utilize the databases housed in the online library.

Search Engines

In the Age of Information, the Internet and its search engines have become popular tools for people to learn about the world. It is quick and it easy, but it is not authoritative, and it is not a compendium of everything available. Search engines do not utilize online databases, where much of the beneficial information can be found. Also, there is an enormous amount of information that is not published on the Internet. Unfortunately, inexperienced researchers believe if it does not show up on the Internet, then it must not exist, which is not accurate. Search engines can help users learn basic concepts and terminology that can contribute to great conversations or the completion of rudimentary assignments, but they do not provide wide access

to top-quality research that can lead to the creation of respected knowledge from competent doctoral-level researchers.

Google Scholar

Google Scholar has emerged as a popular starting point for web-savvy learners who are accustomed to the frequent use of search engines (Sadeh, 2004). It is a free, online search engine that is similar in appearance to Google's iconic home page, but its search function allows users to search for print and online scholarly information, as opposed to websites and blogs. Google Scholar is not a database, but its ability to extend its search to peer-reviewed journals, scholarly books, reports, and abstracts, as well as link to library catalogs (including Grand Canyon University), makes it is a valuable research tool. A learner can benefit from compiling a large list of sources to investigate; however, the accessibility for many of these sources may be limited to an abstract and require a fee to read the complete work. Also, identifying and sorting through the type of information pulled up can be difficult because the criteria options are limited. Google Scholar is an adequate starting point for a broad view of a topic, but, eventually, learners should visit databases that will offer a more refined search that caters to a particular field of study.

Databases

One of the benefits of being a doctoral learner at GCU is the access to the institution's vast online library resources. Effective learners, students, and researchers will conduct most of their inquires using a number of various databases found within the GCU Library, which has "92 databases with access to over 70,000 full text journals and the articles" (Center for Innovation in Research and Teaching, n.d.a., para. 1). Doctoral learners will not have to use all of these databases when conducting research, but they should become familiar with the search functions for those most closely related to their field of study, as well as the most popular databases scholars use to conduct initial searches (ProQuest, ERIC, PsycINFO, CINAHL Complete, etc.).

Doctoral learners will discover very quickly that these databases are an essential tool to finding peer-reviewed articles on their chosen topic, which, eventually, will help learners to narrow their focus and find more specific research on their subject. Each field of study has databases that cater to their subject material and/or profession. Below are three kinds of databases available to researchers. There are many more and doctoral learners need to become familiar with the resources available to them.

EBSCOhost

EBSCOhost provides users with access to a number of databases that offer full-text and reference materials. Learners can access multiple databases simultaneously and conduct a wide-range search for subject-related resources. The search functions use Boolean logic and allow users to limit their search to full-text and peer-reviewed articles only. Normally, there is a fee for users outside of the university system, but doctoral learners are able to use EBSCOhost through their institution's library system at no charge. This online reference system features familiar search capabilities similar to most online library search functions.

ProQuest

ProQuest has many different databases, though it is one of the most popular and prolific databases used by learners from various disciplines because it contains scholastic and popular resources from core academic subject areas. It includes 28 databases in total. Its broad catalog enables learners to locate peer-reviewed articles from a number of different periodicals, as well as access dissertations and theses. The search function allows users to explore the database using a basic or advanced search that will generate a list of titles and identify full-text availability. The result page will provide users with a list of 20 titles per page with the newest publication at the top. Each title comes with reference information, but a user must convert it to the appropriate style format (APA, MLA, and Chicago) (ProQuest, n.d.). Another convenient feature ProQuest

offers is the ability to print, e-mail, or save PDF files for later use. ProQuest is a necessary tool doctoral learners should use to become effective researchers.

The Education Resource Information Center (ERIC)

ERIC is a content specific database dedicated to education-based research and literature published since 1966. Researchers and educators interested in accessing academic journals and related nonjournal publications (conference papers, reports, newsletters, etc.) in the field of education will find an easy to use database with nearly 900 available journal titles. Unlike other databases, ERIC provides a list of search words or education-related descriptors to help users define their search. Also, ERIC uses a simple identification system that indexes the types of literature into two categories. *EJ* numbers stand for academic journal articles, and *ED* numbers refer to nonjournal resource material. Doctoral learners in the field of education must become familiar with this database because it is the primary source of information for educators before and after graduation.

PsycINFO

PsycINFO is a bibliographic database produced by the American Psychological Association (APA) to provide a comprehensive list of abstracts for psychology related materials (articles, book chapters, dissertations, etc.). PsycINFO provides a list of vocabulary words that should be used along with Boolean operators (AND, OR, and NOT) to find information related to the search. Also, learners can make their searches more selective by searching by way of methodology. For example, learners can limit their searches to empirical studies, clinical trials, or treatment outcomes to name a few possible settings. It is important to note, PsycINFO does not provide full-text reading materials; it only provides abstracts for researchers to read and discern which materials should be accessed using PsycARTICLES, PsycBOOKS, PsycEXTRA, PsycCRITIQUES, and PsycSCAN. In the GCU Library, a learner can access the full-text content

of PsycARTICLE and PsycBOOKS via PsycINFO, but GCU does not subscribe to PyscEXTRA, PsycCRITIQUES, and PsycSCAN. All doctoral learners in the fields of psychology and psychiatry should become experts using this database. It is the most respected and salient resource available to scholars and professionals working in these fields of study.

GCU Customized Access to Databases

LopeSearch

LopeSearch enables doctoral learners to search multiple databases across several subject areas in a single search. This platform can lead to hundreds of results across a number of disciplines, giving learners a starting point. This database is an effective search tool for an initial or general search, but if a learner's field of study uses a "controlled vocabulary, a more subject specific database will be a better option" (Center for Innovation in Research and Teaching, n.d.a.). LopeSearch is located on the GCU Library's Find Journal Articles webpage.

LopeCat

LopeCat provides doctoral learners with access to more than 150,000 electronic books and more than 35,000 print books. Learners are able to access the text via their computers from the comfort of their home. The print versions can be picked up on campus or mailed to the learner's home. LopeCat is located on the GCU Library's Find Books & More webpage.

How to Search

There are a few ways to conduct research effectively depending on the learner's available resources and field of study. Today, Internet users type a question into a search engine and an "answer" appears instantaneously on the computer screen. Unfortunately, some of these learners assume finding the answer is the goal and the completion of the research process. However, this is simply the beginning of long process that will require mental dexterity and endurance to follow a search to its appropriate destination or ending point. Most learners conducting a quality

search will realize rather quickly that there is no finish line, but, rather, a series of paths that will lead to more questions and ideas. Eventually, researchers will have to stop, postpone, or at least slow down the search in order to write/share their findings with others.

Learners can begin an inquiry using the Internet, but it should quickly move to the learners' library, where their access to databases will dramatically improve the quality of their search. Unless learners already know the author's name or title, the majority of searches will use either keywords or subject headings to locate materials on the subject.

Keyword Search

Keyword searches are the most popular and easiest method to implement, but it does require some practice using Boolean operators. Boolean operators connect key concepts together using three simple words: AND, OR, and NOT. Each word has the capacity to associate, broaden, and/or limit a search depending on its application. For example, a learner conducting a search about women in leadership positions in Christian nonprofit organizations. The learner may use AND, OR, NOT, or a combination of these operators to connect these ideas in their search.

Using AND

Women **AND** Christian **AND** Leadership

Phrases:

Women leadership **AND** Christian leaders **AND** nonprofit organization

A researcher can combine concepts by thinking of related words or synonyms and connecting them with the operator **OR**.

Using OR

Leadership **OR** guidance **OR** supervision

Phrases:

Christian leadership **OR** spiritual guidance **OR** religious supervision

Using NOT

Christian leadership **OR** nonprofit leadership **NOT** men

Using AND and OR

Christian leadership **AND** women **OR** female

Using OR and NOT

Women leaders **OR** female leadership **NOT** men

Truncation

The truncation symbol (*) is another tool available when doing a keyword search, which allows learners to broaden a search without having to insert every variation of the word.

Using Truncation (*)

Wom*n **AND** Christ***** **AND** Leader*****

The search will provide results for:

Wom*****n= Woman, Women

Christ*****= Christ, Christian, Christianity

Leader*****= Leader, Leaders, Leadership

The combination of Boolean operators and the truncation symbol can open the search possibilities to a number of locations that learners can use to deepen their understanding of the topic, but also understand the subject's borders.

The research process should generate several positive research outcomes:

1. Educate the researcher on the topic.
2. Provide learners with useful data that can contribute or support their research.
3. Reveal the seminal works written on the topic.

4. Identify the significant researchers contributing to the topic's metanarrative.
5. Lead learners to think metacognitively about the topic.
6. Inspire learners to write about their topic.
7. Give learners ideas for future research projects.

The ultimate goal for the learner is to generate a list of potential reading materials that will contribute to a quality research paper and/or publication.

Subject Heading Search

A subject heading search requires learners to use words from a predetermined vocabulary list. These terms come from broad categories that enable the user to locate material based on the subject area. For example, a learner who wants to find peer-reviewed articles on Therapeutic Theatre styles could type the subject terms "theatre AND therapy" into the search bar to produce a list of potential readings. As the learner inserts the word "theatre," a drop-down menu will appear with additional subject options, such as "theatre of the absurd," "theatre education," and "theatre of the oppressed." The same happens when the researcher types the word "therapy." Some of the additional subject headings offered are "therapy techniques," "therapy outcomes," and "therapy for depression." A learner with knowledge of the field will use "theatre of the oppressed" and "therapy techniques" to conduct his or her subject heading search. This approach offers less flexibility within the search itself, but a strategic implementation of subject headings can produce an effective list of useable materials focused on a particular subject, instead of crossing over into multiple fields of study.

Publication Date Search

A publication date search enables a researcher to locate materials from a specific period of time. A popular practice is to search for current articles that have published within the past five years on a particular subject and not waste time going through dated materials. However,

some learners may want to examine a particular time period and compare their findings with recent research publications. The publication date search is a way to narrow options and help a researcher save time.

Table 4.2

Search Options

Keywords	**Subject Headings**	**Publication Date**
Word flexibility	Predetermined vocabulary	No words
User's intuition and knowledge impacts search	User's reliance on broad topics influences search	User's focus on a time period directs search
Searches all fields of study	Search is limited to subject words	Search is limited to specific dates
Irrelevant results are produced from comprehensive search	Relevant results are based on subject	Relevant results are based on dates, but can produce a list of irrelevant results

The search options above demonstrate ways in which learners can generate an inventory of potential resources. It is a feeling out period that helps learners select a particular direction. Once the decision is made, then learners can focus their search on specific areas that are more familiar to them.

Other Search Options

Learners can search for specific items instead of searching broad subject headings or keywords. By the time doctoral learners reach the literature review portion of their study, they should have an adequate understanding of their field's academic landscape. Authors' names and particular journal publications become part of their vernacular. Learners will go directly to known periodicals or particular document types to find specific items.

Learners can search by document type, such as research articles, book reviews, case studies, conference papers, and more. Also, specific periodicals can be found using ProQuest or EBSCOhost search options as well as source types, such as newspapers, books, dissertations, academic journals, professional magazines, reports, and more. When possible, learners should attempt to find the most recent research on their chosen topic. As mentioned earlier, PsycINFO allows learners to find items by way of methodology and CINAHL headings can be used to search for specific medical terms.

Outside the Library

The most popular path doctoral learners will use to conduct research is their institution's library. It is important to note that not everything will be found in the library, and doctoral learners are expected to exhaust all possibilities to view or access important data that contribute to their research. Many students must use InterLibrary Loan to get certain materials; whereas other researchers will have to travel to a library's special collections because the materials are unavailable through InterLibrary Loan and to the general public. Other learners may have to travel abroad to a museum to view original manuscripts that may require an expert to transcribe, interpret, or explain aspects of the artifact. This can become expensive, and it is the doctoral learners' responsibility to finance their own research, unless grants, scholarships, or stipends can be secured. Learners will have to organize their time and finances effectively to complete a dissertation successfully.

InterLibrary Loan

Like most universities, GCU's library is unable to house every periodical and book ever written. However, InterLibrary Loan (ILL) is a free service that can help researchers request items that are unavailable or found outside of the GCU Library collection. The GCU Library staff will e-mail a full-text article to learners within 3-12 business days of their request. The

same process applies to book requests, but the delivery time can take between one to three weeks. Books are mailed to the learner's residence or can be picked up at the campus library.

Online Library Resources

A dissertation is an enormous undertaking that requires doctoral learners to gather, organize, and analyze large amounts of information. According to Winston and Fields (2003), "Although, preparing doctoral students for completing their dissertations is challenging in an on-campus program, it is even more difficult in an Internet-based distance education curriculum" (p. 161). At some point the load of resources will be too difficult to manage and learners will need to develop a system of organization that will help with the retrieval of important data. A learner can print out all of the documents, but that approach could become very costly, as well as cumbersome as the stacks of paper begin to surpass the learner's height. Technology is a fancy word for organization. Effective doctoral learners can use technology to their advantage by organizing and managing their material in a digital format. Using technology will reduce costs, space issues, and stress. There are a couple of programs available through the GCU Library that assist doctoral learners in this regard.

RefWorks

RefWorks is an online resource that allows doctoral learners to create an account to track citations collected from databases during the research process. It is an effective organization tool that stores the reference material in one manageable file or several working files. There are several other benefits to using RefWorks, such as its ability to create bibliographies and works cited pages as well as its option to display citations in various formats, such as APA. "It includes a plug in called Write-n-Cite that can be used with Microsoft Word to easily insert citations and automatically generate a bibliography for content cited in a paper" (Center for Innovation in Research and Teaching, n.d.b.). Reference materials stored in other bibliographic management

software programs, such as EndNote and Zotero can be imported. Also, users can continue to use RefWorks even after they have graduated from GCU or are no longer affiliated with the institution. Learners can create an account on the GCU Library website. The GCU Library offers a webinar on how to use this resource.

Write-n-Cite

Write-n-Cite is an excellent formatting tool doctoral learners can use when they are ready to insert citations into their narrative and compile their references and/or bibliography. Write-n-Cite is located within the RefWorks Tools menu, and the user must sync their RefWorks database to the Write-n-Cite program. One of the important features offered is the ability to use this program in Word without an active Internet connection. For additional information about the tool, please visit the help files found in RefWorks, GCU Library webinars, or contact the library directly for additional help.

Research Tools

It is probably safe to assume that most doctoral learners were good note-takers during their undergraduate and master's programs. Their ability to identify the important information to study and recall it for a test or paper has led to academic success. At the doctoral level, it is important for learners to continue taking detailed notes, but rather than simply recalling the information, learners must be able to analyze, synthesize, and create new knowledge from their research. A good memory will only go so far. It can be very difficult to keep track of the most important points from 20 different peer-reviewed articles on a particular subject. Traditional note-taking may not be the most effective approach when learners must analyze different aspects

of research. The employment of checklists, plot types, and matrices help researchers organize and analyze data.

Checklists

At some point in life, everyone has used a checklist of some kind, such as a grocery list, to-do list, or procedure list. Checklists help users make sure items are present or tasks are completed. Learners can use checklists to verify information and reduce the chance for error. This text provides learners with an Empirical Article Checklist. It can be used to help learners identify whether or not the necessary components are present for an empirical research article. In the beginning, it will be a valuable resource for new doctoral leaners, but, over time and repetition of use, doctoral learners will be able to identify empirical research articles without the aid of a checklist. It will become second nature.

Plot Types

Visualizing and communicating data in a visual format can help researchers analyze and explain complex ideas and/or relationships. There are multiple plot types, such as Venn diagrams, line charts, and bar graphs, at learners' disposal.

Comparison Matrix

A comparison matrix can help learners keep large amounts of information focused and organized. It also provides a place to view selected notes side-by-side for comparison and analysis. By itself, it is simply an empty table, but once learners assign categories to compare, then it becomes an effective research tool. The columns represent the selected articles, and the rows contain the different sections the learner wants to compare. More rows and columns can be

added as the research expands the library search. The comparison matrix allows learners to recognize similarities and differences between the articles. Once learners have identified the sections and input their findings in each box, they are able to examine and analyze the information. Ultimately, learners will synthesize the data in the rows and columns into a written document that demonstrates their analytic abilities and understanding of the subject material. A comparison matrix is only as good as the learner's ability to adequately identify each section and produce comprehensive notes that communicate the necessary information that can be synthesized later into sound analysis.

Rubrics

At the doctoral level, all learners should make the transition from a student completing assignments to a researcher conducting research. Early in the program, learners will take courses containing assignments that ensure they are prepared for the academic rigors of independent study. Usually, these assignments are graded according to a rubric that communicates the scoring for different academic performance levels. The rubrics will address content, organization, research analysis, writing style, and understanding of APA format. Rubrics identify the areas in which learners are proficient as well as areas needing attention and improvement. Grades are important early on in the program as a marker of objective measurement, but by the time doctoral learners reach the Academic Quality Review (AQR) phase and the prospectus phase they should be making aforementioned transition from student to researcher. The dissertation is graded according to a type of a rubric based on a scale of 1 to 3. Revisions will be required if any part of the rubric score receives 2 or less. Academic performance is still measured and graded, but the evaluation has shifted toward an objective assessment of a learner's informed analysis of

subject matter in a clear and convincing manner that creates a significant contribution to the learner's field of study. .

Learners should use the available resources from their course and the DC Network to guide their writing for class assignments and their dissertation. Besides the traditional application of a scoring rubric, learners can create and use rubrics as an evaluation tool for data as well as a way to measure research participants' understanding of a particular subject. Clement, Chauvot, Philipp, and Ambrose (2003) published research discussing their use of rubrics to "code large sets of belief-survey data" (p. 221). However, they caution others to consider, "the resources, time, money, and large number of persons qualified to develop and code rubrics" (p. 226). It is a substantial undertaking that should be discussed with a dissertation committee before doctoral learners elect to implement this type of research practice into their methodology.

Influence of a Christian Worldview

The phrase, "Find Your Purpose," GCU's slogan, can mean different things depending upon a learner's subject position; however, at GCU it begins with a learner's understanding of the Bible and his or her relationship with God. At GCU, a Christian worldview is essential to "Finding Your Purpose," because it informs all aspects of one's life and learning. GCU's worldview is stated clearly in the university's Doctrinal Statement, which is a statement of faith affirming the institution's religious and spiritual belief system.

According to Goheen and Bartholomew (2008), "Worldview is an articulation of the basic beliefs embedded in a shared grand story that are rooted in a faith commitment and that give shape and direction to the whole of our individual and corporate lives" (p. 23). Everyone has a worldview of some kind that helps people make meaning and understanding of the world.

The Christian worldview varies amongst denominations, but the basic belief system rests in the knowledge bestowed from God through the writings found in the Bible. “The integration of faith and learning means relating of one’s biblical worldview to the learning that is taking place in the academic or cultural arenas” (Cosgrove, 2006, p. 54). The main area of difference revolves around an individual’s interpretation of the Bible and its teachings.

There are various levels of social, cultural, intellectual, spiritual, and experiential development that have an impact on a learner’s understanding. According to Cosgrove (2006),

> This worldview does matter when one engages in the learning process. Our beliefs affect: (1) the subject areas we take an interest in studying, (2) the methods we use to study anything, and (3) the interpretations of, or meaning we bring to, the accumulations of facts. In other words, the learning process in school is never an academically unbiased process; one’s learning is always affected by one’s worldview beliefs. The worldview model, therefore, seeks to transform culture and ideas rather than reject, ignore, or just mix with culture and ideas (pp. 57-58).

This paradigm suggests the Christian worldview plays a prominent role in guiding individuals to connect with their academic learning opportunities. Learners have a firm foundation on which to stand, and their faith is not threatened or challenged, but, rather, enriched through the union of faith and academics.

It is important for learners to recognize their subject position, in order to critically evaluate data, as well as communicate their subject position within a research study to minimize bias. Sometimes research can appear disconnected and impersonal, but in reality it is the opposite. Research is a committed act from an individual dedicated to gaining a greater

understanding of an unknown in order to create new knowledge for others. The passion that Christians devote to the Bible is a quality that can transfer to their role as researchers looking for answers to their questions. Grand Canyon University supports academic and spiritual growth with the belief that the combination of the two will make a positive impact on scholarship and the individual.

Conclusion

A doctoral program requires its learners to become technology and information literate early on in the program to maximize the chances for success. In the beginning, learners will struggle with implementing new technology into their traditional note-taking techniques and research methods, but, with repetition, the skill sets will improve over time. Becoming technology literate will have a direct impact on the ability of learners to evaluate information. Learners will have more time to read and analyze a variety of resources, which, ultimately, provides more options from which to choose. Information literacy is the foundation to an effective research practice and the first step in helping doctoral learners make the transition from a student completing homework assignments to a researcher conducting research. All doctoral learners should be able to identify the different kinds of reading materials, as well as incorporate the definitions and terminology into their academic vocabulary.

Remember the box at the beginning of the chapter and the discussion that revealed the process attached to "thinking outside of the box"? In research, this box is not a plain brown piece of cardboard. On the contrary, to a researcher this box is a present wrapped in colorful paper, filled with unknowns that are waiting to be discovered and interpreted. The next chapter will

discuss the nature of inquiry and describe the research methodologies doctoral learners have at their disposal in order to unwrap this present and all of its potential gifts.

Sidebar 1

An empirical checklist is a popular tool doctoral learners can use to help identify empirical research articles. This checklist does not identify each section of an empirical article explicitly, but rather combines common sections under broader headings. For example, the Introduction heading includes the study's rationale, research question(s) or hypothesis(es), and the literature review. Often, research articles will have separate sections for each of these parts, but many also combine these sections under an article's Introduction. It is important to note, the term research question(s) are usually found in qualitative research methods and hypothesis(es) are generally assigned to quantitative research studies. A literature review can serve a number of functions:

- Discusses past research on the topic
- Summarizes and synthesizes research contributing to the field of study
- Identifies particular theories or past research that will be used as model to inform the study at hand
- Analysis of past research
- Provide a linear history important work
- Identify and discuss gaps in the literature.

Ultimately, a literature review demonstrates the author's scholarship on the subject material and gives his or her current research authority and credibility. The methods section is often broken down into subheadings that address sample population(s), design instrumentation, and data analysis procedures. The results section explains the findings from the data. Often, quantitative research will use graphs and charts to illustrate a study's outcomes; however, this strategy is used less with qualitative inquiry. The conclusion section should not be confused with a study's results section. A conclusion contains a summary of the study and addresses whether or not the research question(s) or hypothesis(es) were supported. As a reflective practice, the authors will offer recommendations for future research opportunities. At the end of every study is a reference section. As mentioned earlier in this chapter, it is an effective strategy to identify past contributions that learners can use to expand upon their research.

Section	**Defining Characteristic**	**Contained in Article**	**Not Contained in Article**
Abstract	An abstract of the contents is provided.		
Introduction	The purpose of the study is stated.		
	The scope of the study is stated.		
	A rationale for the study is provided.		
	The research question(s) and hypothesis(es) (if appropriate) are stated.		
	Key concepts and terms are noted.		
Literature Review	A review of the literature is provided.		

Methods	A description of the population and sample is provided.		
	The data collection procedure is presented.		
	Other procedures to be used are described.		
Results	A narrative statement of the findings is given.		
	A description of the data collected is given.		
	Findings are supported by graphs and charts.		
	The analysis of the data is explained.		
Conclusion	A summary of the study is provided.		
	Conclusions related to the research question(s) and hypothesis(es) (if appropriate) are stated.		
	Recommendations for future research are presented.		
References	References cited in the article are presented.		

Sidabar 2

Below is an example of a comparison matrix in which a researcher has selected three empirical articles on leadership. The columns represent the selected articles, and the rows contain the sections the researcher wants to compare: purpose, research questions, literature review, sample populations, limitations, and results.

	Article 1	Article 2	Article 3
Title/Author(s)	Transformational Leadership in the Public Sector: Does Structure Matter? Wright, B. E. & Pandey, S. K.	The Effect of Transactional and Transformational Leadership Styles on the Organizational Commitment and Job Satisfaction of Customer Contact Personnel Emery, C. R. & Barker, K. J.	Achieving High Organization Performance Through **Servant Leadership** Melchar, D. E. & Bosco, S. M.
Persistent GCU library link	http://library.gcu.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=52860455&site=ehost-live&scope=site	http://library.gcu.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=27436222&site=ehost-live&scope=site	http://library.gcu.edu:2048/login?url=http://search.ebscohost.com.library.gcu.edu:2048/login.aspx?direct=true&db=bth&AN=65173893&site=eds-live&scope=site

Purpose of the Study: What is the author's rationale for selecting this topic? Does the author build a strong case?	To test existing paradigms regarding transformational leadership. The authors suggest that public organizations are not as bureaucratic as stereotypically believed and that the performance measures in place support higher levels of transformational leadership in these organizations than might be expected based on their hierarchical structures.	To examine the different effects on the job performance of customer contact personnel in the service industry when led by transformational leaders and transactional leaders. The researchers believe customer satisfaction will increase if a certain type of leadership style is used.	To extend Barbuto and Wheeler's (2006) research by investigating the ability of a servant leader to foster a for-profit corporate culture to attract and develop other servant leaders because the researchers believe the implementation of the practice would be beneficial in other settings.

	The author builds a plausible argument based on the need for followers to be flexible in order for a leader to motivate them beyond satisfactory performance. In addition, the structure and controls in place for public organizations might impede the effectiveness of a transformational leader.		
Hypothesis(es) or Research Question(s): What	The study has five hypotheses. **Hypothesis 1:** "The more hierarchical an	The study has two hypotheses: **Hypothesis 1:** "Customer contact personnel who perceive	The study has two hypotheses: **Hypothesis 1:** "Mid-level managers who report to servant leaders

question(s) does the author(s) present?	organization's authority structure, the lower the reported practice of transformational leadership behaviors" (p. 78). **Hypothesis 2:** The weaker the lateral/upward communication in an organization, the lower the reported practice of transformational leadership behaviors" (p. 78). **Hypothesis 3a,b:** "The greater organizational formalization	that they are managed via a transformational leadership style will have a higher level of organizational commitment than those managed via a transactional leadership style" (p. 81). **Hypothesis 2:** "Customer contact personnel who perceive that they are managed via a transformational leadership style will have a higher level of job satisfaction than those managed via a transactional leadership style" (p. 82).	will exhibit above-average levels of servant-leader characteristics themselves" (p. 79). **Hypothesis 2:** "There will be no differences in observations of servant-leadership characteristics according to worker age, years of experience, or level of education level" (p. 79).

