STARTING DOCTORAL DISSERTATION JOURNEY WITH A SOLID RESEARCH PROBLEM STATEMENT – A FOUR STAGE FRAMEWORK [PRE-PUBLICATION DRAFT]

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ABSTRACT

Aim/Purpose	Provide methodology suggesting steps to doctoral mentors to work with students in constructing their research problem statement in their dissertation.
Background	Doctoral students face difficulties writing their dissertation and they begin by writing the research problem statement.
Methodology	This paper uses a framework widely used to describe student adjustment to graduate studies in general and to doctoral program in particular.
Contribution	This study provides a framework to mentors/advisors that is helpful in guiding the students to writing their research problem statement.
Findings	Writing a research problem statement is difficult by itself. Following a methodological approach suggested in this study could help with writing it.
Recommendations for Practitioners	A methodological approach in writing the dissertation is helpful to mitigate the difficulties of writing the dissertation. Our study tackles difficulties with writing the research problem statement.
Recommendations for Researchers	More research needs to be done on methodological approach to writing the other sections in the dissertation.
Impact on Society	Our findings in this research will help doctoral mentors/advisors as they guide students in completing the writing of their research problem statement
Future Research	Intention for future research is to follow similar methodological approach in guiding students in writing the other sections of the dissertation
Keywords	Resea;rch problem statement, research dissertation, problem statement

INTRODUCTION

> The dissertation is a labor of love requiring much work, sweat, and tears, as well as organization skills and extensive resources from others who are involved with the process. The final product is a document that one can recognize as a once-in-a-lifetime achievement. We liken this experience to the task of building your own home. (Grant & Osanloo, 2016, p. 12)

Working on dissertations for doctoral programs is often lengthy, intricate, and subject to various factors that could influence the result of the dissertation (Black, 2017; Brill et al., 2014). Like the saying "The journey of a thousand miles starts with a first step," the journey for completing doctoral dissertations often starts with defining the research problem. The problem statement becomes the centerpiece that other sections in the dissertation link to as the thesis builds (Burkard, 2014). Writing a problem statement is a complex step that involves multiple decisions that are influenced by numerous factors. But once established, a good problem statement lays the foundation and paves the way to a complete dissertation.

Writing doctoral research problem statement has been the subject of numerous studies (Blum & Preiss, 2005, Creswell, 2005, Ellis & Levy, 2009, Faryadi, 2018, Jacobs, 2013, Kerlinger & Lee, 2000). The point of emphasis from these studies is that writing a research problem statement is difficult, and it is subject to the multiple factors that often influence writing it (Jacobs, 2013).

The complexity of writing a problem statement is increased further by the fact that the task of writing it (the research problem statement) is usually tackled at the beginning of the journey – a time when most students are struggling to adjust to the new environment of graduate studies or to the phase of dissertation writing (Gardner, 2009). A multi-faceted difficulty will be facing the students as they embark on writing (constructing, developing, or forming) their problem statements (Black, 2017). However, students are expected to write the problem statement at a time when they are still unable to fully comprehend the journey ahead.

In this paper, steps are suggested for doctoral faculty to help students construct their research problem statement. It takes into consideration the phases of adjusting to the new environment of graduate studies (or writing the dissertation). The remainder of this study is divided into the following sections:

- First, the theoretical framework is introduced. It forms the basis of this study and on which the recommendations will be based.
- Second, forming the research problem statement is explained, such as what is it and how it is typically written.
- In the third section, factors that make writing problem statements challenging are described.
- Factors that help with writing the research problem statement are elaborated on next.
- Next, suggestions are discussed about how to guide students into writing a problem statement.
- The last section provides the recommendations of this study.

THEORETICAL FRAMEWORK – THE BEELER'S MODEL

A theoretical foundation called the "Beeler's Framework" (Beeler, 1991) is used in this paper to suggest steps for academicians to mentor students through the stages of writing the problem statement. The Beeler's framework has been widely used among researchers in describing the adjustment of students to graduate studies. For example, Ali and Kohun (2007) used Beeler's work to suggest a framework for dealing with the feeling of social isolation in doctoral programs. Bloomberg and Volpe (2018) used it to create a road map and suggestions completing their doctoral dissertations. Lewis et

al. (2003) used the model to explain the experience of African-American Ph.D. students at a predominantly white research institution.