	(measured as [3a] procurement red tape and [3b] human resource red tape), the lower the reported practice of transformational leadership behaviors" (p. 78). **Hypothesis 4:** "The more an organization's structure impedes the establishment of extrinsic reward-performance contingencies (here measured as human resource red tape), the higher the reported practice of		

	transformational leadership behaviors" (p. 79). **Hypothesis 5:** "The use of organizational performance measures will decrease the reported transformational leadership behaviors" (p. 79).		
Literature Review: How is this organized? What are the main themes found in the review? Who	It is organized by explaining definitions and then moving to related theories. The literature review begins with	The review of the literature introduces related theoretical issues, which are divided into two sections. There is a discussion on organizational	Introduces the concept of leadership and its impact on an organization (Mullins, 1996); (Ehigie & Akpan, 2004). Leadership's successful impact and its main characteristics for success.

are the main authors used?	an explanation of transformational leadership and then explains the conditions that need to exist before transformational leadership can be successful. The review moves to organizational structure and the ways in which the structure can support or inhibit transformational styles including formalization of processes and procedures, inadequate performance measurement and	commitment and the positive correlations between organizational commitments and other factors, such as organizational dependability, job satisfaction, motivation for career advancement, customer service, and work ethic. Researchers cite Morrow, Dornstein and Matalon, as well as Meyer and Allen because their research suggests customer satisfaction and organizational commitment are strongly correlated. Researchers cite Morris, Brown and Mitchell, and	(Douglas & Fredendall, 2004; Gupta et al., 2005; Moreno, Morales, & Montes, 2005; Politis, 2003). Emergence of servant-leader culture and its outcomes (Greenleaf, 1977; Linden et al., 2004). Motivational factors compared between transformational and servant leadership styles (Smith et al., 2004). Positive outcomes introduced by Hamilton (2008), but there is no empirical evidence to support claims. List of attributes of servant

	reward processes, and a hierarchical chain of command. They referenced Bass and Riggio in the beginning, followed by multiple citations of work by Shamir combined with different people: Howell, or in some cases House and Arthur.	Koys, because their research discusses employee satisfaction having a positive correlation with customer satisfaction. Transactional and transformational leadership styles are defined. Researchers James Burns and Bernard Bass have written seminal works on the topic.	leadership introduced by Spears (1995), but Nwogu (2004) and Russel and Stone (2002) refine the model. Barbuto and Wheeler (2006) developed instrument to measure servant-leadership characteristics.
Sample Population(s): What group(s) is/are being studied?	Pool: 3,316 senior managers working in U.S. local governments in cities with populations exceeding 50,000.	Subjects: 77 bank managers and 47 grocery store managers. Pool: 308 bank tellers and 184 grocery store clerks.	59 respondents of three mid-level managers from three different high-end automobile dealerships. Requirements: Minimum one year of

	Initial respondents: 1,538 (46.4%). Usable respondents: City managers were excluded from the respondents pool resulting in 1,322 individuals. Average age was 50. Gender: 68.1% male Race: 85.4% white Education: 60% possessed graduate degrees	Respondents: 292 bank tellers and 97 grocery store clerks	employment and at least 24 years old. Average employment with current employer: 5.8 years. Age range: 18-81; mean age of 38 Mode of education: high school graduates

	Income: 64% exceeded $100,000.		
Limitations: What are the limitations of the study? Why can it only encompass so much?	Sample population lacks diversity in race and gender. Many jurisdictions had only three respondents, which might not be representative of the opinions of other direct reports. A reduced number of questions were used to identify transformational leadership to keep the survey short, possibly causing false identification	100% of the respondents were female. The bank teller respondents came from three separate branches, whereas the grocery store clerks came from one. Only 50% of the grocery store clerks responded to the survey compared with the 95% response rate from the bank tellers. The majority of the respondents did not possess a four-year college degree.	Sample population were mostly male. Low number of subjects from each dealership. Selection process was determined by satisfaction rates of customer surveys and sales volume. The study was conducted in one industry and in one specific region.

	of transformational leaders. Transformational leadership might not be the result of less hierarchical organizations, it might cause them. There is not a way to prove which came first. The results might be indicative only of the 205 local governments studied, not other public organizations.	The average wage of respondents was less than $10 an hour. An abbreviated version of the measurement instrument was used to collect data, which potentially could affect results. The majority of the items used to measure transformational leadership were based on charisma, whereas other factors were not addressed with the same intention.	
Results/ Conclusions:	**Hypotheses 1 & 2:** "Hypotheses 1 and 2 were supported; hierarchical	**Hypothesis 1:** "The results from the correlation analysis support (in both service industry settings) the	**Hypothesis 1:** Mid-level managers

What did the author find through the study? Was the original question answered?	organization structure and weak lateral/upward communication were found to be negatively associated with transformational leadership behaviors" (p. 83). **Hypothesis 3a, b:** **"**Hypotheses 3a and 3b were not supported, however, as greater formalization (operationalized as either procurement or human resource red tape) was not found to have a significant effect on the extent to which chief administrative officers were reported to embody transformational leadership behaviors" (p.84). **Hypothesis 4:**	hypothesis that employees managed under a transformational style of leadership will have a higher organizational commitment" (p. 83) **Hypothesis 2:** "The results supported the proposition that employees managed under a transformational style of leadership will have higher levels of job satisfaction. Specifically, the factors of charisma and intellectual stimulation correlated with the job satisfaction of food store employees" (p. 84). The results indicated there were no significant differences in response levels (e.g., charisma, intellectual stimulation, individual consideration, MBE, contingent reward, organization commitment and job satisfaction) between the banking and food store organizations. Further, the results indicated that neither gender was more likely to use a particularly style or substyle of leadership" (p. 85). Both hypotheses were supported in both industries.	exhibited behaviors to employees that resembled the leadership practices of high-level leaders in their organization. According to the study, "Our results support the contention that the modeling of servant leadership by strategic level managers can create an organizational culture in which servant leaders develop among lowerlevel managers. Servant leadership can provide a successful alternative to other leadership styles such as autocratic, performance-maintenance, transactional, or transformational. This is seen in the exemplary performance of the organizations used in this study" (p. 84). **Hypothesis 2:** There were no differences among subjects based on age, education, and term of employment.

	Hypothesis was not supported. "The study could not support the relationship of human resource red tape [when] increased transformational leadership" **Hypothesis 5:** Hypothesis was not supported and direct contradiction of the hypothesis. According to the study**,** "the use of organizational performance measurement was found to increase (not reduce) the degree to which municipal chief administrative officers were reported to exhibit transformational leadership behaviors" (p. 85). The results were mixed.		According to the study, "No significant differences were noted in the perceptions of the leadership style of the managers based on employee age, length of time with the company, or level of education. These results suggest that servant leadership should be effective for most, if not all, employees. The employees of these organizations considered the behaviors that are characteristic of this leadership model to be relevant and desirable. Our results also indicate that senior leaders who exhibit servant-leader behaviors may be able to encourage other organizational leaders to use this style, resulting in consistency of expectations for employees through a consistent organizational culture" (p. 84). Both hypotheses were supported.

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Chapter 5: The Nature of Inquiry

By Dr. Scott Greenberger

Introduction

> "Every existence is an event. This fact is nothing at which to repine and nothing to gloat over. It is something to be noted and used" (Dewey, 1925/1981).

Discovery is an activity that intersects both ordinary and scientific inquiry. Ordinary inquiry is the exploration, discovery, and understanding that occurs in everyday life, but inquiry is so common that it is often overlooked. Reading a newspaper, for example, to learn about a current event is a form of ordinary inquiry. Science, in contrast, utilizes systematic observation and experiment to discover nature. Unfortunately, modern science, with its complexity, specialization, and formality, can often seem unfamiliar, or even inaccessible. To learn science effectively, one need merely start with the familiar—discovery. This is the entry point to appreciating ordinary inquiry and making science more accessible.

Comparing Ordinary and Scientific Inquiry

Asking Questions and Discovery

Why do people ask questions? The answer lies in the desire to know something in more detail, or to reconcile experience with new information. What, then, is it to know? This requires much more explanation. In philosophy and science, the study of knowledge refers to how people go about obtaining facts, and how people justify their belief in such facts. For example, think about the image of an apple on a table (Thayer, 1990). When asked to describe these objects, a person might simply state "there is an apple on a table." There would be no apparent reason to ask questions. This is one difference between ordinary and scientific inquiry. Science would require a more complete explanation.

Words, such as *apple*, are products of language. Through language, meaning is assigned to objects. An apple, for example, can be understood as something that is relatively round, has color, such as red or green, and is a kind of fruit that a person can eat. Stating "there is an apple on a table" is evidence of a larger system of cultural and linguistic knowledge. Inquiry though requires an impetus. As Dewey (1938/1986) and Thayer (1990) suggested, inquiry starts with focused attention. A beam of light entering

the room might focus the observer's attention on the objects. The sound of an apple hitting a wooden floor might do the same. In each of these cases, there would be a reason to ask the question, “What is that?” This experience of coming to know may change or prompt further inquiry if, for example, the beam of light makes the object on the table appear to be a different color, for example, orange. A person might then ask, “Is it an apple or an orange?” In this case, the observer would need to inquire further, maybe by touching or tasting the object (Thayer, 1990). The observer in these cases would have refocused attention, a cursory level of understanding of what was observed, and the need for intervention to clarify such understanding. This is the basic framework of scientific inquiry.

The previous example illustrates in a simple way how people inquire and come to know things in everyday life. There was no apparent harm in wrongfully identifying the apple as an orange, but in social science, what is determined to be knowledge may influence such decisions as social policy, safety of pharmaceuticals, or appropriate therapy provided to a person with a severe psychological disorder. In each of these instances, ordinary inquiry would not be reliable and systematic enough to support such decisions. This is one purpose of scientific inquiry, to provide valid and reliable knowledge for decision making.

Science is an outgrowth of inquiry, but there are many differences between ordinary inquiry and science (Dewey, 1938/1986; Garrison, 1996; Haack, 2010; King, Keohave, & Verba, 1994). In ordinary inquiry, inquiring ends when no additional information is needed. Once obtained, the observer may not be motivated to inquire further. More importantly, in ordinary inquiry, people typically do not have the tools, training, or experience to measure abstract constructs accurately, such as motivation or stress, or the impetus to use an exhaustively detailed description to explain a natural situation. Scientific inquiry, in comparison with other forms of inquiry, has proven indispensable in obtaining reliable information on various levels of analysis.

Levels of Analysis

The three general levels of describing are global, contextual, and situational (Vallerand, 1997). The more information given about a setting the closer a description is to providing contextual features. If

a description provides information about actual events, with all of the vibrancy of human experience, the description would be one of a particular situation. Understanding the context and situation are crucial to inquiry, as they provide the boundaries, meaning, and grounding to what a person observes, and they help in categorizing local evidence. These details take one beyond simple descriptions. In contrast, the global level offers a panoramic view unlike either a context or a situation.

At the global level of analysis, an observer might analyze phenomena using general categories. For example, a researcher analyzing traffic patterns might be interested in the gender of the drivers, age, speed of driving, and total number of drivers on a stretch of highway; but the researcher might also be interested in strictly abstract concepts, such as the stress of drivers (affective state), the type and amount of experience of drivers on the highway (proficiency), or even the reasons individual drivers drive on a given stretch of highway (motivation). At the global level, in comparing the average frequency of these categories, the researcher would have additional details to predict future events or ways to make the driving experience more manageable. As shown in this traffic-pattern example, inquiry involves the description of different types of data.

Types of Data

There are two types of data used in describing: numbers and qualities. Numbers can be used to explain phenomena and can be converted into words to describe qualities. As in a numeric rating system, a number 5 could indicate a person *strongly agrees* with a question. In this case, the number would represent an expressed quality, an agreement. In the traffic-pattern example, numbers were used to describe distance, frequency, and speed. By using numbers, the researcher might want to identify the distance between one location and another, frequency of highways or local roads, total number of drivers on a highway during a trip, the speed while driving, and travel time. In each of these cases, there is a relationship between a quality and a number.

Qualities can be experienced emotionally, expressed in words, and converted to numbers for analysis. Describing felt qualities is expressing in words the subjective experience of a person. For example, a person might express generalized feelings of optimism, in which words like cheerful,

confident, and hopeful are used to describe the emotion. In using words to describe an event, the objects of the event become more than just felt. For example, "it is quite possible to enjoy flowers in their colored form and delicate fragrance without knowing anything about plants theoretically" (Dewey, 1934/1987, p. 10). Upon reflection, these qualities become expressed as objectively related to other objects. Color and fragrance become interwoven with the ideas of air, soil, water, and sunlight that produced them (Dewey, 1934/1987). Discovery of this tension between the immediate apprehension and the interconnected awareness marks out some of the traits of inquiry into qualities (Dewey, 1934/1987).

Scientific Reasoning

"The question whether inductive inferences are justified, or under what conditions, is known as *the problem of induction"* (Popper, 1959; 2005, p. 4).

Now that the underpinnings have been provided, the next task is to explore the reasoning that makes scientific inquiry coherent. To do this requires a better understanding of the observer. What are the cognitive and behavioral traits of a social science researcher? Which necessary components precede the activity of inquiring scientifically? The following will provide some explanation of this process.

Reflecting on Heuristics

Heuristic approaches to thinking involve using rules of thumb to arrive at conclusions. Such rules of thumb are not irrational responses, as they are based upon experience, but rather, they are cognitive shortcuts that reduce the cognitive load necessary to come to conclusions (Chen, Duckworth, & Chaiken, 1999). Unfortunately, conclusions based upon these shortcuts can sometimes be inaccurate. In scientific inquiry, checking and correcting during observation and experiment are necessary to produce credible results. In science, making a correct inference requires carefully using inductive, deductive, and abductive reasoning.

Inductive, Deductive, and Abductive Reasoning

As implied by heuristics, mental acts follow a pattern. As Minnameier (2010) stated, the scaffolding of this pattern can be understood as the binding of ideas through observation to form judgments. Suppose a person lights a candle. After an hour, the same person observes the candle

flickering, and then the flame ceases. One judgment might be that the melting wax extinguished the flame. This is a simple case of binding ideas through observation to form a judgment. This, however, does not preclude other reasons for the flame going out (a gust of wind or a defective wick), but it does offer a glimpse into a normal pattern of reasoning. In this same pattern, researchers use inductive and deductive reasoning to form propositions.

As Dewey (1938/1986) stated, the activities of inductive and deductive reasoning are cyclical; they are two sides of the same process of discovery. **Inductive reasoning** involves putting forth propositions, or claims, based upon exemplars found in experience. This occurred in concluding that the flame ceased due to melting wax. **Deductive reasoning**, in contrast, involves eliminating alternative explanation for the same phenomenon, such as the idea of wind as a factor in the flame ceasing. Deductive reasoning subtracts items no longer relevant because of new information, such as if it were discovered that the windows were closed. Induction then is the binding of ideas through observation to form conclusions, while deduction is the introduction of new evidence through observation to eliminate possible conclusions. This ebb and flow of reasoning, from induction to deduction and back, allows scientists to arrive at warranted assertions, inferences rigorously confirmed and, therefore, grounded through experience, in the back and forth of idea making and deduction (Dewey, 1938/1986). This reasoning does not, however, account for surprising results or provide reasons to pursue alternative explanations for such results.

Creative intuition is an indispensable but often overlooked component of reasoning in science (Policastro, 1995; Popper, 1959/2005). Contrary to putting forth probable inferences (induction) or eliminating unlikely conclusions (deduction), **abductive reasoning** refers to a kind of strategic guessing (McKaughan, 2008). In some cases, this kind of reasoning provides the motivation to pursue an inference that may seem improbable. In the candle example, a defective wick might have been excluded from explanation after close inspection reveals that the wick remains, but this would not absolutely exclude this conclusion as a possible direction for inquiry. In research, one must determine which paths seem worthy for exploration, at least worthy enough to expend considerable time, effort, or monetary resources. As

McKaughan (2008) explained, “abductions yield recommendations about what courses of action to pursue given our values and given the information and resources at our disposal,” referred to as pursuit-worthy endeavors (p. 454).

Developing Hypotheses

Both hypotheses and propositions are predictions, but there is a difference between the two within scientific inquiry. A **proposition** is a conceptual prediction expressed in words, while a **hypothesis** is an expanded proposition that includes the criterion of testability. Proposing an idea on logical grounds does not mean it exists, let alone that it can be tested. If a person proposes that all swans are white, this person would be making a categorical claim (Dewey, 1938/1986; Popper, 1959/2005). The person would not be making a claim about kinds of swans, or a singular swan, only an abstract claim that every creature categorized as a swan is white. Assume a person inspected 100 swans. If all swans were known to be white, the person would ordinarily expect to find that all 100 swans in the sample were white. The evidence in this sample is 100 white swans, but how exhaustive does the evidence have to be? Suppose another sample of 100 swans contained at least one that was black. As Popper (1959/2005) stated, “no matter how many instances of white swans we may have observed, this does not justify the conclusion that all swans are white” (p. 4). This is the purpose of testing a hypothesis, not to prove conclusively that all swans are white, but to provide a falsifiable backdrop to inference. This requires testing the hypothesis through experiment. To restate Popper's point, observing that all swans in the sample are white does not mean that all swans everywhere are white. It simply means that all swans in the sample are white. The phrase *in the sample* is the key to understanding how researchers use hypotheses in scientific inquiry. In social science, a hypothesis refers to a prediction about a sample of people. How then are hypotheses developed in social science?

A good hypothesis starts with a clear research question. The resulting hypothesis of a question that is too broad might be difficult to answer. A hypothesis based on a question that is too narrow might not be relevant enough to pursue for scientific purposes. A **literature review**, which involves analyzing previous empirical studies on the topic in question, is an efficient way of determining the right questions

to ask. The literature review will also provide exposure to types of hypotheses previously put forth on the topic. Once questions are determined, then testable predictions can be formulated. However, not all scientific inquiry requires a hypothesis, but understanding hypothesis development will be useful where it applies, as well as helpful in contrast with scientific inquiry that does not make predictions.

Framework of Scientific Research

Creswell's (2014) research design framework will be used to explore the research process. This framework was chosen for a few reasons. First, Creswell's framework is a clear and accessible introduction for beginning researchers. Second, the scope of Creswell's text is comprehensive enough to offer an overview of each of the major scientific **methodologies**. There are three components to Creswell's (2014) framework, including research paradigms (**positivist**, **post-positivist**, **constructivist**, **transformative**, and **pragmatic**), research methods (quantitative, qualitative, and mixed methods), and specific research designs (**nonexperimental: survey research**, **experimental**, **ethnographic**, **phenomenological**, **case study**, **narrative**, **grounded theory**, **convergent**, and **sequential**). Although the terms *quantitative* and *qualitative* will be used early in this section, they will not be defined in detail until much later. For now, it will be sufficient to think of quantitative research as referring to the use of numbers to describe data, and qualitative research as referring to the use of words and qualities to describe data.

Paradigms

Having a view of the world is to operate under a **paradigm**, a lens through which a person views the world. For science, paradigms are the tacit rules under which researchers operate when taking certain approaches in scientific inquiry. The word *paradigm* was given a specific meaning by Thomas Kuhn, a philosopher of science. As Kuhn (1962/1996) conceived it, "the study of paradigms … is what mainly prepares the student for membership in the particular scientific community with which he will later practice" (p. 10). Such an acceptance allows the researcher to embrace the traditions within a specific scientific approach, the beliefs that underlie the approach, and the practices that keep it coherent. In this

way, philosophical worldviews or paradigms provide researchers with a means of formulating approaches to scientific inquiry that are consistent with prior practices in the field.

Creswell (2014) outlined four paradigms that form the basis of current scientific inquiry, namely post-positivist, constructivist, transformative, and pragmatic. With the exception of the pragmatic, these research paradigms are roughly consistent with those put forth by other prominent researchers (Denzin & Lincoln, 2000). In addition, positivism will be reviewed as a precursor to post-positivism. Positivist and post-positivist paradigms view inquiry as the measurement of phenomena and discovery of facts, with post-positivism adding the need for hypothesis testing. In contrast, constructivist and transformative paradigms generally view inquiry as the exploration of individual differences, social construction of meaning, and the means to empower individuals (transformative) to participate in discovery. Finally, the pragmatic paradigm views inquiry as the employment of all practical means to obtain knowledge, including the use of both quantitative and qualitative methods. While Creswell's (2014) list of paradigms is useful as a heuristic for understanding dominant perspectives in social science research, it is not exhaustive or an entirely accurate depiction of every kind or combination of scientific approach. As Shulman (1981) stated, "research methods are not merely different ways of achieving the same end. They carry with them different ways of asking questions and often different commitments to educational and social ideology" (p. 10).

Shulman's insight underscores the value of understanding paradigms within scientific research. Although most scientific studies will include a review of literature, a methods section, and an analysis of data collected, decisions made about which studies to include in the review, how research questions are to be presented (with a prediction or not), and how the data is to be analyzed depend in part on the paradigm under which the researcher operates. For example, a researcher operating under a post-positivist paradigm would use research questions to guide their study and make one or more predictions about likely research outcomes, as well as seek to confirm their predictions. Conversely, a researcher operating under a constructivist paradigm would also use research questions to guide their inquiry but would not make such

predictions. In each of these cases, the decisions made by the researcher would be governed by the conventions traditionally utilized within the respective paradigm.

Two terms relevant to discussing paradigms are *epistemology* and *ontology*. Although not named as such earlier, **epistemology** is the study of knowledge, which outlines how researchers obtain facts and justify their belief in such facts. Within social science, the term **ontology** refers to the study of being, specifically how researchers define reality, to what degree personal perception and values are important to inquiring about human existence (Quine, 1948). Because exploring a deep understanding of human behavior and social interaction is a complex task, qualitative researchers often explicitly use these terms to guide and explain their inquiry. As will become clear in this section, the epistemological and ontological perspective of the researcher may determine the kind of method used and how that method is employed. The following is a historical account of primary research paradigms.

Positivist

In the nineteenth century, Auguste Comte (Schmaus, 2008) coined the term *positivism*. This paradigm supported the program of discovery of obtainable facts. Tacq (2011) explained that the term *positive* meant something that is real, has use, and can be measured. In the social sciences, this implied that facts were not encumbered significantly by context, that understanding the context of facts was not of prime importance. As Schmaus (2008) stated, however, the sense of discovering the real world still connoted a sense that researchers were the discoverers, and, because of this, research under positivism did not completely abandon contextual considerations. For positivist researchers, context simply was not the primary focus, or considered substantially relevant to obtaining knowledge about the world. Within social science, positivism is no longer widely accepted as a valid approach to inquiry. There are many reasons for this, but one important reason could be its neglect of context. Post-positivism and later paradigms all, to some degree, consider context as an important, and, in some cases, necessary component to social science research.

Post-Positivist

Positivism was replaced by post-positivism. In this paradigm, although the goal is to discover facts, such facts are deemed falsifiable, which introduces the need for exhaustively testing hypotheses. As Onwuegbuzie, Johnson, and Collins (2009) stated, "they [post-positivists] assert that all observation is inherently theory-laden and fallible and that all theory can be modified" (p. 121). Popper (1959/2005) qualified the shift away from positivism by proposing that, to be considered scientific, a hypothesis must be capable of being falsified, or subject to the process of falsification—hypothesis testing. In effect, researchers operating under the post-positivist paradigm use hypotheses and require that they be tested in the field. Quantitative researchers predominately operate under the post-positivist paradigm.

Constructivist

A constructivist conception of reality refers to the idea that reality is constructed through social interaction and interaction with the environment. This social construction implies that there are multiple accounts of reality, that reality is pluralistic (Onwuegbuzie et al., 2009). In terms of epistemology, researchers operating under a constructivist paradigm view knowledge as socially constructed or socially mediated, as convention, rather than factual in the sense of either positivist or post-positivist paradigms. A researcher operating under this paradigm focuses on the unique qualities of individuals and socially constructed experience. This shift from inquiring about facts to a focus on uniquely experienced realities and how these experiences create unique or singular phenomena is not a trivial one. Within social science, the shift is from seeing the world as theory-laden but real and measurable to seeing the world as subjectively unique and socially mediated. In this view, unique experience cannot be glossed over or referred to as kinds or categories. For a researcher operating under the constructivist paradigm, experience frames and substantially alters the meaning of knowledge that is discovered. One implication of this is that, under this paradigm, scientific knowledge obtained about human experience can only be similar but not the same for any two or more people or cultures. The very idea of generalizing uniqueness, in this view, is contradictory. To generalize the results from a scientific study to populations outside of the sample, there is a requirement, among other things, to assume sufficient similarities between the two populations. Under the constructivist paradigm, even if the age, gender, and other characteristics of the

participants were kept the same in the two populations, the individual differences in one population would make using the results in the other complicated, and in some cases not even viewed as possible. Qualitative researchers typically operate under the constructivist paradigm.

Transformative

The transformative paradigm also is aligned well with qualitative research. This paradigm is a combination of several perspectives that Denzin and Lincoln (2000) identify as including critical theory and participatory approaches to inquiry. The overarching assumption in this perspective is the presumed existence of human oppression, and the resulting need to alleviate such oppression. Creswell (2014) explained that these perspectives necessarily link scientific inquiry with its historical and political roots and serve as foundations for empowerment of people through the discovery of knowledge. The transformative perspective focuses on identifying the constraints placed on people by race, gender, and socioeconomic status in order to increase awareness of inherent oppression. As with the constructivist paradigm, there is a focus on subjective concerns, but the primary difference is that this approach views reality through the lens of power structures. A transformative scientific inquiry seeks to engage individuals in the process of empowerment by lifting the constraints that limit human potential. Discovery, in this view, is bracketed by the necessity to enfranchise individuals in the production of socially situated meaning making. This perspective views human collaboration as a way to emancipate socially oppressed people. An example of such meaning making is action research, which is generating knowledge in the real-life setting for the purpose of improving practice (Creswell, 2014).

Pragmatic

The pragmatic paradigm centers on the pragmatic maxim that scientific inquiry is for practical purposes (McKaughan, 2008). Pragmatic approaches to inquiry situate the inquirer in a natural setting, and allow the employment of all practical means to obtain knowledge, including the analysis of both quantitative and qualitative data. This approach acknowledges the tentative and tension-filled nature of human existence. In the pragmatic approach, reality is viewed as experience dependent, and knowledge is obtained within the context of inquiry. Dewey (1938/1986) defined this type of approach to inquiry as

"the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole" (p. 109). As Onwuegbuzie et al. (2009) and Bryman (2006) have pointed out, pragmatism typically is associated with mixed-methods inquiry.

Research Methodology

As earlier stated, a simple way of grasping the difference between quantitative and qualitative research is to think of quantitative as using numbers and qualitative as using words to describe phenomena. Viewed this way, a mixed-method approach would use both numbers and words. Although not entirely accurate, this heuristic is a good starting point. Creswell (2014) and Wiersma (2000) provide additional scaffolding to this heuristic in stating that method differences are based upon both the philosophy of the researcher (paradigm) and the technique employed in data collection. As such, differences in method of inquiry rest, in part, on beliefs about facts and whether such facts can be separated from the values researchers hold (Wiersma, 2000). The fact-value distinction is another way of using paradigms to characterize different types of research. In quantitative research, separating facts from values is not only normal practice but is necessary to determine the validity of research. Conversely, in qualitative research, facts are viewed as inseparable from both researcher and participant values. For qualitative research, separating facts from personal values would be viewed as eliminating part of the context of inquiry, not something a qualitative researcher would want to do. The credibility of qualitative research rests in part on its value transparency.

Quantitative Research

There are two accessible ways to think about quantitative research. One could think about the difference of describing data and inferring relationships from data. This approach compares descriptive and inferential **statistics**. A person could also think about differences in ways of collecting data. This approach compares practical techniques used to collect data. This chapter does not assume the reader has had either basic or advanced statistics preparation. For this reason, the latter approach will be used in this section, namely comparing techniques. Both experimental and nonexperimental techniques will be

explored. Before discussing each, there is a need to define the framework of quantitative inquiry, which includes the concepts of variables, measurement, and operational definitions.

In quantitative research, a **variable** is used to assign attributes that represent characteristics of people, places, things, or ideas (Freedman, Pisani, & Purves, 2007). Attributes are assigned in that people, for example, can have different kinds of characteristics, such as gender or age. Abstract concepts such as having motivation or being passionate can also be variables. Within the research framework, there are two primary ways of describing variables, as either independent or dependent. An independent variable represents a cause or prediction of an outcome, and a dependent variable is considered the outcome or effect. Take for example teacher-student interaction. Wiersma (2000) offered the case of teaching method and student achievement in science. The teaching method is the independent variable, and the student outcome is the dependent variable. The purpose of such a study would be to determine in what way, if any, teaching method affects student academic outcomes. To do this, the researcher would need to be clear on definitions assigned to the variables.

Operationally defining variables within the research context has two benefits. First, by making clear the purpose of the study, characteristics of the variables being explored and how such variables are to be measured, a researcher strengthens the validity of a study. Second, by providing operational definitions, the results can be compared to studies with similar conditions, thus either providing additional support or contrary evidence to previous research. Take teaching methods for example. Teaching methods might include giving a lecture, moderating a group discussion, or conducting in-class practical activities. Without clarity on the components that make up the phenomena of teaching methods, a researcher would not be certain which part, if any, affected student achievement. Conversely, without defining student achievement, for example a score of 90% or better out of 100 percent on a standardized test, the researcher would not be able to establish an effect occurred. Participants also need to be defined. When a researcher states students are sampled, a definition needs to be provided that makes clear what kind of students are sampled, such as currently enrolled sophomore-level students who have completed 30 or more college-level credits. Lastly, an operational definition needs to explain how the variables will be

measured. In the case of students, a researcher might assess student achievement by analyzing multiple-choice test scores. For the teaching method variable, surveys might be used to determine the types of teaching methods used, as well as to measure student perceived rating of each method.

Nonexperimental: Survey Research

Non-experimental designs use surveys to obtain data from sample participants. Surveys are instruments that contain questions for participants to answer. Surveys can contain yes/no, numerical rating, multiple-choice, or open-ended questions, and each of these responses, except for open-ended, are scored numerically. Creswell (2014) stated survey research describes "trends, attitudes, or opinions of a population by studying a sample of that population" (p. 155). When a survey is referred to as a scale, it uses an exclusively numerical rating system. The most prevalent numerical rating system is the Likert scale, which, typically, at minimum, would include 5 points, such as 1 to 5, with 1 meaning *strongly disagree* and 5 meaning *strongly agree* (Edmondson, 2005; Wiersma, 2000). For surveys to be useful in scientific research, they must be valid and reliable.

There are three forms of survey validity, including content, concurrent, and construct validity (Creswell, 2014). Construct validity is the most prevalently used measure for survey validity (Creswell, 2014). To be considered content valid, a survey must measure what it claims to measure. Concurrent validity refers to an instrument correlating with the results of an established survey, and construct validity refers to whether the individual questions have been confirmed to measure specific constructs (cognitive traits). Take the construct of passion for example. The passion scale was developed using exploratory and confirmatory factor analysis to establish the factors underlying the passion construct and to create a tool for detecting them (Vallerand et al., 2003). Factor analysis is used "to explore the possible underlying structure in a set of interrelated variables without imposing any preconceived structure on the outcome" (Child, 2006, p. 6). In establishing the construct validity, a survey is confirmed as being valid to measure a specific construct, such as passion.

If a survey does not measure the same way each time, the results obtained would not be reliable. A common measure of instrument reliability is the Cronbach's alpha score (Peterson, 1994). The score

eliminates the need to obtain multiple samples to establish reliability of a survey (Cronbach, 1951). Cronbach's alpha determines the internal consistency of the survey on a scale of 0 to 1; the higher the score the more reliable the survey. The conventionally accepted threshold is a score of .77 or higher (Peterson, 1994). Keep in mind that doctoral students performing survey research typically use statistical software packages, such as SPSS, to perform validity and reliability tests for surveys. In addition to survey validity and reliability, the sampling design is integral to the validity of the results.

Sampling refers to selecting a sample of participants from a larger population. Although there are many sampling designs, random, stratified, and convenience are three common approaches. These sampling designs lie on a spectrum from random to nonrandom selection. For example, in the target population of undergraduate students at a given university, a random sample would give all enrolled undergraduate students at that university an equal chance of being part of the sample group. Suppose a researcher was only interested in male sophomore students. This would be a stratified sample, selected by gender and college level. A convenience sample would be needed if only a portion of the students had publicly accessible e-mails. It would not be random or randomly stratified, but merely based upon conveniently available participants. Lastly, there are many factors to consider in determining a sufficient sample size. In effect, the larger the sample the more likely it will be representative of the larger population. Response rate is one consideration. Not every person sent a survey will complete it. Fowler (2009) offers a good discussion of conventional and formulaic means of determining an appropriate sample size.

Experimental Research

Experimental research is the most reliable method for determining causal relationships, but as Pearl (2001) explained, the idea of cause and effect were not central, or even desirable, components of initial conceptions of quantitative research. Early statisticians such as Neyman, Pearson, and Fisher all preferred to focus on correlation not on **causation** (Biau, Jolles, & Porcher, 2010; Pearl, 2001). **Correlation** refers to the degree of relationship between two or more variables (Freedman et al., 2007; Wiersma, 2000). Correlation does not imply that cause and effect exists between variables; it simply

indicates a relationship exists between two or more variables. For example, a researcher might determine that college-level (junior, senior, etc.) correlates with increases in academic GPA, the higher the college-level the higher the GPA. Now it would seem strange to say that being a junior versus being a sophomore causes a higher GPA, but a person could suppose that maturity, study skills, and consistent preparation in some way cause a higher GPA. To determine the cause of increased GPA, one might design an experiment.

A simple experimental design entails comparing two randomly assigned groups within a sample population. One rigorous version of this design is called a random controlled trial (Freedman et al., 2007). A seminal, although imperfect, example of this technique is the Salk polio vaccine field trials of the 1950s (Freedman et al., 2007). In a simple experimental design, one group is the control, which means this group does not receive any stimulus, and one group is the intervention, which means this group receives a testable stimulus. Within experimental research, the researcher endeavors to eliminate threats to validity, or factors that might interfere with determining an observed change in the intervention group when compared to the control group. Campbell's causal model (as cited in Shadish & Sullivan, 2012) essentially rests on eliminating threats to validity within the framework of an experimental design. This model strives to eliminate merely chance causes for an effect. As Shadish and Sullivan (2012) explained, Campbell's formulation rests on two assumptions. The first is the establishment of internal validity, and the second is the establishment of external validity. "**Internal validity** threats are experimental procedures, treatments, or experiences of participants that threaten the researcher's ability to draw correct inference" (Creswell, 2014, p. 174).

The second assumption, **external validity**, refers to how the observed change in the intervention group could be relevant to the general population (Shadish & Sullivan, 2012). Generalizing the results is known as external validity. As Cartwright (2004) stated, generalizing the results to different populations is not an easy task, as it requires taking into account nearly perfect alignment of population characteristics, including contextual and situational variables. For example, one threat to external validity is selection bias (Wiersma, 2000). Selection bias refers to researchers using personal preference to select

and assign participants to control and intervention groups. This introduction of human bias in assignment decreases external validity. As such, there is a need to remedy this threat. One such solution is Rubin's (2004) causal model, which eliminates selection bias by using a mathematical process for assigning units and inferring causes.

The experimental design presented in this chapter is simplistic in form. In designing more advanced experiments, there are several items to consider. For example, if it is not possible or preferable to assign participants to groups randomly, this would be considered a quasiexperimental design (Creswell, 2014). Other more advanced experimental designs might include observing a single subject over time, a pre-posttest configuration, and multiple control and intervention groups with an arrayed pre-posttest configuration. Creswell (2014) offers an accessible treatment of these more advanced experiments.

Qualitative Research

Qualitative research primarily entails the analysis of symbols to explain human experience and interaction. The reason for this is that qualitative research focuses on individuals or groups of individuals, and people use symbols to describe contexts and situations. The constructivist paradigm might be useful here to explain the scope of qualitative research. If knowledge is constructed socially, and if knowledge creation is about meaning making and is affected substantially by social interaction, then there is a need for an expansive description to define the phenomena of inquiry. As Ponterotto (2006) explained, the term *thick description* has come to define the way qualitative researchers acquire and explain knowledge about social interaction. Only through observing the thoughts, feelings, and entire context of experience does the qualitative researcher capture such a thick description of reality.

A thick description is used in qualitative research to obtain a holistic or extensively detailed expression of a context or situation. Describing an apple on a table is a thin description. It is thin in that it does not describe the observer's perspective, nor does it provide details about the physical objects, such as the nuances of variation in color, shape, or texture. Exclaiming that there is an apple on a table does not capture qualities such as why the observer was there, how those items came to be where they were

observed, or where the room was located, such as in a specific house, in a specific geographic location. A thick description would include all of these qualities.

There are a variety of ways qualitative researchers use a thick description to inquire about phenomena. The main approaches include ethnography, phenomenology, case study, narrative, and grounded theory.

Phenomenology

In phenomenological research, researchers inquire about the unique thoughts, feelings, and experiences that help describe people within situations (van Manen, 2002). For example, both researchers and sample participants might want to know about the experience of traveling to work. Do commuters get frustrated when it takes longer than usual to travel to work? How does a person travel to work? The lived experience of traveling to work in this way can be viewed as unique to an individual, with a unique means of transportation, unique route driven, or unique experience of actually driving in an automobile, such as sitting in front of steering wheel and steering. To explore these phenomena, a researcher might observe people traveling to work, interview one or more individuals found to travel to work, or write down thoughts in a field journal, expressing personal reflections of observing and interviewing these people. In each of these examples, the focus is on unique lived experience, and the lived experience is not only the person traveling to work but also the researcher inquiring about such practices.

Case Study

Whereas an ethnographic study aims at discovering cultural artifacts and a phenomenological study focuses on individual lived experience, a case study examines time sensitive activities that have explicit and tacit rules that affect human experience and interaction. The case study approach was first defined as inquiry for obtaining knowledge about decision making within particular cases; a more complete definition explains that a case study "investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 2009, p. 18). Case studies are time and activity dependent, which means a case study explores a set of activities within a particular time frame (Creswell, 2014). As with other qualitative

approaches, the researcher could utilize artifacts, interviews, and observations to explain a particular case, or series of cases. In addition, focus groups and surveys with open-ended questions are often used to collect information from participants. Although numerical surveys are not often used in qualitative research, descriptive information might be collected in a case study to aggregate demographic information about participants, such as the total number of participants, average age, or gender percentages. Yin (2009) cited Tally's corner as a seminal example of a single-case case study. The study explored the experience of African American men who were frequently found at Tally's corner in Washington, D.C. in the late 1960s (Coles, 1968). The study provided information about a subculture of individuals, "their coping behavior, and in particular their sensitivity to unemployment and failure" (Yin, 2009, p. 49). Although case studies typically include interviews with participants, such interviews might only tell part of the story, or confirm the story a researcher expects to find.

Narrative

In narrative research, the focus is on telling the narrative life stories of participants. This type of inquiry entails expressing the constantly changing but meaningful experience of people. Whereas a case study has well-defined parameters, such as being time and activity dependent, narrative research tells a story that may not necessarily have such parameters or restrictions. Connelly and Clandinin (2000) offered a framework for how this might be implemented. A narrative researcher attempts to realize and embrace the idea that experiences only become isolated when reflected upon. In experience, people hold remnants from past experiences, create new unified experiences, and carry forward these new remnants, while simultaneously interacting with others in situations (Connelly & Clandinin, 2000). Narrative research then uses interviews, artifacts, and researcher observations, as co-participants in the inquiry, to help tell life stories. Connelly and Clandinin (2000) offered the example of teacher knowledge. Their example demonstrated how two groups of specific teachers obtained, retained, and expressed the knowledge they used as teachers. Narrative research can be a useful tool to reflect on experiences in particular contexts, with the realization that the retelling of stories creates a new story in and of itself. In this way, narrative research can be transformative.

Grounded Theory

In contrast, a grounded-theory approach focuses less on transformation and more on reducing the effect of preconceived notions in the research activity. Glaser and Strauss (1967/2006) outlined the components of grounded-theory research. As the term implies, grounded theory builds or discovers theory from the ground up, not by imposing theory on participants. This approach views all encountered data as possibly useful to an emerging understanding of the topic being researched. This differs significantly from quantitative research, which has a specific focus, and most qualitative approaches, which at least use a literature review to establish a theoretical framework. As previously stated, a literature review is an efficient way of determining the right questions to ask. In grounded theory, the right questions emerge from encountering data in the field. No preconceived theory is imposed on grounded-theory data. Instead of seeking out other studies completed on a topic, a grounded-theory researcher may interview and observe participants to generate themes, examine artifacts, or perform content analysis of written texts, which involves analyzing idea or word frequency in written material. The researcher then interprets the collected data to create a theoretical framework. As Glaser and Strauss (1967/2006) stated, this is called "discovering theory from the data" (p. 1). In effect, grounded theory is an inductive approach to inquiry, because it creates propositions based upon exemplars found in experience. Its approach to provisionally acknowledging all found data as valuable intersects with the approach employed by mixed-method researchers.

Mixed-Methods Research

A mixed-method researcher may utilize both quantitative and qualitative methods to obtain knowledge. In one sense, exploring mixed-method approaches brings this chapter full circle, because using a mixture of methods is the way people inquire in everyday life. People use numbers, observed phenomena, and information from others to make decisions. There is still some disagreement amongst researchers as to the usefulness of a mixed-methods approach, as it combines paradigmatic lenses, but the pragmatic paradigm does offer a coherent way of framing mixed-method research (Bryman, 2006). There are several types of mixed-method approaches that have been developed, such as convergent and sequential designs

(Creswell, 2014). In using a mixed-method approach, the researcher has to be clear on the goals of such inquiry. The goal of the project will determine the research design, data analysis, and application of the findings. For example, in convergent designs the quantitative and qualitative portions are conducted simultaneously. Here the researcher could convert the data into either quantitative or qualitative formats or display the data side-by-side (Creswell, 2014). As for application of the findings, approaches might include comparing and contrasting quantitative data, explaining in more detail quantitative findings, or providing support for an intervention in a program evaluation (Creswell, 2014). Depending upon the intended purpose, a mixed-method approach will have varying degrees of value for a researcher and the research community.

Conclusion

Ordinary inquiry and science intersect with discovery. Although science is systematic, uses different tools, and has different levels of analysis, it has continuity with ordinary inquiry. As explained in this chapter, the philosophical commitments of the researcher, methods employed, and techniques utilized determine the research focus and analysis of data. All three of the predominant scientific research methods, quantitative, qualitative, and mixed method, can be employed to obtain knowledge, but in choosing a method, the researcher needs to be aware of inherent epistemological and ontological commitments. As a doctoral learner studying to become a social science researcher, awareness of the formal traditions of inquiry is a necessary component for producing coherent and relevant dissertation research. The choices made as a social scientist affect not only the kind of research topic chosen but also the value or usefulness of the results obtained.

Sidebar 1

Continuity

The reader should note that there is a difference between phenomena having continuity and being indistinguishable. Continuity denotes some sort of connection between phenomena. There are similarities

between ordinary and scientific inquiry, but these similarities are due to their mutual connection. Discovery has been proposed as this connection or, in formal terms, the intersection of ordinary and scientific inquiry. To say these two types of inquiry have continuity is to say there is an uninterrupted relationship (intersection) of the two.

As noted later in this chapter, there is a sense in which ordinary and scientific inquiry are discontinuous. This may seem confusing. The point to consider is how something can have both continuity and discontinuity with something else, to be necessary in one respect but unnecessary in another. When it is stated that scientific inquiry is an outgrowth of ordinary inquiry this seems to help explain this sort of phenomena, but it only shows part of the picture. The example of a table may provide further explanation of this relationship.

One can state that the legs of the table have continuity with the tabletop. By definition, a table includes some sort of legs upon which a top rests. Here, the table, taken as a whole, is used to represent the entire activity of inquiry. The legs of the table are taken as analogous with ordinary inquiry, and the top is taken to be like scientific inquiry. This example may also seem inconsistent, for it implies that there would be no scientific inquiry without ordinary inquiry, and no ordinary inquiry without scientific inquiry. In one specific sense, this is correct.

Although, temporally speaking, scientific inquiry is an outgrowth of ordinary inquiry, that is ordinary inquiry precedes the activity of scientific inquiry, the activity of inquiry contains both and needs both to be what it is, just as in the table example. This is not to state that life cannot be lived without science. Surely, life was lived before the birth of formal science, and there are many worthy endeavors in life that do not include science. It means that either type of inquiry taken in isolation is deficient. Put another way, some of the deficiencies of both types of inquiry are satisfied by the awareness and embracing of their continuity. Science without everyday life does not have a purpose. Everyday life without systematic ways of knowing is limited in scope, ignoring the tools accessible for humans to use.

Choosing a Method

Given the paradigms, traditions, and techniques offered in this chapter, which method is best suited for a dissertation? Three primary activities ultimately will answer the question of method for a dissertation candidate. These activities include receiving guidance from a dissertation committee; completing a literature review, which helps to identify the gap or tension in the literature on the research topic of interest and form relevant research questions; and the candidate's reflection and willingness to be creative in choosing a method. This last activity is vitally important for research relevancy, because choosing a method does not necessarily mean choosing ready-made tools.

Even experienced researchers sometimes disagree on appropriate methods of inquiry for different kinds of phenomena. In addition, many researchers never venture beyond their chosen method for inquiry, choosing rather to reuse the same ready-made tools for inquiry; and there is nothing wrong with this approach. This is the advice often given by dissertation committees, but for the prepared doctoral candidate, the existence of ready-made tools for inquiry should present the idea that there might be designs waiting to be discovered.

Take, for example, mixed method. This method of inquiry may seem like a solution to the shortcoming inherent in the quantitative and qualitative traditions presented in this chapter. But are established mixed-method designs the only way to connect the traditions? This is where the candidate's reflection and willingness to be creative becomes important. The intersection of the predominant methods for inquiry present opportunities for creative ways of inquiring (Tacq, 2011). Should techniques for asserting causality and using an experimental method design only be utilized by quantitative researchers? What would an experimental method look like for a qualitative researcher, or equally important, how could a qualitative researcher establish causality in a local setting and transfer this established relationship to other populations? Conversely, which qualitative tools could be used to support generalizing quantitative results to the larger population? Would these innovations follow an established mixed-method design or become a new design?

If a researcher is to transcend or get behind the barriers that mark the differences between each research tradition, a researcher needs to explore and come to appreciate all research methods in use. The

transformation may result in new ways of employing old tools, or the creation of new tools, but it may also mark the transition of the researcher from logical inquirer, to innovator, and, finally, teacher of methods to future doctoral learners. Earning a doctoral degree offers all of these possibilities. Through reflection, guidance from mentors, and exploring previously used tools, the appropriate method for inquiry will become clear.

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Chapter 6: Critical Thinking: The Means to Inquire

By Dr. Seanan Kelly

Introduction

In an era in which increasing advances in technology offer wider access to information and education outlets, colleges and universities place a premium on developing critical-thinking skills to deliver a more educated and engaged workforce (Richardson & Ice, 2010; Saade, Morin, & Thomas, 2012). Critical thinking provides a means of engaging learning processes across academic and professional spectrums, "bridging the gap between theory and practice and between the academy and the workplace" (Barkley, Cross, & Major, 2005, p. 182). Why is critical thinking as a process and application important? As Wiggins (1989) observed,

> The sign of a poor education … is not ignorance. It is … the thoughtless habit of believing [in] unexamined, superficial or [outdated] opinions and feelings *are* the truth; or the habit of timid silence when [an individual] does not understand what someone else is talking about (p. 57).

Wiggins pointed out that not having an answer is not the problem per se, rather the problem lies in a belief that the totality of what people have learned is all they will ever need to know, and people tend not to examine what they know or do not know.

A few basic questions will help to open this discussion: What comes to mind when presented with the term *critical thinking*? How can critical thinking support doctoral learners' development as scholars producing scholarly works? What critical-thinking skills help to produce outcomes that are both informed and clear?

This chapter seeks to engage a discussion of these and other questions related to critical thinking: how doctoral learners perform critical thinking, how to prepare for thinking critically, and how to engage critical thinking in the approach to new information at the cross-section of our identities and knowledge sources. Also discussed are the benefits, types, and characteristics of critical thinking, as well as examples of thinking critically in different contexts.

Definitions of Critical Thinking

Why is the conversation about critical thinking so prevalent in academe and, in particular, scholarly writing and research? A principal role of academic efforts is to produce new knowledge adherent to standards of academic rigor.

To better understand the linkages between knowledge production and standards of academic rigor, it is helpful to understand the ways critical thinking is framed in the context of scholarly activities. A few definitions of critical thinking include

- " … the ability to analyze facts, generate and organize ideas, defend opinions, make comparisons, draw inferences, evaluate arguments and solve problems" (Chance, 1986, p. 6).
- " … the conscious and deliberate process that is used to interpret or evaluate information and experiences with a set of reflective attitudes and abilities that guide thoughtful beliefs and actions" (Mertes, 1991, p. 24).
- " … the active, systematic process of understanding and evaluating arguments. An argument provides an assertion about the properties of some object or the relationship between two or more objects and evidence to support or refute the assertion. Critical thinkers acknowledge that there is no single correct way to understand and evaluate arguments and that all attempts are not necessarily successful" (Mayer & Goodchild, 1990, p. 4).
- " … the mental processes of discernment, analysis, and evaluation (Ibrahim & Samsa, 2009) applied to information in order to achieve a logical final understanding and/or judgment" (Saade et al., 2012).
- " … the ability and willingness to assess claims and make objective judgments on the basis of well-supported reason" (Wade & Tavris, 1987, p. 308-309).

While there is not widespread agreement on a single definition of critical thinking, taken as a whole, these definitions provide a means for scholars and critical thinkers to be judicious "in the ways we seek to support our modes of thinking—about any subject, content, or problem—in which [scholars] improve the quality of [their] thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them" (Paul, 2007, as cited in Saade et al., 2012).

Comparative Analysis

A component of knowledge output involves analyzing and comparing information sources to provide direction and clarity within a particular line of inquiry. Essentially, comparative analysis is the ability to differentiate and describe key elements or characteristics within two subjects in a way that is both accessible and rigorous. Take, for example, a comparative analysis of an automobile made in 1964 and an automobile made in 2014. Fundamentally, both serve the same purpose and have similar form—four wheels, a windshield and at least two doors; however, these represent only cursory examinations of similarity or difference.

What might a scholar look into examining further that might change the function or performance more directly of either automobile? Science and technology have provided advancements in several different ways. The example of a hybrid electric and gasoline-powered engine versus a purely internal combustion engine can show how technology has changed the performance and output of automobiles across generations. But what is the science or engineering behind these enhancements or developments? How might engineering change the overall complexion of an automobile from the way it is designed to the materials from which it is constructed? The analysis now has moved past a cursory evaluation of size, shape, or similar body parts, to an analysis of technological differences between the fundamental components of locomotion.

Revisiting the definition of critical analysis above, expanding the definition to include the terms *cursory*, *depth*, *clarity*, and *informed*, making the definition now read: Comparative analysis is a process of differentiating between cursory characteristics and key elements to present an informed discussion with depth and clarity in a way that is both accessible and informed.