The Beeler's framework is about graduate students, their mental adjustment (academically and socially) and awareness as they embark on graduate studies. Beeler's framework suggests that students go through four phases in their mental adjustment to the requirements and the work in graduate studies:

- Phase 1: Unconscious incompetence
- Phase 2: Conscious incompetence
- Phase 3: Unconscious competence
- Phase 4: Conscious competence

The first stage of graduate studies starts upon entering the program. Many students have only a piece of limited knowledge about what is involved in the program either academically or socially (Gardner, 2009); essentially, they do not know what they do not know. During this stage, students may question their decision to pursue the graduate degree and doubts may linger about their performance. The second stage of adjustment takes place after the students gain knowledge about the academic requirements and what is ahead of them. Students at this stage become aware of their deficits when compared to the requirements of the program. Thus, their lack of knowledge becomes clear. By the third stage, students have gained some competence in their field of study but are largely unaware of their competence; thus, competency awareness takes place unconsciously. The fourth and last stage is the result of accumulating sufficient knowledge and the students become aware that they 'know what they know'. This conscious awareness of competence is cultivated by completing the degree requirements that they attempted. Figure 1 depicts the framework introduced by Beeler.

Figure1. Beeler's framework for adjustment to graduate studies (Beeler, 1991)

WHAT IS A RESEARCH PROBLEM STATEMENT?

At first glance, the question "What is a Research Problem Statement?" may sound like the "duh" game that is played among some children when asked a question that has an obvious answer. But the answer to the question "What is a Research Problem Statement?" is not an obvious one, and this question may need to be answered before writing further about the topic. What is meant by a research problem statement will be clarified in this section.

First, what is a problem statement is presented in brief. Then the cause-and-effect relationship in problem statements is clarified. This step is necessary to complete before tackling what is meant by the research problem statement. Lastly, what is meant by research problem statement and how it is different from other problem statements is explained.

A PROBLEM STATEMENT

An old expression goes, "If it looks like a duck, swims like a duck, and quacks like a duck, then it probably is a duck." The same can be applied to understanding problem statements. A problem statement needs to sound like a problem when reading it or when talking about it. So, from the writing perspective, a problem statement needs to be written such that it sounds like one. If a statement – which is ideally one sentence but could be more, although typically not more than two or three sentences at the most – sounds like a problem and if it reads like a problem, then it is fair to say that one has a problem statement.

A reasonable question that could be asked at this point is how to make a statement sounds like a problem statement and what are the specifics in the statement that make it read like a problem. This question leads to the discussion of the "cause and effect relationship", a concept that is important to shed light on in order to understand research problem statement.

CAUSE AND EFFECT RELATIONSHIP

As the name indicates, a problem statement is a statement that is composed of a sentence or more, phrased to sound or to read like a researchable problem. Typically, it must have two parts, a cause and an effect. For instance, the statement could describe a loss or a missed opportunity and indicate a cause for the loss and the missed opportunity (Jacobs, 2013). In other words, there is a cause to the problem being stated and there is an effect because of the cause (Williams, 2020).

A statement about the increasing of air pollution in industrial cities for example might be a statement, but at that point, it does not have sufficient information to be considered a problem statement. However, say it were supplemented by another statement about the increasing cases of asthma in industrial cities that is caused by air pollution. Then, this statement pair presents the reader with a cause "air pollution in industrial cities" and has an effect "increasing asthma in industrial cities." Thus, it is be considered a problem statement.

A relevant point to note here is that effect could have other causes as well. But generally, the focus of a good problem statement is one cause and the relationship between that cause and the effect. Take the example of the air pollution again and the increasing of asthma among residents of industrial cities. There could be other factors that made the effect (increasing asthma), such as increased pollen in the air that causes the asthma. But the focus of the research problem statement is typically on one cause (Faradyi, 2018). In this case it is air pollution. This relationship is depicted in Figure 2.
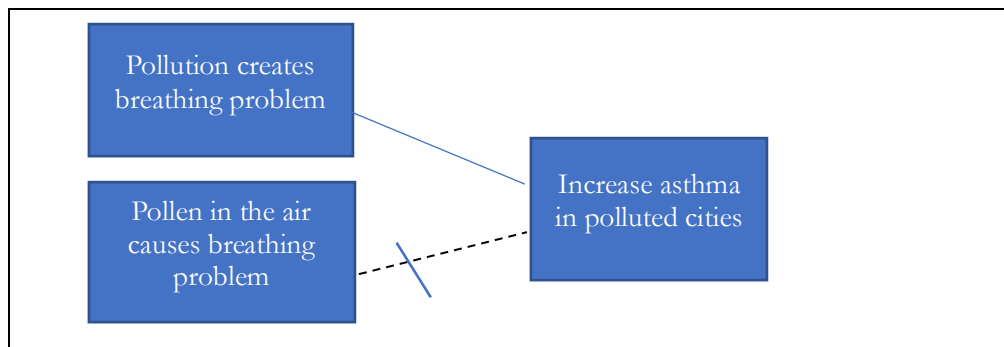

Figure 2. Cause and effect relationship illustrated

RESEARCH WORTHY PROBLEM STATEMENT

By research worthy, it is meant that the problem being described (stated) must be supported by research data and different reviews. Also, the resolution sought from stating this problem must be achieved through research (Jacobs, 2013). In research problem statement, there is no room for intuition and opinion. These must be put aside. The problem statement must be supported with research and the anticipated resolution must be achieved through research as well.

Doctoral students are typically advised to tackle a viable research problem, as noted by Ellis and Levy (2009). To understand what is meant by viable, we searched the dictionary to understand the meaning of the word "viable" and thesaurus to find alternative words that describes it. Webster dictionary defined viable as "capable of working, functioning, or developing adequately" (Merriam-Webster, n.d.). And thesaurus.com (n.d.) suggested the following alternatives: Possible, usable, workable, doable.

We determined from this that, for a problem statement to be acceptable as a research problem, it must meet two conditions: First, it must be workable or doable within the resources available to the researcher. Second, it must be usable, that is the anticipated resolution of this problem is helpful and the community will benefit from the resolutions sought in the research. In both cases, the element of research is present, and it is a must. That is, the problem as stated is supported by research and the resolution to it must be achieved through research (Ellis & Levy, 2012).

CHALLENGES FACING THE WRITING OF PROBLEM STATEMENTS

Research that discusses the difficulty of writing a research problem statement is numerous. Kerlinger and Lee (2000), for example, noted that forming the problem statement in doctoral research is the most difficult and important task in writing a doctoral dissertation. Jacobs (2013) noted that research problems are not lying around waiting to be selected. Instead, the problem needs to be researched and selected based on the interest of the researcher. Jacobs further noted that writing a research problem statement demands skills far behind proficient writing skills.

A reasonable question to ask at this point is, "Why is writing a problem statement in doctoral dissertation such a challenging task?" This section attempts to answer this question. Research writing and how it is different from other writing mechanisms is first explained. Then issues surrounding buzz words used to describe research problem statements are covered. Lastly, there is a discussion on the various sections in a dissertation that the problem statement is connected to and how this makes it more challenging to write the problem statement.

RESEARCH WRITING

There is consensus among researchers that writing a dissertation is accompanied by stress, anxiety, and anguish (Pappa et al., 2020). Devos et al. (2017) for example explained about the distress that accompanies the writing of dissertations. Russell-Pinson and Harris (2019) wrote about the anguish and anxiety that accompany the writing of dissertations. Stadtlander et al. (2020) noted that writing dissertations (and hence start by writing a research problem statement) is most often accompanied by stress, anxiety, and anguish. The question that could be asked is, "What is in the doctoral dissertation writing that cause this distress, anxiety, and anguish?"