In the example of the automobile comparison, the analysis moved from a general description of shape and form to an examination of the component parts of each, informing a discussion of performance, engineering, and output. The analysis moved from a discussion based on observation to a discussion based on examination of the component parts.

Why Scholars Should Engage in Critical Thinking

Doctoral learners come to this academic space from different backgrounds and experiences, so it stands to reason they all likely will progress toward the end goal—completion of the doctoral degree—in different ways, based on their familiarity and dexterity with various doctoral dispositions.

Because doctoral learners all come to critical-thinking spaces with different identities, experiences and frameworks for interpreting information, their ability to develop informed commentary and discourses will reflect the diversity of their knowledge bases (where, when, and how knowledge is acquired). Herein lies a particular value of critical thinking as an individual and social practice: Differences in thinking frameworks offer scholars the opportunity to shape discussions from different perspectives, while in turn providing a depth and diversity to their understanding of objects and subjects.

Academic research and writing is less about finding concrete answers as it is about forming well-supported questions while justifying assertions with evidence versus opinion, which, when examined in the research process, produces more questions. Research is less about determining truth or confirming assumptions as it is about confirming the existence of other truths or possibilities. Part of developing research questions attempts to identify gaps in research by observing settings or groups of people and wondering, by some measure, why something is the way it is. While assumptions form the basis for asking questions, research ideally seeks outcomes other than those scholars think they are going to find. This is what is meant by advancing knowledge or advancing the discourse; the search is not for a single answer as much as it is for additional questions.

Critical thinking is as much a behavior as it is a practice (Saade et al., 2012). Said another way, it is about focusing as much on producing questions as producing answers. Critical thinking, as a component of everyday learned and practiced behaviors, can affect the ways in which new and old information is processed over time. New information, for instance, is filtered through individual identities, learning frameworks, and experiences. Consider the saying, "Time heals all wounds." Does time, in fact, heal all wounds, or does our perception of events change with age? How might experiences, accumulated over time, change the way prior sources of information or outcomes are evaluated? Critical thinking includes ways to approach new information, discourses, research, and writing, among others,

with an interest in, and pursuit of, understanding subject matter by examining its constituent parts in detail.

In the context of doctoral pursuits, critical thinking allows scholars to examine various perspectives, research methods, outcomes, and academic orientations to provide a more informed perspective (Beyer, 1995). The words *informed perspectives* were used because critical thinking also seeks to produce more questions than answers. Additionally, critical thinking offers scholars the space to ask appropriate questions and draw upon a variety of resources to inform their understanding of these questions. Over the course of time, the number of questions and, more specifically, the knowledge base associated with research and writing grows. Therefore, the process of seeking out and understanding the origin of questions and the research associated with these questions longitudinally becomes central to developing new lines of inquiry.

Along the way, scholars also may be asked to consider alternative interpretations of information or perspectives that in some instances run counter to their own identities or understanding of knowledge. Engaging in critical thinking also may require scholars to accept new explanations, because these explanations, in some instances, can provide a simple or better basis for understanding inconsistencies across data sets. Doctoral learners may need to consider their own belief systems and frameworks, as well as frameworks, identities, and knowledge that stand counter to their understanding of fact or truth.

Critical Thinking in Practice

Churchman (1971) formalized a process addressing two kinds of problems: well-structured and ill-structured problems. It is understood, without much explanation, that a car with a flat tire cannot be driven (a well-structured problem). A flat tire, at a certain point, will disintegrate and limit the ability of a car to go anywhere with any measure of speed or direction. Conversely, understanding whether burning fossil fuels does or does not affect the climate or environment demands a more in-depth understanding of chemistry, climatology, and meteorology, among others (an ill-structured problem).

The example of a well-structured problem provides a fundamental and basic truth that can be seen with the eyes and does not need to be tested—no tire, no forward motion. The example of an ill-structured

problem contains information with which the viewer may have little or no familiarity. The levels of complexity involved with understanding climate change are far greater than understanding locomotion as a function of a flat tire.

That said, subjects as complex as fossil fuels and differences in global climate change do not need necessarily to be the focus of study; these examples are meant to illustrate a shift in the depth of analysis necessary to provide an informed and well-supported discussion. Doctoral learners will be asked to engage thinking, writing, and analysis in ways that may not be familiar or comfortable because they are new. Doctoral learners will be asked to employ different methods of thinking and new sources of information they may not have considered previously to provide more informed and focused analysis of subject matter. These efforts serve the end result of dissertation writing as doctoral learners work to narrow their focus in a given area to add to the established body of literature produced to date. Doctoral learners are making a shift from students fulfilling academic tasks, to scholars making substantive contributions to their chosen field.

Metacognition

Metacognition, as a practice, asks the participant to be aware of and take into account his or her own knowledge foundations while looking across wide information sources to provide a glimpse of factors existing in the larger picture. Metacognition can help to define an area of focus and transfer emphasis to specific areas of thought, engaging critical thinking. Metacognition provides the opportunity to take multiple factors and characteristics of human behavior and outcomes into account. In doing so, scholars are bringing multiple perspectives into the conversation, which provide a diversity of observations, experiences, and applications of research to draw upon. Metacognition can help provide platforms on which to cross-examine phenomena in various contexts.

Characteristics of Critical Thinking

As many definitions of critical thinking exist, there are equally as many examples of characteristics of critical thinkers. Among other characteristics, critical thinkers

- are committed to a given task. Their commitment to engaging in a task is not contingent on feelings associated with the task. Critical thinkers' commitment is based on an objective decision to dedicate time and effort to completing a given task (Blasi & Oresick, 1986; Marzano, 1988).
- are persistent. Just because critical thinkers do not find the answer to a question immediately does not mean they give up. They try a different key word or search engine.
- learn from failure. Persistence and learning from failures go hand in hand. Why repeat the same actions if the outcome is the same? Critical thinkers try again, and look for another way to the other side.
- are resourceful. Critical thinkers seek support when they need it, not when they run out of options. Being resourceful means being aware of available support options and calling upon them as a means of getting ahead, not catching up.
- work beyond their limits. This does not mean they work to the point of exhaustion, but, instead, continue to press ahead to produce more than they thought possible.
- present clear and concise questions. Clear answers need clear questions. This is a process and may take time to refine, but it is a necessary part of developing clear and concise commentary on a given subject.
- are consistent in applying the same effort, scrutiny, and processes across multiple tasks, such as reading, writing, note-taking, citing sources, and formatting references among others. Critical thinkers find what is successful and continue doing it.

- are focused and revisit the bigger picture. These terms work hand in hand. Focused research, writing, or analysis should clearly and visibly tie into a larger conversation of which a critical thinker's work is a part.
- are open-minded. This doesn't mean taking everything into consideration when examining problems or questions, because everything may not be relevant. However, this may mean confronting assumptions about what critical thinkers know and what they think they know.

Learners can think about these processes in the context of their doctoral journeys this way: Over the course of time and practice, learners should shift their approach to new information and their place within that information from a position of casual observer to informed participant within a set of academic processes (research, writing, analyzing, and discussing) as a means of presenting new insights. Doctoral learners should aim to move from being students completing academic tasks to scholars and experts making substantive contributions in their chosen fields. This process unfolds differently for each scholar and researcher. Critical thinking in part allows us to develop our research and writing skills to meet our expectations of personal and academic success as well as the expectations of doctoral scholarship accordingly.

Models of Critical Thinking

Critical thinking, as a process, does not have to be relegated to a particular model, scale, or construct. That is, there is not a single, best model to describe a good critical thinker or, conversely, describe a person who lacks characteristics of critical thinkers. Rather, developing critical-thinking skills can be presented and discussed as a process that can be followed in order to more consistently and thoroughly engage critical-thinking practices. As with a doctoral journey, these practices can be pictured as stages of development. For this reason three particular

models are presented as examples of critical thinking in developing stages: Kolb's (1984) Experiential Learning Model, wherein learning is conceived as a process, not as a set of definitive outcomes; Bloom's (1956) Taxonomy of Higher Order Reasoning, which classifies thinking within levels of intellectual behaviors; and Kitchener and King's (1981) Reflective Judgment Model, which describes changes in cognitive reasoning.

These particular models of thinking provide an active illustration of moving from simple engagements with new information to more advanced and in-depth examinations of new ideas and framework. An examination of Kolb's (1984) Experiential Learning Model, Bloom's (Bloom & Krathwohl, 1956) Taxonomy of Higher Order Reasoning, and Kitchener and King's (1981) Reflective Judgment Model runs alongside expectations of doctoral learners: There should be a fundamental shift from completing simple academic tasks to becoming expert researchers, scholars, and writers who make substantive contributions to a chosen field.

Experiential Learning Model

Kolb (1984) presented four stages of information acquisition in which the learning process includes differences in individual learning styles and learning environments. The model itself posits development is attained by a process of higher level integration and application and understanding of information in the moment. Essentially, Kolb places a premium on experience as a primary source of conceptualizing information in higher level orders, realized in the subsequent choices made when engaging new experiences and sources of information. The first step, a *concrete experience,* is positioned as a space through which people encounter new information by testing their acquired knowledge and understanding. This first step in the process is realized fully when learners open themselves to the opportunity to engage themselves fully to a new experience. The second step in the model, *reflective observation,* positions learning as a function of reflecting on information from different perspectives, supporting a wider engagement

with both the immediate source of information as well as a broader set of possibilities. *Abstract conceptualization* describes the formation of new ideas and concepts drawn directly from engagement with a core experience—a transition from observation to logical and clear assumptions. The final stage, *active experimentation,* brings Kolb's model full circle, as learners realign their knowledge frameworks and then test their new knowledge to make decisions and solve problems.

Kolb essentially provides a framework to understand processes involved in using preexisting knowledge to interpret an experience, create new knowledge, and engage new knowledge in new experiences.

Bloom's Taxonomy

Bloom (Bloom & Krathwohl, 1956) posited a hierarchy of three basic thinking behaviors followed by three higher order thinking behaviors. The most basic form of knowledge acquisition is remembering small pieces of information. Understanding and explaining information or concepts is followed by the ability to apply knowledge across multiple contexts. Bloom positioned the ability to analyze information in the first of his higher order thinking behaviors, followed by the ability to synthesize ideas and information to create new ideas. The ability to evaluate information sits atop Bloom's hierarchy, as information is formed fully and justifiable.

Reflective Judgment Model

Kitchener and King's (1981) seven-tier framework considers assumptions people make about their own knowledge and how knowledge is acquired. The model attempts to provide a measure of individual ability to solve well-structured and ill-structured problems. As discussed by King, Wood, and Mines (1990), well-structured problems have a high degree of certainty associated with their outcomes. For example, fragile objects break when dropped. An egg is fragile; therefore, an egg will break when dropped. Ill-structured problems, on the other hand, are more difficult to describe with a high degree of

certainty or finite terms. For example, what should or should not be considered in the Common Core Standards curriculum of K-12 education: the effects of deforestation in the Amazon to develop medical cures from indigenous plants or the development and sustainability of alternative energy resources, such as solar, wind, and thermal? These discussions involve multiple considerations that change complexion and complexity depending on the variables and context in which they are evaluated.

Individuals who fall into the first three levels of Kitchener and King's (1981) model perceive truth and fact as existing more or less in black and white; there is true, there is false, there is good, there is bad. Generally, there is no ability for people who fall in the first level to differentiate between well- and ill-structured problems, viewing each as though they were defined with a high degree of certainty and completeness (Kitchener & King, 1981). Individuals in the fourth and fifth stages assume knowledge is gained individually through evaluating available evidence. Knowledge acquisition is positioned as unique to each individual: We are different; therefore, we acquire knowledge differently. People holding these assumptions can decipher difference in problem type but have difficulty solving ill-structured problems. Those in levels six and seven reflect the most advanced set of assumptions regarding knowledge acquisition. In these final two stages, commentary must be grounded in data, and, more importantly, the commentary itself must meet standards for clarity and soundness. "Certainty of judgment may be high but not absolute, and judgments are open to change if new data or new ways of interpreting the data become available" (King, Wood, & Mines, 1990).

Metacognition, critical thinking, and models of thinking, are linked in the way of direct, continuous, and sustained engagement with critical-thinking behaviors. These behaviors are part of what could be considered scholarly dispositions. Referring back to the doctoral dispositions discussed in Chapter 3, there mightlikely be found connections between the doctoral dispositions and those behaviors commonly associated with critical thinking.

Comparative Analysis and Comparative Research

If comparison refers to an examination of similarity or dissimilarity between two objects, analysis refers to the examination of the component parts of subject or object for purposes of discussion, and research refers to the examination of the constituent parts of a subject or object as a basis for ascertaining fact or drawing conclusions, then **comparative analysis** can be described as a general examination of wider bodies of information. Also, comparative research can be described as a narrow examination of very specific bodies of information or an acute examination of data sets. Comparative analysis is general and comparative research is focused.

In the course of conducting comparative analysis, perhaps through the use of a comparison matrix, scholars can move beyond cursory identification and presentation of component parts of research articles. Such analysis moves from what might be called the *eyeball test*, in which the viewer relies solely upon what is observed on a surface level, to a deeper, more nuanced analysis of new information in a specific context, supported by a review of the literature. Scholars can begin to draw upon resources and ideas from other perspectives to think differently about the information being processed. What information do scholars bring to new observations? That is to say, how have a given set of understandings been formed or informed such that highly focused research is created within in a distinct field of interest?

Synthesis of Disparate Information

What does synthesis mean in terms of critical thinking? Synthesis, in its most basic form, means taking two or more different ideas and making them relevant to one another. This means doctoral learners likely will be drawing on more than two or three different perspectives to establish their focal point. Further, this likely will mean doctoral learners will have to support their main points from perspectives that may exist in different contexts.

Take, for instance, an observation about sick bee colonies drawn from reading a newspaper of magazine. What do sick honey bees have to do with macroeconomics, ecosystems, and agriculture? The lines may not be too terribly difficult to draw if it is understood that bees pollinate plants, providing larger crop yields, and a stronger agriculture base. A line of inquiry might start out by attempting to

understand honey-bee populations (entomology) and global agriculture markets (economics). Further, if a determination can be made as to which parts of the country rely on or provide high agriculture exports and the percentage of national exports comprised of agriculture products, a more well-rounded and focused perspective of the importance of maintaining healthy bee colonies is established. So, coming full circle to an analysis of the effects of sick honey bees on global agriculture markets, sick bees, potentially, means less agriculture, which means there is less to sell to the nation and the world. Suddenly, healthy bees become a more visible issue to address.

Synthesizing Disparate Information

What is disparate information? In a general sense, it is a disparity between two objects that upon first glance appear diametrically opposed or lacking in similarity. For example, what do the Apatosaurus and toothbrushes have in common? At first glance, an examination of dinosaurs and toothbrushes appears arcane. Consider the following question: What does a 20-ton dinosaur have to do with a toothbrush that fits in the palm of a hand? To engage this question, consider a few characteristics of each. The Apatosaurus, also, mistakenly, called Brontosaurus, was an herbivore thought to have stood on its hind legs to use its height and long neck to reach high into the canopy and forage among the treetops. The toothbrush has become both a useful implement to maintain oral health, According to the Library of Congress, an early toothbrush appeared as early as 4000 BC (Library of Congress, 2010). This early brush was nothing more than a twig with frayed ends, called a chew stick. Not until 1938, when the DuPont company produced the first nylon bristle toothbrush, has the tool delivered the utility and shape known today. Nylon bristles helped the brush last longer, and the smaller head and straight, flexible neck and handle meant the user could get to all the hard to reach places in the back of their mouth (Library of Congress, 2010).

With that information, consider the question again. What does the Apatosaurus and toothbrushes have in common? Both have longnecks and small heads, useful for getting at hard-to-reach places. This example may be oversimplified; however, the point remains the same: Conclusions are drawn based on analysis of two seemingly disparate subjects, broken down into the component parts of each.

Conclusion

To bring Wiggins' (1989) comments full circle, the knowledge doctoral learners have acquired to this point in their lives does in fact serve in a number of ways, depending on how they respond to opportunities to apply what they know. What doctoral learners have acquired to this point represents another opportunity to help others expand their understanding of the world around them. More specifically, doctoral learners should aim to move from being students completing academic tasks, to scholars and experts making substantive contributions in their chosen fields. Along the way, doctoral learners can enhance their understanding of what they have come to know and what they can know in the future.

Sidebar 1

Research from the Field

Remember that comparative analysis means we are examining component characteristics of a problem or question in order to develop an informed discussion. For example, if one starts with a generic statement, such as "Kelly (2012) used a sample of 14 African American men who played football at a university in the Southwest," there is nothing within this passage that necessarily provides anything more than a cursory understanding of who was included in the sample or why they were included in the study. However, if the understanding of purpose and wider application is advanced with a statement, such as:

> To better understand the experiences of African American male football and basketball student-athletes pursuing undergraduate degrees while competing in Division 1 college sport, Kelly (2012) included a sample of 14 student-athletes who met the following criteria: ranged in age from 21-23 years; were in their junior year; had eligibility remaining and had not completed a degree; had expired eligibility but had not completed

a degree; or had graduated but were still competing with eligibility remaining. These particular indicators were used because students in their junior year of college would, generally speaking, be in at least their third year of college, likely close to completing their undergraduate degree, and could be expected to have more experiential information to share longitudinally about their experience in college athletics. As a comparative measure, Kelly (2012) presented each participant with a demographic questionnaire to provide a general cross-sectional analysis of socioeconomic status, family size, level of education their parents achieved, age, and description of geographic location of residence (urban, rural, metropolitan).

This information becomes more relevant when the tables are turned and one examines scholarly information from the perspective of the reader. More specifically, the learner's effort is as much about identifying gaps in the literature in pursuit of potential research as it is about identifying research opportunities by including variables or groups that are not included in the methodology.

Given a task to identify, present, and discuss empirical research, readers are provided a summary of component characteristics of the study sample, why the researcher selected a specific sample, and how the sample supported the study's research questions. Further, the reader is provided a framework for understanding the purpose of the study and the results and conclusions that come out of the research questions.

Sidebar 2

Critical Thinker: Malcolm Gladwell

One need not be an internationally acknowledged genius, mathematician, or scientist to ask questions based on observations in contemporary, every day settings. Over the course of several published works, writer Malcolm Gladwell has examined information sources and pathways linking human behavior and exchanges. Among other questions, Gladwell (2008) has examined whether people are lucky in business or were in the right time and place to learn and act upon access to information networks and learning resources. What were the circumstances that lent themselves to success? Was former Microsoft CEO Bill Gates simply a genius or were there inherent advantages he was privy to in the way of geography, proximity, and access to learning resources? (Gladwell, 2008). The short answer for Bill Gates, it appears, was a little bit of all these characteristics set in motion by relatively few, key relational circumstances that lent themselves to his becoming one of the best programmers in the world at a young age.

Another of Gladwell's (2008) examinations involved linking youth hockey teams in Canada to wider education policy and practice. Gladwell was interested in understanding if being placed on an advanced hockey team was an anomaly reserved for a talented few (parallel to students deemed gifted and talented in education settings) or factors such as age or the amount of extra work played in a role in athletic success (or academic success in the case of gifted and talented).

After conducting a few cursory examinations across age groups, Gladwell (2008) observed that advanced hockey players were born earlier in the year, between January and March. Why is this important? Two children born in the same year—one in January and one in June—fall in to the same age category with respect to participation in athletics or academics. So the advantage afforded a child born earlier in a given year comes down to their being more physically advanced than a child born later in the year. In the context of academics, the same child could be expected, by some measures, to be cognitively more advanced simply by having

been born a few months earlier and their bodies having that much more time to develop and adapt to learning conditions. How is this linked to education policy?

Differences in age between a young person born in January and a young person born six months later, for instance, mean an additional six months of physical development. This extra development becomes an inherent advantage for the young person born early in the year. This carries over to education settings in the way gifted and talented students are identified and placed. Applying the same approach to gifted and talented, the rapid changes that occur early in life, given a six month head start potentially creates the false appearance of one child being smarter or more advanced than their peers. In the case of two learners in a classroom, the difference in assessed performance may be less a function of ability as it is a function of physical development. This is important in terms of an inherent advantage created institutionally, in the way of access to learning resources when a child is labeled gifted and talented. Presented in terms of empirical examination and potential doctoral research, learners might seek to understand ways academic outcomes might be affected by institutional profiling of learner proficiencies as a function of age.

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Chapter 7: Preparing for Writing

By Dr. Julia Langdal

Introduction

Staring at a blinking cursor on a computer screen or a blank piece of paper on a desk is a daunting prospect. Knowing that page and more must be filled is enough to give anyone writer's block. How, then, does a person learn to write academic papers? What is the academic writing process?

Academic writing at the doctoral level should be professional, thorough, accurate, and concise, yet still engaging enough to maintain a reader's interest. It should be based upon peer-reviewed sources and evidence, not upon personal opinion. Preparing for academic writing is a multifaceted process, involving personal and academic considerations. As doctoral learners are the instrument of their writing, personal preparation is a key component to successful academic writing. Guidelines prescribed by a style guide (e.g., the *Publication Manual of the American Psychological Association*) provide parameters for writing, whereas aspects of style, such as voice and vocabulary, provide the substance of the writing. This chapter will explore the elements of personal and academic preparation for writing.

The Writing Process

What Am I Writing About?

When preparing to write a paper, doctoral learners should ask themselves the following questions:

- What am I writing about?
- What is the purpose of this paper?
- What are the main points I want my readers to understand?
- Who is the intended audience?

The purpose of a paper will shape its formation. A persuasive essay will look quite different from a research paper, so before doctoral learners begin to write, they should be clear about the purpose of the paper. Doctoral learners should consider the goals they hope to accomplish with their papers, and what it would take to accomplish those goals.

While in a doctoral program, the standardized course materials provide the purpose and topic of

many assigned papers. For this reason, it is crucial for learners to read the instructions for the assignment thoroughly. Rewriting each element of the instructions can help to ensure that learners have a clear understanding of the expectations. These notes can be used later to form the paper's basic outline or headings. In addition, the instructions may provide the paper's headings.

Summary vs. Synthesis

When writing an academic paper, it is crucial to have a clear understanding of the purpose of the paper. Is the paper meant to be an analysis, a comparative analysis, a research paper, a persuasive argument, or other form of academic work? Operational definitions of these terms might be helpful:

- Analysis deconstructs material into component parts, offering interpretations and explanations of those component parts (Beaney, 2014).
- Comparative analysis functions to compare and contrast two or more items.
- Research papers traditionally offer a thorough explanation of a given topic.
- Persuasive arguments are pieces that attempt to persuade the reader to align with the author's viewpoint.

A key element in determining what type of paper is expected is having a clear understanding of the difference between summary and synthesis. A summary is a recapitulation of the major themes, arguments, or points from a source. It does not add any new information, but condenses the information presented in the source into a more concise synopsis. A synthesis, in contrast, will link information or conclusions from multiple sources into a new body of text (Solé, Miras, Castells, Espino, & Minguela, 2013). To conceptualize synthesis, think of baking a cake. Each ingredient in the cake is like a summary: It is a small portion of a larger source. The combination of the ingredients creates something new: The final result, the cake, highlights the relevant flavors from the ingredients, and the result is a final product that is more than the sum of its parts. A synthesis is the highlighting of ideas from relevant sources, combined with critical thinking about those sources, and the integration of those concepts into the learner's own words (Mateos & Solé, 2009). When drawing conclusions, making interpretations, or analyzing material, it is crucial to substantiate those conclusions, interpretations, or analyses. A synthesis

is not a presentation of personal opinion; it is an integration and elaboration of source material (Solé et al., 2013).

Brainstorming

Although **brainstorming** typically is conceived of as a group activity, research indicated that an individual working alone produces more ideas than a group of individuals working together (Byron, 2012). Brainstorming as a group practice was developed by Alex Osborn, and the first mention of the word appeared in his book *Applied Imagination: Principles and Procedures of Creative Thinking*, published in 1953 (Goldenberg & Wiley, 2011). Osborn proposed that four rules, or standards of practice, should be observed to encourage positive results in a brainstorming session:

1. Reserve judgment and evaluation of ideas.
2. Quantity over quality—the more ideas presented, the more productive the session.
3. Do not restrain ideas, but allow potentially bizarre ideas to emerge.
4. Seek to improve, refine, and combine ideas in new and different ways (Byron, 2012; Goldenberg & Wiley, 2011).

The same guiding standards of group brainstorming can be applied to individual brainstorming prior to writing a paper. Learners can try the following exercise. Set a timer for 5 minutes, and using whatever method is most comfortable and natural (e.g., pen and paper, word processing program, or whiteboard), record anything that comes to mind. Grammar, spelling, and the formation of coherent sentences should be ignored, as the focus should be on generating thoughts and ideas, no matter how ridiculous or wild. Any judgment or criticism should be withheld, as the brainstorming session is not about generating brilliant ideas that will win Nobel or Pulitzer Prizes; it is about generating ideas and research paths to follow. After the time elapses, or as the initial rush of ideas ebbs, learners should examine the thoughts and ideas written thus far. Can these concepts be refined? Do they align to the purpose and topic of the paper? Can they be improved upon, combined, or modified to serve the purpose of the paper? After brainstorming an initial list of ideas for the paper, those thoughts may be organized into a more coherent format.

Outlines and Graphic Organizers

There are numerous ways to organize content in preparation for writing a paper. Doctoral learners are encouraged to try several methods until they find one that works well and fits their individual style. In the end, the exact method of organization matters less than the fact that the information was organized. Attempting to write a paper with disparate ideas floating in the ether or written on scraps of paper is not practical. Attempting to write a paper with organized ideas and a clear visualization of the paper's structure and end goal is practical and achievable. This section will describe two common methods of organizing information.

A linear outline is a common method of organizing the main points of a paper prior to writing. An outline sets forth the thesis, and lists the major points that will be made to support or prove the thesis. Each major point can be further elaborated upon with minor points and subtopics. A linear outline is a map of an assignment, with a clear path from Point A (the thesis) to Point B (the conclusion). The path between the two points is composed of the major points and subtopics presented to support the **thesis statement**. Major points are the foundation of the paper, as each major point provides support to the thesis and moves the paper forward. Minor points support the major points by adding additional details or evidence from the literature or studies on the topic.

Doctoral learners with learning styles that may not benefit from the linear nature of the written outline should consider creating a concept map. A concept map is a visual tool to aid in connecting the disparate ideas created in the brainstorm session. One method for creating a visual map is to write the topic of the paper in the center of a piece of paper and draw a circle around it. Surrounding the center circle are circles containing different elements related to the topic that should be addressed in the paper. Those supporting ideas or topics are then connected by drawing lines and arrows between the circles. The ideas in the concept map and outline will provide the basis for the research.

Finding Research Themes

A good place to begin writing a research paper is to conduct research by searching academic databases for peer-reviewed articles, scholarly books or book chapters, and academic reports. It may seem

overwhelming to start writing a paper with that amount of information, so it is helpful to find themes within the research studies and literature to guide the writing process. At this stage of the process, themes refer to general keywords, ideas, and categories related to the research topic of the assignment.

The outline or concept map created after brainstorming may prove helpful in determining which themes to search for within the research studies and literature. For example, according to the outline in Figure 7.1, this paper argues that individuals with bipolar disorder are at increased risk for suicide, and should receive comprehensive mental health treatment. Relevant keywords to enter in the search engine may include: bipolar disorder diagnostic criteria; suicide statistics and information, both general and specific to bipolar disorder; specific bipolar symptoms' relationship to suicide risk; and treatment methods, including psychotherapy and pharmacological. By searching for themes and categorizing the paper outline based on those themes, relevant sources can be located easily to support the argument.

Using Rubrics and Word Counts to Guide Writing

If there is a rubric associated with a writing assignment, doctoral learners should use it, in addition to the assignment instructions, to guide the writing process. Instructors will grade according to the rubric, so it is logical to review the rubric before writing to ensure that all required elements are addressed. Learners should look for key words within different levels of the rubric to determine the expectations for the assignment, as well as the difference between an A paper and a B paper. Comparing the rubric to the assignment instructions allows learners to determine a complete set of criteria to meet for the assignment.

Notice in the rubric (see Table 7.1), the highest grade in Row 1 (Introduction) can be achieved by providing an introduction that relates to the paper and contains information that "is intriguing and encourages the reader to continue reading." This tells doctoral learners exactly what they must do to achieve a high score, so it would behoove learners to consider the expectations as they begin the writing process.

In addition to considering the items listed in the grading rubric, doctoral learners should look for the word or page count expected for the assignment. This will provide a range of words or pages expected, which allows learners to anticipate the amount of space and time to devote to each section of

the paper. It is best to attempt to stay within the word range provided for a paper, as instructors differ on their word-count policy. Some instructors hold strictly to the word-count limit, and will stop reading a paper after the limit has been reached. Other instructors will deduct points for going over the limit, but will read the entire paper. Still other instructors will read the entire paper for content and depth of analysis and coach the student on editing. For those instructors, the paramount concern is for learners to thoroughly address the questions asked in the assignment prompt rather than meet a word-count requirement. If learners are concerned about going over a word-count limit, it is always best to ask the instructor about his or her policy. Doctoral learners concerned that they will not be able to meet the word-count expectation are encouraged to go back to the brainstorming and outlining phrase of the writing process to generate more ideas for the assignment.

Read

Before doctoral learners can write a paper, they must read other papers, peer-reviewed articles, and books. The idea that students can pull a quality paper out of thin air without doing the required reading is an urban legend. Doctoral learners should complete the required readings for a particular assignment, and then go beyond the basic requirements to expand their understanding and knowledge of a subject. They should look for additional resources they can use later to support their arguments, as conducting external research is a hallmark of a doctoral learner. Moreover, learners should read in a proactive way; take notes, carefully noting the source with proper citations. Extra work now in constructing APA style citations and references will only save time and effort later, so learners should take the extra time to organize notes and citations. Utilizing all available resources, including the APA manual, DC Network, and the GCU Writing Center will also help leaners save time.

Beyond providing material for research papers, the act of reading serves the dual purpose of expanding a learner's academic vocabulary. Doctoral learners reading the literature in their chosen field will encounter words and phrases unique to that field, and they should take the time to look up unfamiliar words and learn their definitions. Again, extra work in the research phase will save time in the writing phase, so learners are encouraged to spend time understanding the words encountered in the reading.

It Takes Time

Many learners say, “I work best under pressure, so I’m going to wait to start my research paper.” This may be true for 0.01% of students. For the other 99.99% of students, this most likely is a myth they have begun to believe after years of working feverishly under a deadline. Human beings do their best work if they are prepared, take breaks, and do not attempt to finish a 19-page paper in 6 hours. The amount of time it takes to write a paper varies for each learner, but it is safe to assume that it will take hours. It is important for learners to plan extra time in their schedules when completing papers, as it is helpful to finish a paper prior to the deadline. By completing a paper early, the learner has time to submit the paper to TurnItIn, review the report, and make any necessary revisions.

Take Breaks

Neuropsychological research indicated that taking breaks and giving one's brain a rest is invaluable (Ariga & Lleras, 2011). When writing, learners should take a short break and do something unrelated. Ariga and Lleras (2011) argued that one reason learners may start to lose focus on tasks is that their brains habituate to the task, whether it is reading or writing. Habituation is the state of being so used to a task or other stimulus that a person can no longer pay attention to it (Sternberg, 2009). By taking a break from the task and doing something else, learners' brains dishabituate from the previous task. This means they are no longer accustomed to that task, and when they return to it, learners will be able to pay attention to it again. Essentially, their brains have been refreshed. Taking breaks will help doctoral learners return to the paper or their reading assignment with fresh eyes; learners may realize that paragraphs do not make sense, see errors they previously missed, or reach conclusions they had not thought of before.

Plan Ahead

Writing a quality paper takes time, and to give it the time it deserves, it is vital to plan. Doctoral learners should estimate the amount of time needed to research the material for the paper, the amount of time needed to organize that material, how long it might take to create an outline, the number of hours required to turn those nascent ideas into a paper, and the time needed to edit, revise, and proofread the paper—and then double it all. It is safe to assume that this process will take longer than the most

conservative estimate, and by giving ample time to complete the project, doctoral learners can ensure that it will not be rushed.

Becoming an Effective Scholarly Writer

Scholarly writing is not fiction, nonfiction, biography, or any other genre of prose. It is its own genre, with its own idiosyncrasies and general guidelines. A guiding principle of academic writing is to provide clear and concise material that is free of personal opinion and logical in its arguments and presentation (APA, 2010). A primary purpose of academic writing is to clearly communicate the results of a study, experiment, observation, or other form of research (APA, 2010). Academic writing is distinct from other genres of prose in that it is meant to provide a clear understanding of scholarly efforts (i.e., a research study, a meta-analysis, a literature review, etc.). Nonfiction prose, like creative writing, can use various literary devices, such as foreshadowing or abruptly shifting topics; however, the use of these devices in academic writing would be inappropriate and contrary to the purpose of providing a clear understanding of the topic (APA, 2010).

Becoming an effective scholarly writer takes time, practice, organization, and attention to detail. Scholarly writers cannot just write the first things that come to mind and assume a quality piece of writing; they must attend to details of academic voice and tone, vocabulary, objectivity, and consistency with the style of their field. Above all else, however, becoming an effective writer takes time and practice. It is a dynamic process, and being open to feedback provides direction for continued growth.

Developing a Personal Process

The process of sitting down and writing is different for each writer; each person has his or her own unique habits and routines. Some basic logistical ideas for facilitating the writing process include working in a space free of distractions, completing the readings and research before beginning the writing process, keeping reference materials close, and starting with an organized approach to the paper. Doctoral learners may wish to start this process with the brainstorming exercise suggested above, followed by creating an outline or concept map for the ideas generated in that brainstorming session.

As learners sit down to write the body of the paper, they should just try to write. Get the ideas onto

the paper or word processing document first, and worry about editing and cleaning up language and sentences later. Learners can always go back and rewrite a rough sentence into a scholarly masterpiece, but the core of that idea must first exist.

Voice

Academic **voice** refers to the personality of doctoral learners' writing. It should be professional, but also allow their unique style and voice to permeate the paper. The best authors each have a distinct voice.

Doctoral learners should read their writing aloud to get a feel for how it sounds and whether it reflects their voice. Be careful in this arena, as there is a fine line between the expression of one's unique academic voice and the expression of one's opinions. Academic writing, including the dissertation, should not include personal opinions.

Does the writing flow well? If it sounds stilted when reading aloud, it will sound stilted when someone is reading it silently. Sentences that are too long can create a stiff or unnatural voice. In addition, lengthy sentences can decrease a reader's comprehension of the material, as their energy is now devoted to deconstructing the long sentence. Papers should have fluency, which refers to the readability of the paper. A paper with high fluency will contain well-constructed sentences that flow together and create a readable paper.

Tone

Academic **tone** refers to the particular style of a writer's paper that is unique to academia. Tone and voice are related notions in academic writing. Voice reveals the person who is writing the paper, while tone reveals the style in which it is written. Academic tone is not colloquial or informal, and should be both professional and engaging. This means that it should utilize professional language, avoid bias, and yet maintain a tone that is interesting to the reader. Academic writing has long had a reputation for being dull, dry, and uninteresting (Lepore, 2013). Ideally, scholarly work should avoid all elements of that reputation. Lepore (2013) refers to academic writing as "a vast moat of dreadful prose" (para. 6), perhaps referring to some authors' tendency to use jargon and overly dense language. Academic tone does not mean exchanging all monosyllabic words for polysyllabic words. It does not mean heightened obscurity

or elaboration of ideas. Academic tone means establishing a writing style that is **objective**, clear, and precise (Sherlock, 2008). Objectivity and economy of expression are essential elements to consider in academic writing.

Objectivity

Arguments should be presented objectively, and avoid emotional, **subjective**, or judgmental language. “Smith totally missed a crucial piece of data” is not acceptable language for an academic paper; however, “Smith did not address the use of outdated testing material” is acceptable (APA, 2010). The first sentence implies an emotional reaction to Smith’s omission of a particular topic, while the second sentence presents an objective observation that Smith omitted a particular topic from their article. Words that imply a personal belief or judgment, such as, “The sample was rather small” or, “I believe this author was biased in his approach,” represent other facets of subjective language. Words such as *rather* or *believe* imply a subjective judgment, which is inappropriate in an academic work. Academic writing should strive to present objective judgments based in empirical data and devoid of bias.

It is vital that academic writing is free of “implied or irrelevant evaluation” of any group or individual (APA, 2010, p. 70). Writers and researchers must be careful not to allow any biased or prejudiced assumptions or attitudes to filter into their writing. This includes any words, phrases, or terms that could imply bias against a person or persons based on “gender, sexual orientation, racial or ethnic group, disability, or age” (APA, 2010, p. 71). More information about reducing and avoiding bias can be found in the *Publication Manual for the American Psychological Association*.

Although not as crucial for academic writing as avoiding bias, it is best to avoid using first person singular or plural in academic writing. An exception to this guideline is the presentation of a doctoral learner's own research in the dissertation.

While is it not prohibited, it is better to present research as it stands, without including “I” or “we” statements. This allows the reader to perceive the author(s) as more objective (Sherlock, 2008). It is also best to avoid using phrases such as, “This author believes … ," as it adds unnecessary words to the paragraph. It is also advisable to avoid using “one” (e.g., "one might assume this is true, but one must

never assume"). Although an academic writer should aim for objectivity and a certain amount of distance in their writing, overuse of "one" can "torture sentences in unnecessarily passive constructions" (Sherlock, 2008, para. 2). Although use of the first person is not prohibited in APA Style, exercise caution in using first person plural. It is acceptable to refer to a group of which the writer a member, but refrain from using the *royal we*. This may cause confusion for readers, who may wonder if it was a team of authors who created the article, despite the singular name in the byline (APA, 2010).

Vocabulary

Sophisticated vocabulary is expected of academic writing, but this does not mean replacing every word in a document with a longer synonym culled from a thesaurus. Ragins (2012) conducted an informal poll of reviewers for the journal *Academy of Management Review*, asking for their pet peeves in academic writing. She found that the most common source of annoyance was "foggy writing," writing in which the content is obscured by needlessly complex language or jargon (p. 495). As a rule, the use of jargon should be kept to a minimum. In certain types of technical writing, jargon is necessary and unavoidable. For example, the general public might say that gender and sex are equivalent terms, but in clinical psychology, there is a distinction between gender and sex. In clinical psychology research, using jargon to describe gender and sex is necessary (Heppner & Heppner, 2004). However, in most academic papers, writers should avoid jargon, as it can "introduce vague or mentalistic constructs that are not easily measurable" (Heppner & Heppner, 2004, p. 101). It can leave the reader in a state of confusion and frustration, as the ideas the writer has worked hard to express are clouded by needlessly complex words.

In the spirit of avoiding jargon, keep sentences concise and clear. Obscuring a statement with unnecessary words bores the reader and increases the chance that the main point of the statement will be misunderstood. Writers should eliminate unnecessary words, and refrain from using redundant language. It may be tempting to use redundant or overly complex language for dramatic effect or emphasis, but writers should not succumb to this temptation.

Ragins (2012) summarized the reason for this guiding principle nicely when she wrote, "The reader should be able to understand your key points and follow your logic without having to reread the

manuscript" (p. 494). Doctoral learners would do well to recall the number of times it was necessary to reread some of the dense articles or books they have been assigned in order to make sense of them. Did that make for a pleasant and engaging learning experience, or did it require working twice as hard just to comprehend the material? Learners should remember such experiences as they write their own papers. A key concern in writing is to consider the readers of the paper. When writing a paper for a class, although the intended audience is the instructor, treat the instructor as the representative of the academic community and write the paper for that larger audience.

As the intended audience is either a singular member of the academic community or the academic community as a whole, it is best to avoid informal language, which includes colloquialisms and slang. Colloquial language is appropriate for conversations and informal dialogues between colleagues, but it is not appropriate for academic writing. Use of informal language in a paper can undermine the author's academic credibility (Heppner & Heppner, 2004).

Using a Style Guide

Using a style guide allows for consistency across a field of inquiry and research. There are three major style guides in use in academia: APA, Modern Language Association (MLA), and Chicago Manual of Style. APA style was developed by the American Psychological Association for use in psychology and other social science fields, with the aim of preparing manuscripts for publication (APA, 2010). MLA style was developed by the Modern Language Association with the purpose of writing research papers while in school, and is most commonly used in literature, English, and other creative-arts fields (Flores-Kagan & Rider, 2012). The Chicago Manual of Style was created by the University of Chicago with the goal of writing for publication, and is often used by history scholars (Yale College Writing Center, 2014). It is often referred to interchangeably with Turabian style, which refers to the style expressed by Kate Turabian in her book, *A Manual for Writers of Research Papers, Theses, and Dissertations*, first published in 1955. The difference between the two manuals is Turabian style is tailored for students (The University of Chicago Press, n.d.).

The primary difference between the three major writing styles is the citation format. APA and

MLA style follow an in-text citation formation, while Chicago style uses footnotes for citations. APA style is the preferred style for psychology and social sciences, and is common in education. Moreover, it is the required style for Grand Canyon University.

Rationale for APA

Why do universities, journals, editors, and conference planners require writers to adhere to a particular style? A simple question with a simple answer: A single style in a field of study provides clarity and consistency across that field. APA style was created in 1929 to set rules to be followed by the academic community, which would "increase the ease of reading comprehension" (APA, 2010, p. xiii). A consistent style allows readers to find different elements in an empirical article quickly and easily, regardless of journal or year of publication. It provides clarity to students learning how to write research papers, and from the beginning of APA style, the authors and editors of the APA manual have sought to provide clear and consistent guidelines for students and professionals alike.

Paraphrasing vs. Quoting

A direct **quote** is copying the exact words from a resource into a paper and providing a citation that includes the author's name, year of publication, and the page number of the quote. **Paraphrasing** is the restatement of another author's ideas into your own words. When including a paraphrase of another author's work, writers must still acknowledge the original authorship.

Direct quote:

Zimbardo (2007) writes, "If Achilles is the archetypal war hero, Socrates holds the same rank as a civic hero" (p. 462).

Paraphrase:

Just as Achilles has been celebrated as the quintessential war hero, Socrates has also been acknowledged as an exemplary model of civil heroics (Zimbardo, 2007).

The purpose of writing a paper is to explore and defend the writer's ideas, not to quote someone else's thoughts; therefore, direct quotes should be used sparingly. There are exceptions to this rule: If a quotation will add credibility to your argument, or if the original language explains the subject in eloquent

terms that you could not replicate, a direct quotation is acceptable and could enhance the paper. A quotation should not be dropped into a paragraph without explanation or introduction. Plotnick (n.d.) offered a list of common verbs used to introduce direct quotes, "Argues, maintains, states, writes, suggests, claims, points out, insists, demonstrates, concludes, observes, says, comments, counters, explains, notes, asserts, reveals" (section 4). These, and similar words, provide context for the quotation and allow the writer to introduce the author of the quotation. However, learners should exercise caution when using quotations. Paraphrasing material and including proper citations for the paraphrased work is a beneficial practice, as it allows the learner to engage in a deeper understanding of the source material.

Building Blocks of a Paper

Introduction/Thesis

The introduction of a paper should do the following: capture the reader's interest, provide context for the paper, and explicitly state the purpose of the paper in a thesis or topic statement.

Many writers will write the introduction last, after completing the body of the paper. Because the introduction serves to concisely introduce the topic and purpose of the paper, it may be easier to write it after the topic has been explored fully. Consulting the requirements set forth in a rubric can shape the creation of the introduction. For example, the sample rubric seen in Table 7.1 calls for an introduction that relates to the body of the paper, presents intriguing information, and encourages the reader to continue reading.

Capture the Reader's Interest

Academic papers have a reputation for being dull or boring, so an introduction that excites readers and draws their attention can help fight that perception. Writers should avoid starting a paper with a dictionary definition in the opening statement (e.g., "The *Oxford English Dictionary* defines *boring* as … "). This is a cliché that has been overdone by eager high school and college students, and it does not belong at the doctoral level. A better way to start an introduction is to provide a meaningful statistic ("One out of five college students has been sexually assaulted on or near his or her campus"); make a declaration that requires explanation ("Technological evolution is inevitable"); or ask a question ("Why

did the members of the Nazi party commit atrocities?"). Statistics can also provide an intriguing beginning to a paper ("Consider four women that you know well, and then consider the fact that one out of every four women in the United States has been sexually assaulted"). Regardless of the exact method chosen, writers should develop something creative, yet professional, to invite readers into the paper and to continue reading it.

Provide Context for the Paper

When writing, doctoral learners must explain the purpose of the paper to the readers. What is the goal of the paper, and why is it being written? Graff and Birkenstein (2014) offered a method for responding to this question when they advised students to write their papers as responses to "what others are saying" (p. 20). An academic paper is part of a larger conversation, so begin by explaining to the reader why you are writing it. What are others saying about the chosen topic? Is the doctoral learner arguing for or against something, and why is it important that they do so?

> Example:
>
> The genres of science fiction and fantasy have long been labeled nerdy or geeky, and until recent years, these terms have had a derogatory connotation. Science fiction has been dismissed in literary circles as *lowbrow* and *pulp fiction* (Example, 2000, p. 1). However, science fiction novels, comics, and films have contributed to society, not only in propelling research and development in technology, but also in sparking conversations and debate on social issues (e.g., racial equality, socioeconomic gaps, and other valuable social justice concerns) (Example & Example, 2001).

Without addressing why the paper was written, and to what it is a response, the statements will have little meaning. They may be finely crafted sentences, but they will not contribute to the academic dialogue.

Explicitly State the Purpose of the Paper

Writers should tell readers what the paper will analyze and what it aims to prove. In an exceptionally long paper, such as a dissertation or research paper, writers may consider providing a roadmap for the reader.

For example, “In Chapter 1, the merits of Seligman’s theory of positive psychology will be discussed. Chapter 2 will explore clinical applications of this theory.” This is not always necessary. In a shorter paper, the thesis statement alone is a sufficient roadmap.

Body Paragraphs and Sections

The use of headings and subheadings provides structure and clarity in a paper. Headings should include enough information so readers will understand the content of the section. It is essential that the content of the section aligns with the heading. For example, it would be confusing for readers to see the heading, “Methods,” followed by a description of the foundational research on which the study was based. Clear section headings with corresponding content allow readers to follow the flow of the paper easily, and to find significant sections again later. It is helpful to keep each section specific to its own purpose. Do not address multiple topics in one subsection, as this creates confusion and can muddy the flow of the paper. For example, an empirical article is divided into Introduction/Literature Review, Methodology, Results, and Discussion/Conclusion. Researchers would not discuss the methodology in the literature review section, nor would they present their discussion in the methodology section. By keeping each section specific to its stated purpose, the paper is easier to follow.

The use of transitional phrases and words signal to the reader where the paragraphs are going, such as when adding supporting evidence to your argument (e.g., “Moreover, the tenets of positive psychology have clinically significant effects on patients’ moods”); or moving into a different direction (e.g., “However, despite the clinical significance of this theory, the widespread adoption of its interventions is unlikely”).

Graff and Birkenstein (2014) offered a list of common transitions: “moreover, furthermore, in addition, by extension, ultimately, for example, therefore, consequently, accordingly, likewise, by contrast, however, regardless, whereas, nonetheless, conversely, and as a result” (adapted from the list presented on p. 109-110). This is a partial list; there are other words, phrases, and ways to transition from one topic to another. The essential feature of a transition is that it connects the ideas within the sentences; non-sequiturs are usually not appropriate in academic writing. Given the value placed on concise and

clear writing, it is important that each sentence contribute to the overall argument, connecting the new ideas or examples with the previous sentences in the paragraph and setting the stage for the arguments to come in later paragraphs.

Writing the Conclusion of the Paper

To develop the conclusion, writers should reflect back on the analysis or argument, and provide a summary of the most significant points in the paper. If appropriate for the style of paper being written, the writer can offer suggestions or direction for future research. The conclusion can discuss any unanswered questions in the field, and provide support for any suggestions. A solid manner in which to end a paper is to capture key points of the argument, as well as to relate the concluding sentences back to the introduction. This provides a bookend for the paper, which provides continuity for the reader.

Conclusion

The road to becoming a proficient academic writer is long, but it is not without guideposts offering direction. The process begins with personal preparation: allotting the time necessary to complete the work, conducting adequate research, reading the requisite books, studies, and articles, analyzing the literature, and brainstorming new ideas and arguments. Writers differ in their approach to organizing and outlining their ideas, but developing an outline creates direction for an academic paper. In addition, it is valuable to consider the expectations of an instructor or the academic community, as these expectations further guide the process of writing. Style guides and academic writing principals (e.g., reducing bias, objective language, and professional tone) provide additional guideposts. These elements allow a writer to expect consistency across the field, while also providing clear direction for formatting and writing style.

In the end, the exact process doctoral learners engage to write does not matter as much as the act of writing itself and the quality of the product. The act of staring at the blank page, filling it with one's thoughts and ideas, and sharing it with a larger community with the purpose of contributing to the field—that is the goal of academic writing.

Sidebar 1

Voice

The following are excerpts of articles that were published in peer-reviewed journals.

> Whether the post-secondary online teacher mentors, facilitates, instructs, or all of the above, if such a teacher is to guide a community of inquiry, that is mediate a beautiful learning environment, he or she needs to have sympathy with their students, which implies the ability to emotional connect in the way suggested by Holmberg (2003). Though theoretically a distance education teacher could "act" like he or she has sympathy or "act" with immediacy, that is give others the sense that their actions are genuine, without being harmoniously passionate, such behavior would still be congruent with the findings of Carbonneau et al. (2008). The difference would affect the teacher in the long term not the student. Bringing beauty into the discussion of distance education theory requires what Dewey and Bentley (1949) described as a transactional understanding of experience, which moves aesthetics to the center of experience and requires accepting the idea that contexts are comprised of the histories of the participants, their feelings, their decisions in a given learning environment, and consequences those actions bring (Brinkmann, 2011; Girod, Twyman, & Wojcikiewicz, 2010; Kokkos, 2009; Parrish, 2006). The harmoniously passionate online teacher would theoretically not only engender motivation in others to construct meaning, hence producing growth in awareness and understanding, but also help make the online learning environment a beautiful place to be (Greenberger, 2012).

> Another important component of truth for students involves what validates a claim as true. This especially comes to the forefront concerning ethics and what is morally right or wrong. Smith's (2011) data indicates that for the majority of emerging adults "if people believe something to be right, then for them it is right, simply by virtue of their belief. Absent any morally objective standard of moral evaluation anything could be morally right, then, as long as someone believes it" (p. 29). In our postmodern era a personal truth is absolute. During this paper's study,

> informants were asked, “what do you do when another person’s truth is different than yours?” (Appendix B, Research Survey). Eighty-eight percent of students concluded that “they have their truth and I have mine,” 7.5 % selected “we are really saying the same thing,” 14.5% stated “say that they are wrong.” This data coincides with Smith’s findings that two-thirds of participants were not from realists or moral absolutists, and one-third of participants were strong moral relativists. Smith (2011) concludes that undergraduates’ responses are often individualistic and situational, with from “moral commitments jumbled together in confusing statements” (p.31). This has been expressed in the worldview class when students condition their responses by stating that everyone is different and it depends on the situation (Larkin, 2012).

What stands out about these excerpts? Was it obvious that different authors wrote each?

Sidebar 2

Example Introduction Paragraph

What do human beings and cockroaches have in common? Apart from being members of the animal kingdom, both cockroaches and humans are affected by the phenomenon of social facilitation (Zajonc, Heingartner, & Herman, 1969). Social facilitation describes the tendency for individuals to perform better on simple or well-learned tasks while in the presence of others than they would alone (Park & Catrambone, 2007). The presence of others leads to increased physiological arousal, and Zajonc and Sales (1966) observed that increased adrenaline output results in enhanced performance on simple tasks, but has a detrimental effect on difficult tasks. This increased level of arousal allows individuals to maintain a level of awareness regarding their performance, leading to improved performance. The presence of other individuals leading to improved performance has been observed repeatedly in the social psychological literature, but

with the ever-increasing presence of technology in the lives of individuals, an examination of the effect of virtual or fictional humans is appropriate.