The doctoral dissertation most often introduces students to a different form of writing, one that is called "Research writing" or "research for publication." Research writing is different from other forms of writing (such as letter writing or journalistic writing) because there are explicit rules and conventions that guide research writing. Moreover, there are stated goals in research writing that the author must focus on. Aside from this, research writing must be based on research, facts, assertion, findings, resolutions, and suggestions, and all of these need to be based on research. The research must follow certain writing standards such as American Psychological Association (APA) or Modern Language Association (MLA) (Burkard, 2014).

On the topic of writing standards (such as APA and MLA), it is worth noting that following a formal writing standard is helpful in many ways: it adds rigor; it provides standard and consistent ways to present the information; and it assists other researchers to understand the facts and find the resources that led to the facts (Gardner, 2009). For this reason, following a guideline represents the gold standard on which research writing is based and information is presented. However, this complicates the writing of the problem statement. Writing a good problem statement while adhering to strict writing requirements can be a challenging task.

THE BUZZ WORDS

In this research we define buzz words as the words that are not clearly defined in the mundane language. At same time, we use the term "buzz words" to mean words that could give different meaning and that could be used in different ways. The issue of buzz words has been discussed in literature. Sacco (2014), for example, cautioned against using buzz words in writing because readers could come from different backgrounds. Sacco explained that unless words and phrases are understood in normal conversation, it will be counterproductive to include them in research writing.

The reason that "buzz words" are discussed in this research is that the literature that describes research problem statements is filled with buzz words that often make literature difficult to comprehend. Repeated use of buzz words in describing what is meant by a research problem statement and the criteria that govern articulating it create added confusion for the students.

To explain this repeated use of buzz words, we searched literature that describes the writing of a research problem statement. In the list below, we present in each bullet the buzz words we found from our literature review that describes what to include in articulating a research problem statement. We italicize the buzz words to distinguish them.

- Must be phrased so that it could be *explained in a sentence or few sentences* (Blum & Preiss, 2005)
- Must be concise, *well-conceived, and precise* (Jacobs, 2013)
- Research problem statements state a *specific condition* that needs *urgent attention* (Faraydi, 2018)
- Need to be based on *scholarly literature* (Jacobs, 2013)
- Makes contribution to the *body of knowledge* (Ellis & Levy, 2012)
- It must be between *100 and 250 words in length* (Blum & Preiss, 2005)
- Must be significant enough to warrant dissertation research (Blum & Preiss, 2005)
- Based on literature and must describe a *gap in research* (Jacob, 2013)
- Premeditated investigation using *scientific methodology* (Faraydi, 2018)
- *Originality and significance* are requirements (Lovitts and Wert, 2009)
- "*original piece of empirical research*" (Stadtlander et al., 2020, p. 79)
- A problem statement that is *aligned with their passion* (Blum & Preiss, 2005)

The listing of that many words while explaining the concept could be inundating to the students, especially so when words have multiple meanings. This is liable to confuse the dissertation writing students. Additionally, the suggested brevity for defining a research problem statement adds to the difficulty. Blum and Preiss (2005), for example, suggested that problem statements need to be succinct. They further suggested that it must be worded in a way that can be explained by the researcher in an easy and simplistic ways.

All these conditions lead to confusion. The novice researcher is bombarded with words that are not readily clear to them. At the same time, the research problem statement needs to be short sentences that do not exceed 250 words and could be explained talking to people in an elevator traveling between two floors (Blum & Preiss, 2005). This confusion is illustrated in Figure 3; the center of the figure is the researcher that is bombarded by all these words.

THE MULTI INTERLINKS TO OTHER SECTIONS

Jacobs (2013) noted that writing a problem statement represents a critical role for all remaining sections in the research. The critical role is played because other sections in the dissertation depend on defining the problem statement. The issue that makes it hard to write a research problem is its interconnection to several other sections in the dissertation. All sections need to be thought of or considered in advance when writing the problem statement. These sections could include the research purpose, research objectives, a theoretical framework, the method, identification of research, data collection, data analysis, data interpretation, and conclusions, all of which are normal elements of the

dissertation process. As the student writes sections of the dissertation, each section touches the problem statement. Thus, there is a strong interconnection between stating the problem statement and all these sections interconnected to it and refraining from deviating from it. Figure 4 suggests a drawing of this intricate relation of the problem statement with other sections in the dissertation.
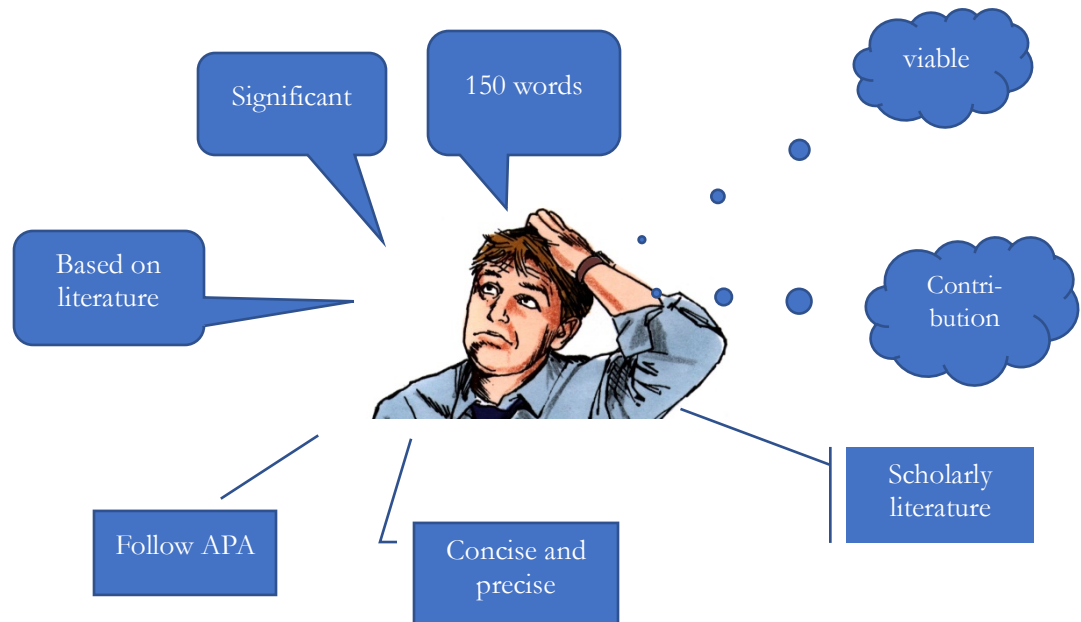

Figure 3. Confusion about buzz words in articulating research problem statement

This problem represents what is termed as a "look ahead" or a "peek" to other sections as the research problem statement was written. By look ahead or peak, we mean here that while the students are writing the research problem statement, they need to think about how it is going to affect other sections in the dissertation. For instance, defining a problem statement such that a student would not have resources for data collection would obviously complicate matters at the time of data collection. Similarly, developing a problem statement that leads to a research question that could not be answered, or worse, cannot be turned into a research question, will creates problems at a later stage.

It is prudent to think about other sections while writing the problem statement. This undoubtedly adds another layer of difficulty to articulating the problem statement. Defining a research problem statement that is consistent with the other sections in the dissertation increases the challenge. Taken into consideration that the problem statement is typically written at the beginning of the dissertation, it means the student has little knowledge of what is ahead, so looking ahead is going to be difficult.

It is also important to note that the novice researcher may unintentionally or unknowingly deviate from the proposed research problem and discuss areas not relevant to the proposed research. A strong research problem statement is intended not only to ensure that the student touches on the statement as all elements of the dissertation are written, but simultaneously refrains from meandering into elements not relevant to the research problem. Typically, the onus is on the students to maintain this focus as they write their research proposal and later, the thesis. However, the advisor also shoulders the responsibility of ensuring that reject work that is not focused, and that their student does not meander.