This paper will present a comparative analysis of two articles: “Love Makes You Real: Favorite Television Characters are Perceived as 'Real' in a Social Facilitation Paradigm,” by Gardner and Knowles (2008); and “Social Facilitation Effects of Virtual Humans,” by Park and Catrambone (2007). Gardner and Knowles (2008) and Park and Catrambone (2007) both explore the link between social facilitation and the presence of representations of humans (either fictional or virtual). These articles will be compared along the following dimensions: research questions/hypotheses, literature reviews, sample populations, results/conclusions, and limitations. Suggestions for future research will be provided in the conclusion.

Table 7.3
Elements of the Introduction

Elements of the Introduction	*Example*	*Write In Your Own*
Capture the reader’s interest with an intriguing opening statement, example, anecdote, or question.	What do human beings and cockroaches have in common? Apart from being members of the animal kingdom, both cockroaches and humans are affected by the phenomenon of social facilitation (Zajonc, Heingartner, & Herman, 1969).	
Provide context for the paper.	Social facilitation describes the tendency for individuals to perform better on simple or well-learned tasks while in the presence of others than they would alone (Park & Catrambone, 2007). The presence of others leads to increased physiological arousal, and Zajonc and Sales (1965) observed that increased	

	adrenaline output results in enhanced performance on simple tasks, but has a detrimental effect on difficult tasks. This increased level of arousal allows individuals to maintain a level of awareness regarding their performance, leading to improved performance. The presence of other individuals leading to improved performance has been observed repeatedly in the social psychological literature, but with the ever-increasing presence of technology in the lives of individuals, an examination of the effect of virtual or fictional humans is appropriate.	
Explicitly state the purpose of the paper; provide a thesis statement.	This paper will present a comparative analysis of two articles: "Love Makes You Real: Favorite Television Characters are Perceived as "Real" in a Social Facilitation Paradigm," by Gardner and Knowles (2008); and "Social Facilitation Effects of Virtual Humans," by Park & Catrambone (2007).	

Sidebar 3

Learners may find the following checklist helpful when writing papers and their dissertations.

Checklist for Writing a Paper

- □ Compelling scholarly introduction?
- □ Thesis statement?
- □ Body paragraphs that fully address the content required by the rubric?
- □ Solid conclusion that summarizes the main points of the paper?

- □ Did you check your citations and references?
- □ Did you proofread? Did you ask someone else to proofread it for you?
- □ Did you use spell- and grammar-check?
- □ Did you check your formatting?

Final Figures

Figure 7.1: Example Linear Outline

1) Introduction
    a) Context for the paper: The Centers for Disease Control consider suicide a public health concern. It is the third leading cause of death among individuals between the ages of 15 and 24, and the second leading cause of death among those ages 24-34. Apart from the cost of suicide in human lives, it results in an estimated $41.2 billion in medical and work-related expenses (Centers for Disease Control and Prevention, 2014).
    b) Thesis statement: Because of the symptoms related to bipolar disorder, those who suffer from Bipolar I Disorder are increased risk for suicidal ideation and intent. Therefore, a comprehensive treatment plan that includes psychotherapy and medication is essential for those individuals diagnosed with Bipolar Disorder.
2) Background Information
    a) Key terms defined: suicidal ideation, suicidal intent, risk factors for suicide
    b) Diagnostic Criteria of Bipolar I, according to the DSM-V
        i) Spectrum of severity for Bipolar: The level of severity influences the risk for suicide
3) Major Point 1: The unique constellation of symptoms in Bipolar disorder cause an increased risk of suicidal ideation
    a) Lower lows: Individuals with Bipolar disorder tend to have more intense depressive episodes than individuals with Major Depressive Disorder, Bipolar II, or Dysthymic Disorder

b) Higher highs: Individuals with Bipolar disorder experience episodes of mania

i) Describe mania

ii) Describe how manic episodes may lead to a person discontinuing their medications

iii) Noncompliance with medication increases severity of symptoms

c) Biological symptoms and effects of disorder

4) Major Point 2: Psychotherapy is effective for treating Bipolar disorder

a) Who benefits from therapy?

b) What types of therapy are most beneficial for Bipolar? DBT, CBT, group therapy.

c) Present research demonstrating the effectiveness of therapy with Bipolar patients.

5) Major Point 3: Pharmacological treatments are effective in reducing symptom severity

a) What medications have traditionally been used? Lithium, etc.

b) What newer medications have been found to be effective? Present research that demonstrates the effectiveness of medication.

6) Major Point 4: It is the combination of therapy and medication that is most effective in treating bipolar and preventing suicide.

a) Present research that demonstrates this fact.

7) Conclusion

a) Restate thesis

b) Offer concise summary of major points to provide support for thesis

c) Describe any future research questions for this field.

Figure 7.2: Template for a Basic Linear Outline

1. Introduction

    a. Context

    b. Thesis statement

2. Main Point 1—supports thesis and propels the argument forward
    a. Minor point or subtopic provides details and supports Main Point 1
    b. Minor point or subtopic
3. Main Point 2
    a. Minor point or subtopic
    b. Minor point
4. Main Point 3
    a. Minor point
5. Conclusion
    a. Review major points and restate thesis
    b. Discuss any future research or unanswered questions

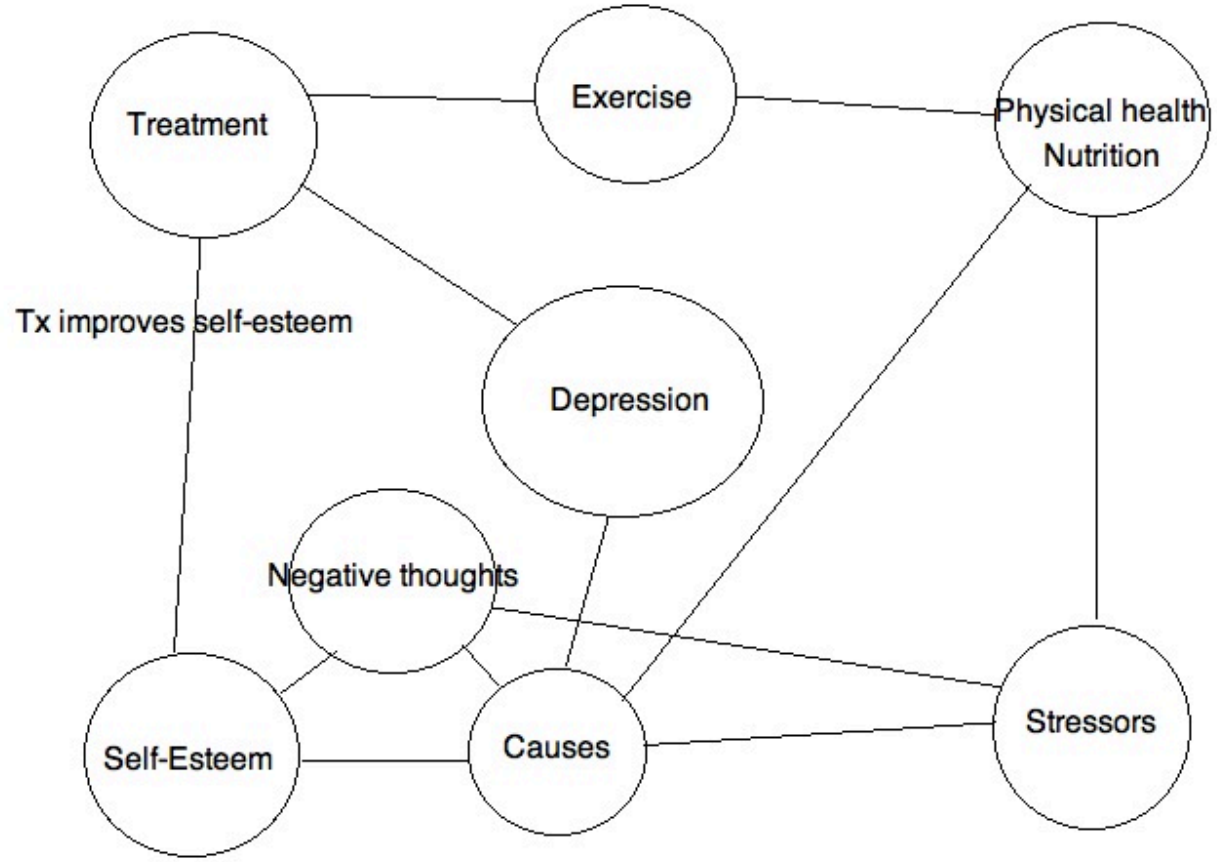

Figure 7.3. Example of a concept/brainstorming map.

In this example, depression is the focus of the paper; treatment and causes of depression are supporting topics. Exercise, physical health, and nutrition are elements related to treatment, as well as stressors. Stressors are in turn related to the causes of depression and negative thoughts. Self-esteem is related to causes, and as treatment is provided, self-esteem improves.

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Chapter 8: Reviewing and Improving Writing

By Dr. Sherion H. Jackson

Introduction

The most common pitfalls for learners as they make improvements in writing and begin publishing their work include the underlying assumptions that proofreading and editing are secondary components of the writing process, that proofreading and editing happen at the end of the writing process, and that this tweaking requires little time. In truth, none of these assumptions about proofreading and editing are true. Sir Arthur Quiller-Couch (1916) described proofreading and editing as "murdering your darlings" (para. 6). While this seems like a harsh term to use for removing or replacing unnecessary wording and sharpening the content focus, many times proofreading and editing do require cutting seemingly wonderful phrases and eliminating content in favor of a more concise and focused topic, making the process a primary component of reviewing and improving writing.

Proofreading and Editing

Proofreading and editing influence content understanding and the relationship of that content to the learner's audience. By allowing the audience to better understand and relate to the content, learners should consider the proofreading and editing process to be a primary, ongoing, and necessary component to add value to their writing, and to be the underlying method of transferring the intended meaning to the audience. For example, when using proofreading and editing to sharpen content and to correct grammatical and mechanical errors, learners can visualize a thick line spiraling and twisting into a clear, thin unambiguous line. The top portion of the line is blurry and wider than necessary indicating that first drafts are often unfocused. The original draft often includes many short phrases that can be revised or even eliminated allowing the piece to maintain the meaning with enhanced clarity. The first drafts also may include many

mechanical and grammatical errors because the learner's attention has been focused on getting the words on paper. The final point at the bottom of the spiral is the revised, finished document and is the precise, intended content—the goal of proofreading and editing. Ormond (2012) underscored the intent to be precise by suggesting that learners should choose their words carefully to communicate the exact meaning, which produces clear and effective sentences.

Without proper proofreading and editing, the content could appear meaningless, unfocused, and irrelevant, leaving the audience with little or no connection to the content on any level. The outcome of the proofreading and editing process for the audience should be cohesive, logical, and understandable coverage of the intended topic. A continual eye toward three issues—cohesiveness, logic, and understanding—could provide an avenue to influence the audience in a monumental manner.

In the past, proofreading and editing were considered to be "checking for errors of grammar, punctuation, spelling, citations, word choice" in order to locate formatting and style, mechanical and language usage issues, and typographical errors (Chromik, 2002, p. 1). According to Davis and McGrail (2009), proofreading and editing have grown into an intense process of not only checking for Chromik's noted errors, but also of identifying with the audience through "literacy that includes writing, [and] higher order thinking," and knowing your audience in an effort to make a firm connection and to have content fully understood (p. 523). To summarize, editing has also become a content revision task and requires the draft to be reviewed with formatting, mechanical, audience, and content goals in mind. Doing all of this is a challenge and requires a strategy, skill, and much forethought and planning. An effective plan that includes proofreading from the beginning of the writing project can add much to the understanding of the piece.

Editing or **self-editing** often refers to improving one's own writing through a series of revisions, enhancements, and the elimination of unnecessary phrases and wording, as well as the routine and cautious use of spell-checker software in order to produce a clear, concise paper or proposal. Simply put, self-editing includes proofreading based on decisions and recommendations reflecting the quality of the project as a whole and questions "whether the work constitutes an original and worthwhile contribution to academic and professional literature i.e., editing for content and not just style" (Maguire, 2008, para. 9).

Proofreading, editing, and content revisions are on-going processes and require skills that are often neither learned nor encouraged as necessary skills in early writing classes. Learners who find that they are lacking in proofreading, editing skills, and overall writing skills should begin immediately to seek resources and develop the necessary knowledge and skills for writing effectively. Learners who begin adding to their proofreading and editing skills early, before such skills are needed, will benefit later by saving time while producing effective and focused writing.

Numerous websites refer to the most common writing errors, but simply selecting and using only one of these lists may not be sufficient for every learner. Reviewing and individualizing these suggestions to create a checklist of specific common writing errors is key to improving a learner's own writing. This provides the learner with an opportunity to list only those errors that align with the learner's particular writing and formatting deficits, and then work on those items directly while proofreading and editing. Developing proofreading and editing skills are beneficial and provide learners with the opportunity to become proficient at editing their own work as they develop into professional researchers.

GCU provides numerous resources to assist in building writing and editing skills. One of the many resources available to all GCU learners is the *Student Success Center* (SSC). Learners may navigate to the SSC from the LoudCloud classroom or by accessing the website directly.

The SSC provides an excellent foundation for self-directed academic help, and contains links to many academic policies and tools which address writing and editing skills. Three sections in the SSC are particularly helpful to learners. The first section being the SSC Writing Center and containing style guides and templates for APA 6th edition papers, as well as links to helpful writing websites. Next the SSC Grammar Success Booster is a self-directed mini-course containing a fully implemented syllabus, outcomes, video and text instruction, and quizzes to check for understanding and skill comprehension. This tool focuses on building competency in grammar. Finally, the Writing Process media piece, while foundational in nature, can be a helpful tool for solidifying the basic overall writing process.

The Center for Learning and Advancement (CLA) is another resource in support of success which is available to GCU learners. The CLA provides additional tools such as peer mentoring, and allows learners to book appointments with tutors for one-on-one support, if assistance is necessary beyond the learner self-directed resources.

The process of proofreading and editing should begin as soon as the writing begins and continue through the final draft. Learners should develop essential proofreading and editing skills well before writing begins. Carefully studying each section within the APA manual, focusing on proper formatting, as well as any instructions for assignments or available resources and rubrics, and reviewing specific templates and guidelines beforehand will provide a foundation for both formatting and good writing. As has been mentioned several times, throughout this text, GCU recommends that learners purchase a hard copy of the APA manual to have on hand while writing papers for assignments and their dissertation.

Learners may find that incorporating the proofreading, editing, and revision processes into their writing on a daily basis includes many daunting tasks, such as setting a daily schedule for these activities, prioritizing activities for effectiveness, and self-regulating and evaluating

progress. When this happens, learners should consider whether it is advantageous to include a peer or two to review the content to enhance the content for better understanding. However, this consideration should not dissuade careful attention to grammar, format, wording, or overall effective writing throughout the writing process. Learners who focus on proofreading and editing for appropriate understanding will see the benefits through time saved later in the final drafts. Developing scholarly writing skills early in the program is critical to successfully writing a high quality scholarly dissertation manuscript that is written at the appropriate level for publication.

Using a Peer Reviewer

Peer reviews can be different processes depending on the level and purpose of the review. In many instances, a peer review can be beneficial as a form of proofreading and editing, but not in all cases. Beginning learners often call upon a friend or another beginning learner to review the quality, formatting, and effectiveness of the writing. As learners develop, they may seek more experienced peers from within the discipline or profession to review a possible journal article for direction, focus, and contributions to the discipline.

The first encounter a new learner may have with a peer review could be an informal request for a friend, classmate, or co-worker to serve as a peer reviewer to proofread and edit a writing piece such as an assignment. In this case, the learner would utilize the peer as another set of eyes and expect that the peer assess the piece by reading thoroughly and pointing out grammatical, mechanical, or minor word usage issues, which the learner would then revise in the final draft. The peer might also reciprocate by requesting a review for his or her own writing. This process will certainly benefit both parties, but may not fully address the proofreading or editing issues within the work since neither peer may be a skilled peer reviewer. The main purpose of this peer review, in this case, would be to catch any glaring errors or minor revisions in wording.

In the next encounter with a peer review, the learner might seek a more experienced peer who is proficient in the discipline topic or within the profession who could provide an overview and suggestions for improving the quality and merit of the writing. In this scenario, the peer could be a professional colleague, a university instructor, or a subject matter expert. Experienced peers within a discipline or profession generally understand the topic challenges, and have a good foundation in the theory and sources supporting these topics. This level of peer review can be helpful in evaluating whether the writing is concise and effective for the discipline, as the peer may point out areas needing extensive revision to meet discipline-specific or professional needs for further information. The purpose of this peer review would be to review the content for quality, relevance, scope, and merit, as well as pinpoint writing and mechanical errors for revision.

At a higher level of peer review, academic journals, conference proceedings, and, more recently, some professional books are peer reviewed by two to five preselected and highly experienced peers as a final preparation for publication. In this encounter with a peer review, the learner would submit work to the journal, conference editor, or publisher and receive written comments from all of the identified peers. These skilled peer reviewers have extensive knowledge and scholarship in the discipline and profession surrounding the topic and will be skilled in proofreading and editing for errors that affect the understanding of the content area. The comments will include instructions for further revised submissions of the work by noting whether the piece is *acceptable as is*, *acceptable pending minor or major revisions*, or if the work is *rejected*. Peer comments are often focused on editing required to bolster merit, quality, and relevance of the work, and may also contain limited mechanical, grammatical, and formatting revision information. It is not unusual for learners whose work is deemed *acceptable pending revisions* to submit three or more follow-up revised drafts before the work reaches the

acceptable as is level. New learners often find this process discouraging and end the submission process without reaching the *acceptable as is* level. Learners who persevere can achieve the *acceptable as is* level for their work and learn a great deal about the content area and peer review and editing process. The major focus of this peer review is to advance the quality and depth of the work and add merit and relevance for professional colleagues before the work is published.

In the first two encounters with peer reviews noted above, learners may search for and have the opportunity to select a peer. This task should not be taken casually if the learner is sincere in improving the draft. Pursuing the most qualified peer will be a benefit in the future if the new learner uses the peer's proficiencies as a learning experience and trusts that the selected peer has proofreading, peer review, and editing knowledge beyond the new learner's own skills and experience. In this situation, the peer should have general skills related to grammar, word usage, mechanical, and some formatting issues, and a similar background in the topic. Peers lacking in these essential editing skills or who have limited content expertise will not be as helpful to new learners.

One final note of caution: Working within the peer-review processes can be difficult at times, especially if friends or co-workers agree to serve as peer reviewers, because emotions tend to enter the equation and personalities may collide. Telling a friend or having a friend indicate that the draft is poorly written or that there are numerous grammatical or mechanical issues can result in fewer friends or annoyed co-workers. A learner may also decide to have a less familiar person proofread and edit the writing, but selecting and working with any of these persons should be considered a professional endeavor in order to avoid frustrations and complications. Learners may find it frustrating and confusing to learn that their writing style and/or level of writing is not at the level required for scholarly writing. This may become apparent during the feedback for assignments and early dissertation process. Accepting this early feedback and

working to develop the skill that the feedback suggests will begin to prepare learners to view their own writing style and level as a work-in-progress. Learners who view their own writing in this manner and accept requested revisions and feedback from peers, faculty, and chairs gracefully will find that their writing will improve immensely throughout the process.

Using a Professional Editor

The decision to use a professional editor is a multilevel decision, and can result in excessive cost to the learner. If the learner has not edited content for clarity and conciseness, this high-powered proofreading and editing process can change content or move the content in an unintended direction. For these reasons, learners should focus on self-editing early on, leaving the selection and use of professional editor to the final stages of the dissertation process.

Professional editors are plentiful when searching the Internet, but finding one who is highly skilled, is knowledgeable in the discipline and formatting, and understands and works well with the new learner can be somewhat overwhelming. The professional editor's job is to proofread, edit, and assess the quality, merit, and relevance of the work formally and to suggest changes that will improve the quality of the piece. A professional editor can help to ensure content will be better understood and properly aligned with the requirements of the discipline, formatting style, and publisher. Some professional editors are skilled and experienced in all required areas—others are not.

Professional editors should have a deep knowledge base of formal English including grammar, spelling, and **mechanics**; adept writing skills including a solid understanding of sentence structure, paragraph organization, and smooth transitions; a familiarization with all current formatting styles; and experience in the specific university or institutional requirements for editing, formatting, and style. Some editors may also possess solid content knowledge, which is beneficial to the new learner. The professional editor must convey the need for perfection in

all editing areas. It is the new learner's job to seek out an editor who is highly skilled and experienced, discuss levels of editing including checking references, and request pricing and charges for additional rounds of editing. Learners may even request a confidentiality agreement of a professional editor if the editing consists of a dissertation study. Although this may sound like the perfect solution to the overwhelmed new learner, using a professional editor can also have a downside.

In deciding to use a professional editor, the new learner can also be making a clear decision to surrender a degree of freedom in the direction and content of the work, and the words used to convey the intended message within the work. Professionally edited drafts may take on a new direction and may begin to convey an unintended meaning. New learners can address this challenge by using a professional editor in the final stages, and by becoming familiar with the professional editor and the levels of editing offered by this editor. Then the learner should determine which level is appropriate for the work.

Turnitin and Plagiarism

Plagiarism is a tricky subject for new learners and one that requires diligence to address as revisions occur. In simplest terms, plagiarism is the act of copying someone else's thoughts, ideas, and writings, and in some manner, whether directly or indirectly, indicating that those thoughts, ideas, and writings are the learner's own. Plagiarism is often referred to as stealing the written words and ideas of another and passing these words and ideas off as belonging to the current author. Federal copyright law and state statutes have attempted to address plagiarism by assigning ownership to the original author. This classification often appears vague, thus highlighting the current storm of plagiarism issues. Only high-profile instances of plagiarism seem to make it into the court system and with only a few violators being held accountable through this venue.

It is left up to the learner to hold high ethical standards, screen his or her own writing for plagiarism, apply appropriate formatting to avoid the perception of plagiarism, and continually monitor the appropriate regulations and laws for any additional limitations in order to avoid plagiarism and the corresponding ethical issues resulting from plagiarism. Although new information regarding the types of plagiarism and outcomes of plagiarism issues dispel the previous one-size-fits-all mentality for the penalties of plagiarism, many new learners find that their professional integrity and ethical presences are tested with even minor-level plagiarism issues.

With plagiarism on the rise over the past several years, studies have been conducted to address the differing types of plagiarism. The Plagiarism Spectrum (Turnitin.com, 2012) study, conducted by one plagiarism software company, found there were several types or levels of student plagiarism. In this study 879 secondary and higher education instructors were surveyed regarding different types and levels of plagiarism. The results were defined as 10 descriptive levels of plagiarism and the severity of each. Of the ten descriptive levels, new learners may find that the struggle is most likely with these four:

- Cloning—copying word for word. This might consist of using the exact wording written by another author or copying and pasting a sentence, paragraph, etc. into the learners own work.
- Remixing—improper paraphrasing. Learners who change or swap a word or several words within a phrase or a sentence, such as by using a thesaurus, which captures exactly the same meaning of these words, will find this to be a plagiarism issue under this description.

- Mashup—many source quotes mixed together. An example of a mashup might be the intermingling and blending of phrases from several sources to create a sentence or paragraph.
- Hybrid—including the source in the references section but omitting the in-text citations. Since the references listed under APA style are an extension of the citations within the content, all citations must be listed in the reference list and all items listed in the references list must be represented with a citation. (American Psychological Association, 2009, p. 174).

Learners who are familiar with all 10 levels of the spectrum and are able to recognize the levels in their own writing will be better equipped to address and eliminate all plagiarism from drafts. The Plagiarism Spectrum is just one tool that can be used effectively in combatting even simple plagiarism.

Style manuals can also be applicable in preventing plagiarism (Galvan, 2006). The APA manual addresses various types of plagiarism through citation and referencing examples. The APA manual sets a high standard for both quality and formatting. Consistent use of APA formatting provides reliability and a sense of trust in the writing. Formatting can address plagiarism by ensuring that the original author is given credit and allows learners to better understand and locate primary and secondary sources cited in other sources. Learners who refer to and understand the APA manual can avoid most common plagiarism issues.

Another tool that learners can utilize to help locate, define, and eliminate plagiarism at any level is a plagiarism software program. Programs, such as SafeAssign, Grammarly, or Turnitin (TII) are effective in both pinpointing plagiarism issues and guiding learners in areas that need revision. TII submission is required for all doctoral course assignments and provides information regarding the direct phrase that has been plagiarized, the source or website where

these phrases can be located, and a percentage from one location and total percentage compared to the word count. Phrases that are over-used or have become cliché are sometimes identified, and learners should steer away from utilizing these type of phrases. References lists, citations, and quotes may also pose an issue within the reported TII percentage and learners will want to discuss TII percentages and options for addressing TII issues with their chair early in the process to avoid any challenges or issues a high TII report score might present. Reviewing the TII component and incorporating the chair's preferred policy will be advantageous to a smooth and timely completion of the dissertation process.

Learners who use citation tools should be cautious because many of these tools do not align properly with the current APA manual. This may lead learners to make formatting and plagiarism errors. When using TII or other software to avoid plagiarism, learners should discuss TII report expectations with the instructor or chair, submit assignments and papers to TII early, thoroughly review the TII report for areas to revise or improve, and revise the draft accordingly before submitting.

Conclusion

Learners are fully responsible for reviewing and improving their written work utilizing a thorough, structured proofreading and editing process. This can be an overwhelming task if the learner has limited skills in revising and does not plan for the tasks to be completed. Learners building a plan for these revisions should make deliberate decisions regarding who will proofread and edit, and when editing will occur in the writing process. Learners may find that a combination of one or more of the options and tools available to support reviewing and improving writing are necessary to fully address errors within the draft document.