Figure 4. Interlink of Problem Statement with Other Sections in a Dissertation

HELPFUL FACTORS TO WRITING RESEARCH PROBLEM STATEMENT

Hawley (2003) wrote a book titled "Being Bright is not Enough." The book describes that writing a dissertation takes more than one set of skills. Jacob (2013) supports the same contention and additionally notes that writing a dissertation takes more than good writing skills. It is a mix of individual and institutional characteristics that must be present to help students be successful in writing a dissertation. So, identifying helpful factors to writing the problem statement could assist students in their writing of the research problem statement.

Some of these factors that are considered helpful to students when writing their research problem statement are explained in this section. We begin by explaining about self-efficacy and writing-efficacy and the role they play for writing dissertations in general and the research problem statement in particular. We then extend by discussing the literature review and the importance of knowing what is written about the topic or termed as literature review. Lastly, social support – a critical factor that is not often though of when considering the dissertation – is discussed.

WRITING EFFICACY AND SELF-EFFICACY

Self-efficacy has been the subject of discussions in different research and is considered a key contributor to the success of individuals who persist and complete tasks (Bandura, 1993, Bruning et al., 2013). Bandura (2006) explained that self-efficacy is often associated with the capability of the individual to complete tasks. Bruning et al. (2013) described self-efficacy as the personal confidence that one can complete tasks successfully in the intended domain. In other words, students with higher self-efficacy can tolerate more challenges and persist longer than those who have lower levels of self-efficacy.

Bandura (2006) identified four skills that contribute to the self-efficacy of an individual: cognitive skills, motivational skills, emotional skills, and behavioral skills. In terms of academic completion of tasks, Bandura (1993) noted that self-efficacy operates at three different levels when it comes to contributing to students' academic success. These include student's belief, the teacher's belief, and the faculty's belief in the self-efficacy of the students. McBrayer et al. (2018) conducted a study about the

relationship between self-efficacy and time to degree completion of doctoral study. The study concluded that students with higher self-efficacy end up completing the writing of their dissertation in a shorter time.

A sub section of the concepts discussed regarding the writing of doctoral dissertation is the writing-efficacy of the student. Writing efficacy is connected to self-efficacy and explained by Stadtlander et al. (2020). It is described as how well a researcher can accomplish writing tasks based on various skills, such as composition, grammar, and different other mechanical skills. Bruning et al. (2013) explained that writing efficacy is a function of three factors: writing ideation, writing convention, and writing self-regulation. In writing ideation, the researcher starts with writing ideas as they emerge in the mind, though how well the researcher expresses the ideas is also important. The writing convention is about the different conventions and rules that need to be followed when writing. And writing self-regulations are related to managing writing tasks and observing the writing habits that researchers develop.

Self-efficacy and writing-efficacy are both necessary components in successful completion of writing the dissertation and for writing the research problem statement as a first step taken to writing the dissertation. It is also a known fact that self-efficacy influences writing efficacy – that is, students with higher self-efficacy will make better progress. The question that could be asked regarding this study is how can mentors influence or contribute to enhancing both efficacies to successful writing the research problem statement.

Stadtlander et al. (2020) noted that a structured experience that is supervised by the mentor is helpful in improving self-efficacy of the students involved. Breitenbach (2019) suggested that designing a structured program with sufficient feedback could help more students complete their dissertation. Ewing et al. (2012) echoed similar contentions and designing a structured dissertation writing process helps with the acquisition of research skills.

Structured experience in the dissertation writing (and writing the research problem statement in this study) can be helped with using rubric type of feedback. Sparrow (2004) suggested that using rubrics improves teaching by explaining grading criteria. We argue that rubrics also help with writing efficacy and self-efficacy. That is, rubrics provide a clearer picture of what is expected, and therefore the students can approach the task with more confidence. One other way for improving the self-efficacy is through conducting a literature review.

LITERATURE REVIEW

The importance of conducting a literature review in writing a dissertation and in particular with writing a research problem statement cannot be underestimated. Randolph (2009), for example, noted the following about the purpose of conducting a literature review:

> Conducting a literature review is a means of demonstrating an author's knowledge about a particular field of study, including vocabulary, theories, key variables and phenomena, and its methods and history. Conducting a literature review also informs the student of the influential researchers and research groups in the field.
> (p. 2)

Jacobs (2013) noted the importance of conducting a literature review in order to narrow down the writing of research problem statement. Wee and Banister (2016) suggested that the literature review represents an added value for the researcher because they (the researcher) get up-to-date information on the issue being discussed in the problem statement. Torraco (2005) on the other hand, considers conducting a literature review very important because it gives the researcher exposure to the past writings on the topic and provides a framework on which to explore the future.

Taken from the statements above, we can detect that conducting a literature review is sometimes considered an "eye opener" for the researcher in terms of starting the dissertation with writing the

research problem statement (Columbaro, 2009). The literature review in turn gives the students ideas on what problems were discussed in the past regarding the problem identified in their research. It gives them examples of how problems statements were written in the past and they can model what they learn to write their own problem statement (Ebrahim, 2012, Levy & Ellis, 2006).

It is noted from above that the literature review is essential to writing the research problem statement. However, that begs the question whether completing a literature review in Chapter 2 should be moved to Chapter 1 before problem statement. In our opinion, this is not necessary. In order to understand what is written in the field about the problem statement, some literature review is essential and therefore expected in Chapter 1. However, full scale literature review can be conducted in Chapter 2 and within the sequence of the dissertation chapters.

It must be noted that the student will, almost by definition, unearth new information when conducting a literature review. This is true in Chapter 2 as well as over the rest of the dissertation journey. Accordingly, if necessary the research problem statement must be revisited and suitably modified or amended as needed to account for the new information. In the worst-case scenario, the student may find their specific problem suitably addressed in another publication. Rare as that occurrence may be, it would be naïve of any researcher to assume that will never happen to them.

THE ELEPHANT IN THE ROOM: SOCIAL SUPPORT

Social support, a major problem for students working on their dissertations, is the metaphorical elephant in the room. While widely accepted, the problem of lack of social support is not addressed in sufficient depth in doctoral programs. Ali and Kohun (2007) consider lack of social support at doctoral programs to be a major contributor to the high number of student attrition from doctoral programs. Devos et al. (2017) stress that student integration, socialization, and support from doctoral peers is important and will enhance student completion of their dissertations. Crauth (2017) wrote about socialization in doctoral programs, considering it as a requisite for writing the doctoral dissertation and further suggested that doctoral student attrition has social consequences. Ames et al. (2018) consider socialization as a prime factor in increasing retention in online doctoral programs.

Brill et al. (2014) conducted a study to suggest best practices in doctoral retention. The study addressed doctoral attrition from different points of views and provided suggestions on how to best work on a program that strives to keep the students in the program to complete their dissertations. Their suggestions focused in large parts on mentoring, and these come in the form of faculty mentoring and peer mentoring. This is echoed by Black (2017) who emphasized e-mentoring for doctoral students online. To summarize, the point discussed here is that social support and mentoring are prime support factors for the dissertation writing success and for writing the research problem statement.

A particular point of emphasis is peer mentoring. This could come in the form giving peer feedback as suggested by Philippakos (2017). This kind of feedback helps with the social integration of the students into the program (Ali & Kohun, 2007). While writing about empowering students with peer mentoring, Krusemark & White (2020) reported on a 2017 Lehigh University study geared towards reducing the loss of prospective students and how to increase a sense of belonging once students were enrolled. Their study was on undergraduate students, but lessons learned were worth noting. For instance, one big takeaway of their study was the need for large-scale peer mentorship. An outcome of the 2017 study was Lehigh University leadership adopting, as one solution, a formalized peer mentorship program, with clear goals, tracking, and assessments. And a year later, the program has shown positive results (Krusemark & White, 2020).