The tasks within the plan should include directly addressing plagiarism, which is often the result of carelessness, time pressure, laziness, and/or lack of knowledge and skills. As noted

earlier, there are several programs that can check for plagiarism, but it is more effective to understand the effect of plagiarism and deliberately avoid plagiarizing and **self-plagiarism** as often as possible in any writing situation. Plagiarism can be avoided from the beginning of the work if learners apply the APA manual format, are cognizant of plagiarism challenges, understand that writing consists of revising and rewriting, and ensure that time for rewriting is in the plan for reviewing and improving writing.

Any plan developed for reviewing and improving writing should include plenty of time for revising, editing, and rewriting. This means beginning the writing project well before the deadline to allow for the editing and rewriting of each paragraph before moving forward to the next paragraph so content focus will be apparent to the audience. Allowing time may mean writing an outline and following that outline throughout. A plan could also contain tasks for final reworking and rewriting of the entire work.

Improving writing is an on-going, growth process for learners and should never be considered fully accomplished or completed, because learners can always learn or expand skills and knowledge for reviewing and improving their own writing. Writing, learning, editing, and rewriting is the key to effective writing. In an interview with famous authors, one university librarian (Meeker, 2013) suggested that best-selling author Richard North Patterson was on target when he commented on writing and revisions: “To fall in love with a first draft to the point where one cannot change it is to greatly enhance the prospects of never publishing.”

Sidebar 1

Time Savers: Six Questions for Self Proof-Revising

Want to proofread and edit your own work? Then ask yourself:

1. Do I have the skills? If the answer is no, get busy and review the APA manual, English grammar textbooks, and websites such as Purdue University's OWL. Learning about correct formatting, grammar usage, and mechanical issues will save you time when it comes to proofreading and editing.
2. Who or what can help me? A second set of eyes can be helpful in catching those pesky errors. Think about swapping documents with a friend for some weekend editing. When available, templates, rubrics, and all guidelines will come in handy and cut editing time by at least a third. So read and use the templates and guidelines provided to save time while proofreading and editing.
3. Have I waited too long to begin proofreading and editing my document? The length of the document will determine this timeline, but you can never begin too early. Proofread and edit as you go. Waiting until a long document is completed will not be time effective and will cause you to miss common errors in your haste to meet a deadline. Allowing a few days between writing and proofreading will help make those errors stand out on the page.
4. Should I read the document for specific errors during one read-through? Remember that there will be various types of errors; grammar, usage, mechanical, in-text citations, and others. At least three full read-throughs looking for just one issue during each read-through, such as mechanical issues or grammar issues, should be the standard, with more read-throughs required if there are numerous issues.
5. What is the best way to read through my document for errors? Find the way that works for you and provides thorough results.
    a. Some proofreaders and editors like to read the piece aloud. This slows the process down and allows more time to review each sentence for clarity and errors.

b. Other scholars like to use a print out and then make notes on the paper copy. This makes it easy to keep track of revisions by marking through those notes as corrections are made.
c. Most editors find that taking it slow works best in either case and reduces the number of read-throughs required to catch all the errors.
d. Some proofreaders like to edit by reading backwards—from the end of the document to the beginning. This likely will point to necessary revisions in the structure of the work. See if this technique works for you.

6. When should I focus on proofreading and editing the citations and the reference list? Copying the citation or reference format suggested online does not always provide the current or correct formatting since different disciplines often call for different formatting. Proofreading and editing citations and references should begin when you begin writing. This will come naturally if you have developed the skills as noted in No. 1 above. Many authors have finished a piece only to find that they must now relocate all of those sources used within the piece. This can add hours to your proofreading and editing.

Sidebar 2

Developing an Editing Plan

Learners can easily develop a plan by beginning with the deadline—either an internal or self-imposed deadline as required of doctoral learners, or an external deadline required for assignments or publishing—calculate the number of days from the present time to the deadline. For longer writing projects, divide those days into cycles for four or five revision opportunities and allow the final two days of each set for reviewing and improving writing while using the remaining first days of the cycle for writing the draft. This allows for four or five full read-

throughs and revisions. If decisions have been made to use peer reviewers and/or a professional editor, learners will want to build in extra editing timeframe for those processes. For example, a final draft that was assigned on June 2 with a due date of June 30 would have 28 days for writing and revisions. That equates to four cycles of 7 days in each cycle with the final two days of each cycle for editing. It is not uncommon to extend the length of the cycles for larger writing projects such as dissertations in order to allow for two to three weeks for editing purposes.

The first cycle might include the writing of the first draft and decision making regarding how and when editing will take place, as well as who will do the editing. The second through fourth cycles would include the implementation of editing and rewriting of the draft. Cycles 2 and 3 might incorporate a peer review or professional editor as tools to ensure that four cycles would be sufficient to accomplish the tasks of proofreading and editing. Since the learner bears the entire responsibility for the final intended content of the piece, the fourth or final writing and revision cycle requires a learner's full attention to minute details and completing the writing and editing cycles.

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Chapter 9: The Doctoral Journey

By Dr. Michael Berger

Introduction

In this chapter, doctoral learners will find strategies for success during the beginning of the program and explanations for a number of resources and support systems that GCU makes available to all learners. Learners are also given a look at what lies ahead in their doctoral programs, mapping out how dissertation development is embedded throughout the conventional course work as well as providing a high-level overview of the dissertation process after learners are assigned committee members in the third year of the program.

Engaging as a Doctoral Learner

The leadership of the College of Doctoral Studies has decades of combined experience working with doctoral learners, and the one element that best predicts whether a learner will complete his or her doctoral program successfully is the learner's level of engagement, especially in the early courses of the program. Examples of this include engagement in the doctoral journey, engagement with faculty, engagement in the classroom, and engagement with support opportunities and resources. GCU has a number of opportunities, tools, resources, and support systems to encourage and enable a high level of learner engagement.

- **Doctoral Faculty**: GCU's faculty have doctoral degrees from regionally accredited universities and teaching experience at the graduate level. All instructors have continuing research interests demonstrated through scholarly publications and/or presentations. The faculty member should be the first point of contact for questions about course content, readings, assignments, discussion questions, or anything else related to the scholarship or curriculum of the program.

- **Enrollment Counselor**: GCU's Enrollment Counselors are highly knowledgeable about the various doctoral programs as well as the systems and resources used in the online delivery of education at GCU. During the first class, they are a great place to direct questions about all elements of the doctoral program, from concerns about how to access the student portal to questions about how to submit an assignment in LoudCloud.
- **Student Services Advisor**: The Student Services Advisor functions as both an academic counselor and a financial aid resource. During the second course, learners' primary advising contact transitions from Enrollment Counselors to Student Services Advisors. Similar to the Enrollment Counselor, Student Services Advisors are a great contact for assistance about the systems and resources of GCU. Given that the doctoral journey is at least three years, the odds are that a learner's Student Services Advisor will change during his or her time in the program. GCU will inform learners of the change when this happens. What is important is that all learners are assigned to a specific advisor who knows their situation. They are not just dialing into a call center or going to the next available representative for advising.
- **Center for Learning and Advancement**. GCU provides a variety of support services for online students through the Center for Learning and Advancement. Previous chapters have provided a lot of information about the level of writing that GCU expects doctoral learners to develop. Many learners have been out of school for years by the time they return to their doctoral programs, so some assistance in remembering and rebuilding writing skill is expected. The Center for Learning and Advancement provides excellent tutoring services in the form of self-directed study resources and one-on-one review sessions for learners that need some assistance. Later in the program, the Center for

Learning and Advancement can also provide some assistance in dissertation document review as well.

In addition to the specific resources listed here, learners who take an active role in their education and seek more information about their program are engaged. Learners who connect with their faculty, fellow learners, and the college support staff are engaged. Learners who are passionate about a research topic and independently looking ahead to the dissertation process are engaged. This high degree of engagement is essential to successfully completing GCU's doctoral journey.

Doctoral Community Network

A great resource that GCU has created to assist doctoral learners on their journey is the Doctoral Community Network, also called the DC Network. It is a web-based scholarly network to which all doctoral learners gain access during the second course in their program of study. This online scholarly community is separate from LoudCloud, GCU's learning management system. LoudCloud is a digital approximation of the classroom, where discussion, assignments, and instruction focus on the learning outcomes of the current class, and where learners interact with a specific faculty member and the small group of learners who have also been assigned to that classroom. The DC Network is the digital equivalent of the rest of the building. It is the hallway outside of the classroom where learners from different classes meet and engage in quick chats about their research topics or recent discoveries. It is the graduate student lounge where learners from all stages of the program can connect, interact, and collaborate, and those in Years 2, 3, or beyond can give advice and tips to those in the early stages of the doctoral journey. It is a variety of small personal meeting rooms where learners in the dissertation phase meet to communicate regularly with their committees about the current state of their dissertation research.

Through extensive monitoring of usage and feedback regarding the DC Network, GCU frequently updates or modifies the system and its contents to provide the best possible experience, resources, and support. College of Doctoral Studies surveys have shown learners who are heavier users of the DC Network during the dissertation process experience significantly lower feelings of isolation. A survey of doctoral learners regarding the DC Network found that:

- 75% indicated it helped with their research and dissertation;
- 53% indicated that it helped complete their program of study;
- 86% felt it connected them to the College;
- 77% felt it connected them to other learners in their program; and
- 79% stated that it enhanced the overall doctoral experience (Berman & Radda, 2012).

While the DC Network is a useful tool for working on research-related course work, it is the support that it offers during the dissertation process that makes it effective. It is just one of many dissertation resources that GCU makes available to learners and their dissertation committees.

The Dissertation

The dissertation is the defining element of the doctoral journey as well as one the most respected achievements in academe. New doctoral students often hold the dissertation in equal measures of fear, awe, and excitement. At GCU, the primary goal of the integrated dissertation process is to remove the fear, demystify the awe, and leave the excitement untouched. To achieve that goal, the College has broken up the intensive and often complicated work of building a dissertation into manageable pieces integrated throughout the curriculum.

Dissertation Process and Timeline

The dissertation is a lot of work. According to the National Science Foundation (2014), average students in a doctoral program in the United States take approximately seven years to complete their dissertation. The reasons for this are varied, but a common one is that in many

doctoral programs the dissertation work is not started until after the course work is completed. These doctoral students do not fully begin the process of writing their dissertations until two to four years of conventional course work is completed. Writing a book of completely new scholarship and research is a major undertaking. In addition to integrating the dissertation process throughout the curriculum, the process of getting to the formulation of a research plan and design has been broken down into a series of steps and milestones that gradually builds research skills and scholarly knowledge. This gradually building, scaffolded process, in which each dissertation step builds on the content developed during the previous step, will make designing and executing the research and writing of the final dissertation manuscript much easier.

Dissertation Committee Roles

As there are many pages of original scholarship that need to be created, learners must become strong researchers and scholarly writers to be successful in the dissertation process. The jump from prospectus to proposal is quite large; however, the learner does not have to complete that step alone. The second step toward the goal of a fear- and confusion-free dissertation is the formation of a knowledgeable and helpful dissertation committee.

The **dissertation committee** works as a team to advise, guide, and assist the learner in the completion of a dissertation. By the time the committee is assigned in the first dissertation class, learners are building up to an initial draft of the proposal. In the College of Doctoral Studies, each dissertation committee consists of three members: a **chair**, a **methodologist**, and a **content expert**.

The committee will be populated with knowledgeable terminally-degreed faculty members who have experience with scholarship and publication and have been trained on the policies and steps in the College's dissertation process. These committees are a great asset that

will provide learners with essential guidance and direction, but they are not in charge of the dissertation; the dissertation is the learner's responsibility. Ultimately, the learner writes the dissertation, not the chair, not the other committee members, and not the College. So what do the committee members do, and how do learners and their various committee members interact most effectively (see Figure 9.1)?

Dissertation Milestones

In order to help learners successfully complete their dissertations, GCU has developed a set of **milestones** to guide them from the start of the doctoral program to completion of the final dissertation manuscript. These milestones generally fall into two groups. The first group is embedded throughout the curriculum during the first two and a half years of the program. The second group starts when the committee is assigned during the third year and covers the many steps of writing, iterative review, and approval that take the learner and his or her committee through to the final signature on the dissertation. The milestones for the first group vary depending on the program, as the PhD, DBA, and EdD programs have different courses. This media piece provides an overview of the first group of milestones, which courses the dissertation milestones occur in, and where dissertation documents are introduced and finally submitted for each program of study.

At the end of the first group of milestones, regardless of the program, the GCU doctoral learner should have a full committee, a completed and approved Prospectus, and an initial draft of the Proposal. The second group of milestones takes place in the dissertation classes, all of which have a 900-level course designation. It does not matter in which program a learner is enrolled. All programs in the College of Doctoral Studies follow the same milestones and the same dissertation process as described in the "Dissertation LifeCycle."

For learners who are just completing the first course in their doctoral programs, the dissertation can seem far away; however, GCU wants all learners to understand: Dissertation begins Day 1. This is a motto often repeated to new learners entering the program. While learners are not asked to start writing their dissertation that early, one can see in the Doctoral DNA and the dissertation milestones that learners start building the foundation of their dissertation right away and get a significant start on formulating their research plan during their conventional course work. For instance, the previous modules on the essentials of research and critical thinking in this course were part of that foundation and will allow greater skill development in later courses. The hope is that this early start enables the dissertation to be more about the excitement, and less about the fear.

Conclusion

The doctoral journey is a long one. GCU has created programs that offer the opportunity to complete this journey in as few as three years, but many learners will take longer than that. This is completely normal, as every doctoral journey is different. The essential nature of the dissertation is the creation of new and unique research, something that has never been done before. Each learner has a unique committee, a unique literature review, a unique research population, which all lead to the creation of a unique book. Completing this is not a race toward a goal, but a slow and steady climb up a mountain. The point is not to get to the top as fast as possible, the point is only to get to the top through whatever means or route is necessary.

CDS EBOOK MEDIA MATERIALS

Doctoral DNA Walk-Through Video Script:

Hello, and welcome to the Doctoral DNA walkthrough. The Doctoral DNA website examines all the key elements of Grand Canyon University's doctoral programs at a high level and how they are

integrated to make a unique and exciting doctoral experience. This video will provide an overview of the main parts of the Doctoral DNA site and a brief discussion on its program-specific contents.

The home page, located at www.gcu.edu/dna, offers a brief welcome and specific links to each of the existing programs: the EdD, the PhD, and the DBA. The navigation bar at the top, which maintains this position even when you scroll, also can be used to access the information about each of these programs. Using the navigation bar, let's go to the “About” page.

The “About” page is a great place to start if you are interested in how the Doctoral DNA came about or the impetus behind its development. At the top, a graphic representation of the DNA “concept,” and how it links key concepts (such as academic support, course work and curriculum, research and knowledge skills, assessment, and dissertation artifacts) across all the years of your program. Scrolling down, you’ll see a brief message from the dean, as well as an additional description of the key components of the Doctoral DNA. Using the EdD program as an example, let’s move on to the DNA itself.

The EdD DNA page loads with an animation, an executive summary of the DNA components, and an invitation to "Enter DNA." Clicking “Enter DNA” allows you to select the bars to navigate directly to a year-specific synopsis of these four key items: academic support, course work and curriculum, research knowledge and skills, and research artifacts and assessments. Click on the appropriate bar to access the summary on how this year in the doctoral program, in this case Year 1, make use of key doctoral DNA elements. Scroll down the page for further information on each these key elements. To read the summaries for each of the key items through all 3 years of program information, you can navigate using the "next" and "previous" arrow buttons. Click on the “close” button to close the summary window.

Now let’s scroll down the page to examine the components in greater detail. The Program Design Principles are high-level vision guidelines used during the preparation of all GCU doctoral programs.

Next up is Academic Support. Here you can see a summary of some of the innovative ways that we at GCU work to support our learners throughout their doctoral program, beyond what is included in the course work.

The Courses section provides a high-level summary of the course work for each year. For instance, with the “Year 1” tab selected, we see that the materials are designed to be highly structured. They will push you to challenge your assumptions and consider other viewpoints, and our faculty will work to model scholarship and provide extensive feedback. Below the summary is a list of the courses you will take during that year. Click the tabs marked “Year 2” and “Year 3” for information about the other program years. If you want more information about the programs of study, such as full course descriptions, click the link below to visit the Programs of Study website. Also available is information on financing your education. Click on the link to visit GCU's Tuition and Financing web page.

Farther down is the Research Knowledge and Skills section. Research is, of course, an essential part of the doctoral experience. A high-level overview is provided, as well as the general research competencies designed into the course work. Click on the “Year 2” and “Year 3” tabs to learn more.

Lastly, the Research Artifacts and Assessments section explains the dissertation experience—the key artifact that defines the doctoral journey. This section gives an overview of the research progression and the dissertation milestones and artifacts embedded through your doctoral program here at Grand Canyon. Clicking through the three "year" tabs provides the simplest example of how the dissertation is integrated throughout the program.

Looking back up at the navigation bar at the top, the PhD and DBA pages follow a very similar format. If you are interested or enrolled in these programs, be sure to navigate through those pages. At the bottom of the page here, and at the bottom of the PhD and DBA pages, is a link to the Dissertation Lifecycle media piece.

The Dissertation Lifecycle provides a more in-depth view of the dissertation experience. GCU groups related steps in the dissertation process into what we call “Milestones.” By clicking on a Milestone, you can see more details on the steps that are included in each Milestone. This gives a more

comprehensive summary of the dissertation journey as well as provides information about the structure, support systems, and revision points that we at Grand Canyon have put in place to help you be successful. The arrows on either side can be used to navigate forward or backward along the Milestones. This higher level of detail is not as important at the beginning of your journey, but you can see how we take learners from a Research Prospectus and Proposal draft all the way to the final document. These milestones occur independently from specific course work, so they are equally applicable to the PhD and DBA learners.

I encourage you to take some time and review each of the sections of the Doctoral DNA and Dissertation Lifecycle in detail. The most successful doctoral learners are those who prepare in advance and learn all they can about what is to come.

DC Network Walk-Through Video Script

The Doctoral Community (or DC) Network is a unique virtual community of scholarship created to support doctoral learners here at Grand Canyon University. LoudCloud, the learning management system used by GCU, is a great place to complete your course work; but the College of Doctoral Studies wanted a space that would allow learners to develop real scholarship. This development can take longer than eight weeks to cultivate, and often requires conversations and collaborations with more than just members of your current class. For these reasons, we developed the DC Network.

This video will give you a short walkthrough of the important elements of the DC Network and provide an overview of how you can connect with other learners, faculty, and alumni quickly and easily once you gain access to this system.

In order to access the DC Network, go to dc.gcu.edu. Once your account is active, you will log in using the same username and password that grants you access to other GCU systems, such as the Student Portal and the GCU library. Each doctoral learner's account is activated early during his or her second course in the program.

Once logged in, the DC Network home page will load. Across the top of the home page are five navigation boxes: Research/Dissertation, EdD Community, PhD. Community, DBA Community, and

DNP Community. The doctoral program pages collect a variety of resources focused around the needs of each individual program. To see an example of a doctoral program page, let's click on the EdD.

The left-hand column of the page lists a series of convenient links and resources important to every program. Farther down on the left are links that will display all the learners and faculty associated with the program, which is a great tool to find and connect with other like-minded scholars.

In the center, a link to the EdD section of the Doctoral DNA site appears. The Doctoral DNA provides a high-level summary of the important elements in each program. Below the link to the Doctoral DNA website are posts and questions specific to the doctoral program. Clicking on the title of the post will take you to the text of the post as well as the replies. Use the "Home" button at the top of the frame to navigate back to the program's page.

To the right of the link to the Doctoral DNA is a list of program-specific news, usually posted by the program chair. These posts are accessible also by clicking on the "EDD News" link at the top of the frame. Just to the right of the "EDD News" button is the "Documents" button, which links to program-specific dissertation documents.

Let's go back and explore the resources on the DC Network home page a bit before moving on. The left column contains links to recently posted resources and presentations. Scrolling down a bit we come to the "Scholarship—Celebrating Success" section. This area has posts that promote learners who successfully complete proposal or dissertation defenses.

Moving back to the top, the center column is focused on communication. At the top is a featured announcement, often a video. Below that are other announcements posted by college staff, which is a great place to keep up-to-date on changes, college updates, and new opportunities. Scrolling down farther, there is a list of the most recent blog posts by college faculty and staff. Blogs occur more often than announcements and cover a wide variety of topics. Below the recent blogs, the most recent forum posts are displayed. Forum posts can be created by anyone and are usually started by learners. The forums are where you can discuss research ideas with others, get advice from faculty or alumni, trade Literature Review resources, or just check in with a friend from a previous class.

The right column of the home page offers a link to the Doctoral DNA website and a college calendar, which shows upcoming events, such as dates for revision or submission, college events, or due dates for conference or journal submissions. Details of the events and due dates noted in the calendar appear in the section below the calendar.

Going back to the top again, let's click on the "Research/Dissertation" button. This page is full of resources that will become increasingly important as your doctoral journey moves into its second and third year. Here you will find information about GCU's Institutional Review Board, which has to approve all research done by University learners; templates for and successful examples of proposals and dissertations; and links to research tools and dissertation support. We have tried to put everything together in one place to give you what you need to succeed in writing your dissertation.

The DC Network has even more tools and resources than described in this video, but you will learn more later, once you have access to the DC Network. For now, be aware that once you have a handle on your doctoral coursework, there is a much larger community of learners, faculty, and scholars awaiting you.

Dissertation Development Throughout the EdD Program

Top Label of Card: Year 1
Card Label: RES-850
After Click
Orange Title: Year 1: RES-850—Foundations for Research
Card Text:
Dissertation Components:

- Reviews the purpose and structure of the Literature Review.
- Identifies potential topic area for dissertation.
- Becomes familiar with the 10 Strategic Points and the Research Prospectus.

Dissertation Scholarship:

- Studies research ethics and the Institutional Review Board (IRB).
- Begins to identify, analyze, and synthesize empirical research literature relevant to research interest area.
- Identifies needs, gap, or tension in the literature related to research interest area.
- Applies qualitative and quantitative methodologies to potential topic area.

Top Label of Card: Year 1

Card Label: RSD-851
After Click
Orange Title: Year 1: RSD-851—Residency I
Card Text:
Dissertation Components:

- Develops preliminary working draft of the 10 Strategic Points and/or Research Prospectus based on Literature Review.
- Refines topic area for dissertation.

Dissertation Scholarship:

- Defines the problem, purpose, and significance of the proposed study based on preliminary Literature Review.
- Expresses problem in operational terms and articulates a research question.
- Considers research methodology/design and data analysis approach.

Top Label of Card: Year 2
Card Label: RES-861
After Click
Orange Title: Year 2: RES-861—Analysis of Existing Research
Card Text:
Dissertation Components:

- Develops outline and first draft of the Literature Review.
- Continues to revise and refine draft of the 10 Strategic Points to reflect updates to Literature Review.

Dissertation Scholarship:

- Organizes and synthesizes the literature relevant to topic of interest.
- Identifies theory in the literature to support potential problem, purpose statements, and research questions.
- Articulates themes in Literature Review and gaps in the literature.

Top Label of Card: Year 2
Card Label: RES-866
After Click
Orange Title: Year 2: RES-866—Approaches to Research Design and Data Analysis
Card Text:
Dissertation Components:

- Adds methodology and design to 10 Strategic Points document.

Dissertation Scholarship:

- Differentiates the GCU Core Research Designs.
- Begins quantitative statistics.
- Distinguishes descriptive from inferential statistics.
- Begins probability and hypothesis testing.
- Analyzes the use of statistical tools such as t-tests, ANOVAs, correlations, and regression analyses.
- Uses SPSS statistical analysis software to analyze quantitative data.
- Chooses and justifies a research methodology and design for proposed research based on GCU Core Research Designs.

Top Label of Card: Year 2

Card Label: RSD-881
After Click
Orange Title: Year 2: RSD-881—Residency II
Card Text:
Dissertation Components:

- Develops and/or refines Research Prospectus.
- Aligns research problem, purpose, questions, variables, instrumentation, research methodology, design, and data analysis in the 10 Strategic Points document and the Research Prospectus based on updates to draft Literature Review.

Dissertation Scholarship:

- Develops theoretical foundation/framework for proposed study based on method.
- Refines research design.

Top Label of Card: Year 3
Card Label: RES-880
After Click
Orange Title: Year 3: RES-880—Formalizing the Research Prospectus
Card Text:
Dissertation Components:

- Develops and expands the Literature Review draft.
- Submits final draft of the Research Prospectus.

Dissertation Scholarship:

- Articulates themes in Literature Review and gaps in the literature.
- Chooses and justifies a research methodology and design for proposed research.
- Chooses and justifies potential data collection and analysis approaches.

Top Label of Card: Year 3
Card Label: RES-885
After Click
Orange Title: Year 3: RES-885—Developing the Research Proposal
Card Text:
Dissertation Components:

- GCU assigns Committee Chair and Methodologist.
- Learner selects Content Expert.
- Submits finalized Research Prospectus for approval from Methodologist and Chair.
- Develops, revises, and expands the Literature Review (Chapter 2) draft further.
- Submits first draft of the Dissertation Proposal (Chapters 1-3) to Chair.

Dissertation Development Throughout the PhD Program

Top Label of Card: Year 1
Card Label: PSY-845
After Click
Orange Title: Year 1: PSY-845—Doctoral Statistics
Card Text:
Dissertation Scholarship:

- Explores quantitative statistics.

- Distinguishes descriptive from inferential statistics.
- Reviews probability and hypothesis testing.
- Analyzes the use of statistical tools such as t-tests, ANOVAs, correlations, and regression analyses.
- Uses SPSS statistical analysis software to analyze quantitative data.

Top Label of Card: Year 2
Card Label: PSY-815
After Click
Orange Title: Year 2: PSY-815—Ethical Issues of Psychology
Card Text:
Dissertation Components:
- Introduces purpose and structure of the Literature Review.
- Identifies potential topic area for dissertation.
- Constructs preliminary Literature Review outline.
- Becomes familiar with and develops preliminary working draft of the 10 Strategic Points document based on Literature Review.

Dissertation Scholarship:
- Defines the problem, purpose, and significance of the proposed study based on preliminary Literature Review.
- Expresses problem in operational terms and articulates a research question.
- Considers research methodology/design.

Top Label of Card: Year 2
Card Label: PSY-870
After Click
Orange Title: Year 2: PSY-870—Multivariate Statistics
Card Text:
Dissertation Components:
- Refines topic area for dissertation.
- Works independently to revise and refine draft of the 10 Strategic Points document.

Dissertation Scholarship:
- Begins multivariate statistics.
- Executes statistical tests/analysis using SPSS.

Top Label of Card: Year 2
Card Label: PSY-840
After Click
Orange Title: Year 2: PSY-840—Personality Psychology
Card Text:
Dissertation Components:
- Develops first draft of the Literature Review.

Dissertation Scholarship:
- Organizes and synthesizes the literature relevant to the topic of interest.
- Articulates themes in Literature Review and gaps in the literature.

Top Label of Card: Year 3
Card Label: PSY-850
After Click
Orange Title: Year 3: PSY-850—Qualitative Research Methods
Card Text:
Dissertation Components:

- Adds methodology, design with data collection instruments, and procedures to the 10 Strategic Points document.
- Develops first draft of the Research Prospectus incorporating the 10 Strategic Points.

Dissertation Scholarship:

- Reviews Prospectus Template.
- Reviews nature and application of qualitative research design.
- Chooses and justifies a research methodology and design for proposed research based on GCU Core Research Designs.
- Identifies potential data collection and analysis approaches that anticipate the characteristics of data to be collected for proposed study.

Top Label of Card: Year 3
Card Label: PSY-847
After Click
Orange Title: Year 3: PSY-847—Biological Psychology
Card Text:
Dissertation Components:

- Develops, revises, and expands Literature Review (Chapter 2) draft further.
- Aligns, updates, revises research problem, purpose, questions, variables, instrumentation, research methodology, design, and data analysis in the 10 Strategic Points document and the Research Prospectus based on updates to draft Literature Review.
- Submits final draft of the Research Prospectus.

Dissertation Scholarship:

- Refines research design.
- Develops theoretical foundation/framework for proposed study based on method.

Top Label of Card: Year 3
Card Label: PSY-825
After Click
Orange Title: Year 3: PSY-825—Advanced Research Design
Card Text:
Dissertation Components:

- GCU assigns Committee Chair and Methodologist.
- Learner selects Content Expert.
- Submits finalized Research Prospectus for approval by Methodologist and Chair.
- Develops, revises, and expands the Literature Review (Chapter 2) draft further.
- Submits first draft of the Dissertation Proposal (Chapters 1-3) to Chair.

Dissertation Development Throughout the DBA Program

Top Label of Card: Year 1
Card Label: DBA-810
After Click
Orange Title: Year 1: DBA-810—Contemporary Issues in Marketing
Card Text:
Dissertation Components:

- Reviews the purpose and structure of the Literature Review.

Dissertation Scholarship:

- Begins to identify, analyze, and synthesize empirical research literature relevant to a research area.
- Identifies needs, gap, or tension in the literature related to a research area.

Top Label of Card: Year 1
Card Label: RSD-851
After Click
Orange Title: Year 1: RSD-851—Residency I
Card Text:
Dissertation Components:

- Develops preliminary working draft of the 10 Strategic Points and/or Research Prospectus based on Literature Review.
- Refines topic area for dissertation.

Dissertation Scholarship:

- Defines the problem, purpose, and significance of the proposed study based on preliminary Literature Review.
- Expresses problem in operational terms and articulates a research question.
- Considers research methodology/design and data analysis approach.

Top Label of Card: Year 2
Card Label: RES-861
After Click
Orange Title: Year 2: RES-861—Analysis of Existing Research
Card Text:
Dissertation Components:

- Develops Literature Review outline and first draft of the Literature Review.
- Continues to revise and refine draft of the 10 Strategic Points to reflect updates to Literature Review.

Dissertation Scholarship:

- Organizes and synthesizes the literature relevant to topic of interest.
- Identifies theory in the literature to support potential problem, purpose statements, and research questions.
- Articulates themes in Literature Review and gaps in the literature.

Top Label of Card: Year 2
Card Label: RSD-881
After Click

Orange Title: Year 2: RSD-881—Residency II
Card Text:
Dissertation Components:

- Develops and/or refines the Research Prospectus.
- Aligns research problem, purpose, questions, variables, instrumentation, research methodology, design, and data analysis in the 10 Strategic Points document and the Research Prospectus based on updates to draft Literature Review.

Dissertation Scholarship:

- Develops theoretical foundation/framework for proposed study based on method.
- Refines research design.

Top Label of Card: Year 3
Card Label: RES-865
After Click
Orange Title: Year 3: RES-865—Research Design and Methods
Card Text:
Dissertation Components:

- Develops, revises, and expands the Literature Review (Chapter 2) draft further.
- Submits final draft of the Research Prospectus.

Dissertation Scholarship:

- Differentiates the GCU Core Research Designs.
- Begins quantitative statistics.
- Distinguishes descriptive from inferential statistics.
- Begins probability and hypothesis testing.
- Chooses and justifies a research methodology and design for proposed research.
- Chooses and justifies potential data collection and analysis approaches.
- Uses SPSS statistical analysis software to analyze quantitative data.

Top Label of Card: Year 3
Card Label: RES-871
After Click
Orange Title: Year 3: RES-871—Developing the Formal Proposal
Card Text:
Dissertation Components:

- GCU assigns Committee Chair and Methodologist.
- Learner selects Content Expert.
- Submits finalized Research Prospectus for approval by Methodologist and Chair.
- Develops, revises, and expands the Literature Review (Chapter 2) draft further.
- Submits first draft of the Dissertation Proposal (Chapters 1-3) to Chair.

Dissertation Committee Roles Graphic:

Role	Learner	Chair	Methodologist	Content Expert
Restaurant Example:	Owner: Ultimately responsible and accountable for success or failure of business. Sets overall goals and direction. Listens to experts on staff.	Executive Chef: Most experienced in food prep. In charge of the kitchen and coordinating others there. Mediates kitchen disputes. Provides essential direction to Owner.	Sous Chef: Assists Executive Chef. Does essential work on key components. Works primarily with Executive Chef, who may relay concerns or advice up to Owner.	Pastry Chef: Specialized expert. Focused in one area. Defers to Executive and Sous chefs for the menu, but they defer to Pastry Chef in regards to desserts.
Sports Example:	Owner: Ultimately responsible and accountable for success or failure of team. Sets overall goals and direction. Listens to experts on staff.	Head Coach: Most experienced in the sport. In charge of the team and sets practice and plays. Mediates disputes. Provides essential direction to Owner.	Assistant Coach: Assists Head Coach. Does essential work on key components of team strategy. Works primarily with Head Coach, who may relay concerns or advice up to Owner.	Defensive Coordinator: Specialized expert. Focused in one area. Defers to Head and Assistant coaches for the strategy, but they defer to coordinator in regards to key plays.
When Each Joins the Committee:	There at the beginning.	Assigned by GCU at the start of the first dissertation class (RES-885 or PSY-825).	Assigned by GCU in the middle of the first dissertation class (RES-885 or PSY-825).	Selected by learner at any time, and formally added to committee in the middle of the first dissertation class (RES-885 or PSY-825).
Responsibilities:	• Selects topic, thesis, and research • Researches Literature Review content • Writes dissertation documents • Listens to advice from committee members and college	• Expert on CDS dissertation process and policy • Overall research oversight • Formally reviews and approves Research Prospectus • Leads Proposal and Dissertation development and Defense calls • Coordinates between learner and reviewer during Academic Quality Reviews	• Focuses advice on research methods and data analysis • Formally reviews and approves Research Prospectus • Participates in Proposal and Dissertation development and Defense calls • Available during Academic Quality Reviews	• Focuses advice on in-depth subject-related content • Participates in Proposal and Dissertation development and Defense calls • Available during Academic Quality Reviews
Access:	• LoudCloud classes • Virtual dissertation workspace	• Faculty of record in the LoudCloud classroom during dissertation classes. • Accesses virtual dissertation workspace	• Accesses virtual dissertation workspace	• Accesses virtual dissertation workspace

Dissertation Progression Media Piece:

Topic:

- Be connected to an area of personal interest and passion. The dissertation journey is a long one. If you are not passionate about your topic, it will be much harder to finish!
- Focus on a gap in the literature. What has not been done? What connections have not been studied fully? What areas have not had this theory applied? Think about the "who," "when," and "where."
- Have a theoretical foundation. Scholars stand on the shoulders of those who came before them. What theories and concepts ground your topic and explain the "why" and the "how"?
- Be of a reasonable scope. This is your very first piece of professional research. It does not need to be a multiyear, wide-spanning study. It is a starting point for future studies. Think about the "what."

10 Strategic Points:

- A one- to two-page document
- Developed during the first year of classes
- Start to provide details to your topic. Flesh out the "who, what, when, where, why, and how."
- Sentences explain plans for key elements such as research design, research questions/hypotheses, data analysis, gap in the literature, etc.

Research Prospectus:

- A six- to ten-page document
- Developed during the second year of classes
- Expands upon initial entries in 10 Strategic Points. Includes paragraphs on each key point.

Proposal:

- A 70- to 100-page document
- Developed during the third year of classes and dissertation courses

- Expands upon key elements in Research Prospectus. Includes pages on each key element.
- Functionally, first three chapters of your Dissertation:
    - Chapter 1: Overview—Contains overview of all elements, like an expanded Research Prospectus.
    - Chapter 2: Review of the Literature
    - Chapter 3: Methodology—Detailed explanation of how you plan to collect your data.
- Reviewed, revised, amended, and edited by:
    - your committee members
    - the college-assigned Academic Quality Reviewer
    - the Institutional Review Board

Dissertation:

- A 150- to 300-page document
- After you conduct your research, you add two chapters to the proposal:
    - Chapter 4: Results—Present all the data from your study.
    - Chapter 5: Analysis—What happened, and how does it fit with your research questions/hypotheses, the existing literature, and your theoretical foundation?
- Some edits done to chapters 1-3 to bring everything in line.
- Reviewed, revised, amended, and edited by:
    - your committee members
    - the college-assigned Academic Quality Reviewer
    - the college-assigned Form and Format Reviewer
    - the Dean or Designee

Graduation:

- Congratulations! You have earned it!

Journal Publication:

- Cut the dissertation down into one or two 15- to 25-page journal submissions.
- Dissertations are published in the ProQuest database, but you can also rework your results to submit to academic, professional, and/or peer-reviewed journals.
- Utilize all the original research you conducted to get published and build your academic credentials.

References

National Science Foundation. (2014). *Doctorate recipients from US universities, 2012* (NSF Publication No. 14-305). Retrieved from http://www.nsf.gov/statistics/sed/digest/2012/nsf14305.pdf.

Berman, R., Radda, H. (2012, July). Creating an online community of doctoral learners through innovative scholarly networking. Presented at the Sloan Consortium's 5th Annual International Symposium for Emerging Technologies for Online Learning, Las Vegas Nevada.

Glossary Terms

Abductive Reasoning: A type of reasoning that uses creative intuition as the basis for possible directions for inquiry.

Brainstorming: To spontaneously think of ideas.

Case Study Design: A qualitative research design that examines time-sensitive activities that have explicit and tacit rules that affect human experience and interaction.

Causation: Establishing, through scientific inquiry, the reasons for specific effects occurring.

Comparative Analysis: Examination of the component parts of subject or object for purposes of discussion.

Comparative Research: Examination of the constituent parts of a subject or object as a basis for ascertaining fact or drawing conclusions.

Constructivist Paradigm: A paradigm in which researchers view knowledge and reality as socially constructed, which places an emphasis on contextual factors.

Content Expert: The content expert is selected by the learner based on the specific area of interest in the dissertation. They provide valuable feedback on the proposal and dissertation.

Convergent Design: A mixed-method design that collects and analyzes both quantitative and qualitative data simultaneously, compares the two datasets, and then interprets combined findings.

Correlation: Establishing, through scientific inquiry, the degree of association between variables.

Critical Thinking: An engaged examination of component characteristics of a problem or question, taking acquired knowledge and new knowledge in to account in order to develop an informed, coherent and clear position.

Deductive Reasoning: A type of reasoning that subtracts items no longer relevant because of new information.

Dissertation Chair: In charge of the dissertation committee. Chairs are selected because of their knowledge of GCU's dissertation process, overall research experience, and skills in coordination. GCU provides each learner with a chair.

Dissertation Committee: Consists of a chair and a methodologist supplied by the University, and a content expert selected by the learner.

Doctoral DNA: A high-level design concept that has been used in the development of all doctoral programs to ensure that research and dissertation skills are embedded through the program, proper support structures are in place, and the curriculum is scaffolded and effectively creates learners who can balance application and theory.

Engaging Doctoral Learners (EDL): GCU uses the acronym "EDL" to refer to the specific development of curriculum, training of faculty, and buildup of support for learners in the first courses to promote a successful start to the program.

Enrollment Counselor (EC): A college representative who initially assists learners in enrolling in the program and advises them through their first course.

Epistemology: The study of how people go about obtaining facts and how people justify and, hence, provide warrant for their belief in such facts.

Ethnographic Design: A qualitative research design focused primarily on describing culture and how individuals create and interact with the culture.

Experimental Design: A quantitative research design that uses control and intervention groups of participants to determine causal relationships between variables.

External Validity: The degree to which the results of a scientific study are generalizable or can be applied to other populations outside of the sample used for inquiry.

Grounded Theory Design: A qualitative research design that uses an inductive approach to build or discover theory from the ground up not by imposing theory on participants.

Heuristics: Cognitive shortcuts that reduce the cognitive load necessary to come to conclusions, also called rules of thumb.

Hypothesis: A prediction made for the purpose of being tested by methods employed in scientific inquiry.

Inductive Reasoning: A type of reasoning that involves a subjective assessment based upon exemplars found in experience.

Information Literacy: The ability to know when there is a need for information, to be able to identify, locate, evaluate, and use that information effectively for the issue or problem at hand.

Internal Validity: The degree to which confounding factors or systematic errors are minimized to make a research design and research study coherent.

Literature Review: Within a doctoral program, a compiling and synthesizing of empirical studies for the purpose of determining appropriate questions for research, which provide empirical reasons for inquiring about a research topic.

Mechanics: In reference to editing, mechanics refers to items such as punctuation, capitalization, indentions, etc., pertaining to written language as guidance for communicating appropriate action in oral language.

Metacognition: Being aware of and taking in to account one's own knowledge foundations while looking across wide information sources to provide a glimpse of commonalities and differences across contexts.

Methodology: The study of tools and procedures used to obtain knowledge within science.

Methodologist: Provides direct support for the research essentials, whether qualitative, quantitative, or mixed methods. Methodologists support the chair and provide important feedback on the prospectus, proposal, and dissertation. GCU provides each learner with a methodologist.

Milestones: Key steps in the dissertation journey.

Narrative Design: A qualitative research design used to tell the narrative life stories of participants. In this design, often the researcher is a co-participant in telling the life story of the sample participants.

Nonexperimental Design: Survey Research: A quantitative research design in which surveys are used to obtain data from sample participants.

Objective: Of or relating to external reality; not influenced by personal feelings or biases.

Ontology: The study of how one construes existence, a person's conception of the world and what is entailed in such an existence.

Paradigm: The tacit rules, theoretical lens, or epistemological and ontological commitments inherently employed when utilizing certain methods in science to obtain knowledge about the world.

Paraphrase: To express the meaning and content of another author's work in different words.

Phenomenology Design: A qualitative research design used to inquire about the unique thoughts, feelings, and experiences that help describe people within situations.

Positivist Paradigm: A paradigm in which researchers measure objects in the real world with the intent of discovering facts that increase the body of human knowledge. In this paradigm, contextual factors are not of primary concern.

Post-Positivist Paradigm: a paradigm in which researchers use measurements to discover facts, but such facts are deemed falsifiable, which introduces the need for exhaustively testing hypotheses.

Pragmatic Paradigm: A paradigm that assumes the need to employ all practical means to obtain knowledge, including the analysis of both quantitative and qualitative data.

Proposition: A statement about phenomena that does not imply a need to be tested.

Prospectus: A summary of a proposed research project. At GCU, the Prospectus is an evolution of a Learner's 10 Strategic Points document, expanding on the 10 points for 8-12 pages, providing an overview of the learner's proposed dissertation proposal in summary form. Learners start work on their prospectus during Year 2 and should have a completed draft ready when they are assigned to their committee in Year 3.

Quote: To directly copy another author's work word-for-word.

Self-editing: The process of proofreading and editing one's own writing by revising content for clarity and reducing or eliminating grammatical, word usage, and mechanical errors.

Self-plagiarism: The use of one's own previously written/published work without referencing the associated source.

Seminal Works: Publications recognized by the research community as important landmarks and major breakthroughs in scholarship.

Sequential Design: A mixed method design that collects and analyzes both quantitative and qualitative data sequentially (different types of sequential designs dictate which is collected first).

Statistics: The use of numerical values and formulas to predict the relationship of phenomena.

Subjective: Influenced by personal feelings or biases; based on internal perception and not external reality.

Technology Literacy: The ability to understand and use technology as a tool to facilitate achieving the objectives.

Thesis Statement: A statement that sets forth the purpose and/or themes of a work that will be discussed or proven.

Tone: The style in which an author writes (formal, informal, academic, etc.).

Transformative Paradigm: A paradigm in which there is an assumption that humans are oppressed in modern culture. This approach assumes research should empower individuals to lift the constraints that limit human potential through discovering knowledge.

Variable: In statistics, a label used in statistics to assign attributes that represent characteristics of people, places, things, or ideas.

Voice: The personality and style of an author's writing.

Resources

RESOURCES

Doctoral DNA Website: http://gcumedia.com/doctoralDNA/prospective-students/index.html

Christian Worldview: http://www.gcu.edu/About-Us/Christian-Worldview.php

GCU Library: http://library.gcu.edu

Library Training: http://www.gcu.edu/Student-Life/Library/Webinar-Sign-Up.php

LitAssist: http://www.litassist.com

LopeSearch: http://library.gcu.edu/database

LopeCat: http://library.gcu.edu/Book

InterLibraryLoan: http://library.gcu.edu.library.gcu.edu:2048/InterLibraryLoanRequest

Library Webinars: http://www.gcu.edu/Student-Affairs/Library/Webinar-Sign-Up.php

Doctrinal Statement: http://www.gcu.edu/About-Us/Doctrinal-Statement.php

Student Success Center: http://gcumedia.com/lms-resources/student-success-center/index.html

Student Success Center Writing Center: http://gcumedia.com/lms-resources/student-success-center/writing-center/index.html

Student Success Center Grammar Success Booster: http://www.youtube.com/watch?v=TS87E4-4QuMhttp://gcumedia.com/lms-resources/student-success-center/grammar-booster/index.html

Writing Process: http://lc.gcumedia.com/unv104/the-writing-process/the-writing-process-v1.1.html

Center for Learning and Advancement: http://www.gcu.edu/Learning-Resources/Center-for-Learning-and-Advancement.php

10 Descriptive Levels of Plagiarism: http://www.turnitin.com/assets/en_us/media/plagiarism_spectrum.php

Tutoring Services: http://www.gcu.edu/Learning-Resources/Center-for-Learning-and-Advancement/Tutoring-Services.php

Author Biographies

Dr. Chuck Banaszewski

Dr. Chuck Banaszewski has been an instructor at Grand Canyon University since 2011 and has been a part of the School for Doctoral Studies since November of 2013 where he serves as an Assistant Professor for online doctoral students. Banaszewski graduated from Coastal Carolina University (CCU) in 1996 with a bachelor's degree in fine arts. He was a double major at CCU where he studied theatre and English. In 2006, Banaszewski received his Doctorate in Theatre from Arizona State University. His academic career has always been rooted in engaged pedagogy in which he develops working relationships with his students. All of his research is based on students and teachers sharing in the learning process. He believes communication is the touchstone to building any kind of successful program, and his ability to communicate well with

others—as well as being able to understand people's needs—is an invaluable asset that has followed him in all of his professional and academic relationships.

Dr. Michael Berger

Dr. Michael Berger is Dean of the College of Doctoral Studies at Grand Canyon University where he has worked since 2004. His dissertation focused on instructional techniques that online faculty can use to better connect with their students. He has presented at numerous conferences on the subjects of higher education assessment, online learning, and virtual doctoral education. His bachelor's and master's degrees are from the University of Dayton, and he received his Doctorate in Education from GCU. Berger started his doctoral program five days after his daughter was born, so he has first-hand experience trying to balance school, family, and full-time employment.

Dr. Ronald Berman

Dr. Ronald Berman is Executive Director of Academic Excellence for the College of Doctoral Studies. He is responsible for overseeing the development and implementation of long-term strategies that enhance the effectiveness and richness of doctoral education at Grand Canyon University. Berman is also the program chair for the Doctorate in Business Administration Program and is the architect for the Doctoral Community Network. He frequently teaches leadership, technology, and research in the doctoral college. He has presented at several Sloan Consortium International conferences and has recently published research on the Doctoral Community Network. Berman has extensive business and technology experience which is augmented with diverse academic credentials. He had held a variety of senior product and technology leadership positions in Fortune 100 companies and helped to launch a successful dot.com. Berman earned a Bachelor of Science in Business Administration from Boston

University, a Master of Science in Engineering from the University of Pennsylvania, and a Doctorate in Education from Nova Southeastern University.

Dr. Scott Greenberger

Dr. Scott Greenberger is the Manager of Research and Assessment in the Center for Innovation in Research and Teaching (CIRT) at Grand Canyon University. He has 15 years of experience working with institutions of higher education. Greenberger earned a Bachelor of Arts degree in Urban and Regional Planning from the University of Wisconsin at Green Bay, a Master of Arts in Liberal Arts from St. John's College in Annapolis, Maryland, and a Doctorate of Education degree in Organizational Leadership with an Emphasis in Higher Education Leadership from Grand Canyon University. His research interests include the psychological construct of passion, faculty evaluation and assessment, and the philosophy of scientific inquiry.

Dr. Jim Hadley

Dr. Jim Hadley is the Psychology Program Chair at Grand Canyon University. He graduated from the University of Maryland (European Division) with a Bachelor of Science Degree in Psychology and went on to complete his Master of Arts Degree in Marriage, Family, and Child Counseling with a clinical emphasis at Chapman University in 1983. After serving in the Air Force for 22 years in the Human Resources field, he held positions as Manager of Leadership Training and Development for various large organizations in the Midwest. He graduated in 2003 with his PhD in Psychology from Saybrook University in San Francisco, formerly known as the Humanistic Psychology Institute. Hadley taught general psychology at the community college level, and from that point, he was hooked on the classroom. He moved into college administration, serving as an Academic Dean, as Campus President at two for-profit colleges, and as a Campus President at a small for-profit university. He has taught doctoral students in

various psychology and leadership courses during the past seven years and continues to teach psychology courses at the doctoral level for Grand Canyon University.

Dr. Sherion H. Jackson

Dr. Sherion H. Jackson holds a Doctorate in Educational Leadership and Supervision from Arizona State University, and a Bachelor of Science and Master of Arts in Education from the University of Central Florida. Jackson has served as associate professor, educational consultant, Southern Association of Colleges and Schools reviewer, and school administrator. She has peer-reviewed, edited, and refereed numerous books and journal articles for publishers, authors, conferences, and students. Since 2001, she has authored or coauthored more than 35 journal articles and books. She is a firm believer in fine-tuning writing through the peer-review and editing processes in order to provide the audience with a concise understanding of the proposed content.

Dr. Seanan Kelly

Dr. Seanan Kelly completed a Bachelor of Fine Arts degree at Arizona State University while competing as a collegiate athlete (football). Kelly spent four years in athletic operations while completing a Master of Education degree in Education Leadership and Policy Studies. He taught for five years at Arizona State University while completing his Doctorate of Education degree in Higher and Postsecondary Education. Kelly's ongoing research interests focus on intersections of race, gender, and sports policy with an emphasis on identity and factors that promote or deter degree attainment by underrepresented groups in collegiate athletics. Kelly has been a visiting lecturer at Monterey Peninsula College in California and Maricopa Community College-Northern Arizona University Education Policy Program, and was a visiting scholar and lecturer at Albion College in Michigan as a guest of the board of Ethnic and Women's studies.

Dr. Julia Langdal

Dr. Julia Langdal has been teaching as either an adjunct or full-time faculty member for more than six years. She earned her Doctorate of Psychology degree in Clinical Psychology and has a passion for practicing and teaching psychology and other subjects. Langdal is a licensed clinical psychologist and a member of the American Psychological Association. She has contributed to several articles published in psychological journals and has presented at conferences across the country. She truly enjoys working with students to develop and hone their critical-thinking and writing skills and is excited to see developmental changes as students progress through their programs.

Dr. Wayne Schmidt

Dr. Wayne Schmidt is the Education Content Chair at Grand Canyon University, where he has worked since 2010. Before moving to the College of Doctoral Studies, Schmidt worked to develop curriculum at GCU. Prior to GCU, Schmidt was in K-8 education, serving as a junior high school teacher and as a principal. He graduated from Concordia University, Chicago, California State University, Long Beach, and Arizona State University. He wrote his dissertation on using collaborative inquiry as professional development for teachers. He has presented at conferences throughout the Pacific Southwest and has contributed several articles on professional development. He sees building positive relationships as central to effective instruction.

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Example of an in-text citation directly quoting chapter content:

Schmidt (2014) compared the preparation one must go through to begin doctoral studies to athletes "doing the lay-up drills, throwing some practice passes to the wide receiver, or getting into the sprinter's stance" (para. 3).