At the doctoral level, it might initially appear that peer mentoring is not much more than fellow students reviewing the work of their peers for the purpose of giving feedback. However, there is more to the phenomenon since peer mentoring helps in several other ways. First it helps give exposure of what other peers' problem statements look like. By sounding it out and analyzing the problem

statements, peer groups can help refine each other's problem statements. Second, it helps with social integration into the program. Friendship could be developed and feeling of belonging could be increased (Kumar & Johnson, 2017). Additionally, when a student receives feedback on their work, peer mentoring can provide an avenue for the airing of grievances. Work rejection and revision requests are an inevitable part of the doctoral journey. Conversing between peers helps the dejected student realize that they are not alone, that rejection is par for the course, that others have moved past this, and so will they (Columbaro, 2009).

CONSTRUCTING A RESEARCH PROBLEM STATEMENT

Blum and Preiss (2005) suggested a six steps approach for doctoral advisors to take when they coach students to writing their problem statement. Devos et al (2017) called them doctoral supervisors. We called them at various times in this study as Mentors or Advisors. Whether supervisors or mentors (or any other name), the question to ask is how they help with the writing of research problem statement.

In this section, we list some suggestions on how to teach students to write their research problem statement. We will divide it into four stages according to the Beeler's framework identified at the beginning of this study. In each stage we identify the stage, we suggest steps to follow at the identified stage and recommend some questions to think about to stimulate thinking at that stage. This type of question is a substitute to formally using a grading rubric. While grading rubrics can be used to grade the research problem statement, for each stage we do not deem this necessary. We propose a set of questions at each stage aimed at sensing that the stage is completed correctly.

STAGE 1: CRUDE STATEMENT OF THE PROBLEM

Beeler (1991) calls the first stage "Unconsciously incompetent". We describe this stage as "The students do not know that they do not know." In the early adjustment to doctoral study, students often do not know details of what needs to be included in the problem statement, and they are often in a "fog" when it comes to the details. They often do not know about the writing conventions or literature review. So, inundating them with long regulations about writing conventions and supporting literature is counterproductive in our opinion. The approach we suggest is to work with students to list the problem in a crude statement. The focus of this on three points at this stage. They can be explained as questions, as follows:

- Is it phrased as a problem statement (with cause and effect)?
- Is the problem statement researchable (research problem statement)?
- Is the research problem statement viable (time and resource constrains)?

The above could easily be part of a set of rubrics, as needed. We believe that these, or other questions in a similar vein could stimulate thinking about the problem statement. This would move the student correctly to Stage 2.

STAGE 2: FINDING KEYWORDS

The Beeler's model calls this stage "consciously incompetent." We call this stage "They know that they do not know." Awareness brought from Stage 1 is that the students are sensitive to what they do not know. They know that they need help phrasing the research problem statement. More constrains at this stage can be explained in terms of stating the research problem statement. For example, a look at the crude statement that was phrased in Stage 1 will be helpful. Look for "buzz words" or keywords to elaborate further. Also, connecting to literature review is helpful at this stage. Typical helpful questions that could be asked at this stage include:

- Do you have keywords in the problem statement?
- Are the keywords explained or elaborated enough on it in the statement?

- Do you have supporting literature to back that this is a problem that can be researched?

We believe that cogitating over and finding responses to questions like these will be helpful at this stage and help guide the student to the third stage.

STAGE 3: USING THE PEEL APPROACH

We call this step "They do not know that they know" as contrast to Beeler's model which refers to it as "Unconsciously competent." Competency was gained during the second stage. The student now knows more and can thus move to the next stage in writing. At this stage, we suggest using the Point Explain, Evaluate and Link (PEEL) method to gauge progress (Humphrey et al., 2015). This approach gives them the opportunity to look at their problem statement, begin the literature review, connect the problem statement with the different keywords, and make it sound like a research problem statement. Figure 5 below show a display of the PEEL approach.

P	E	E	L
Point, Make the point	Evidence Support opinion with evidence and data	Explain how evidence support problem statement	Link problem statement with other sections in dissertation

Figure 5. The PEEL approach

At this stage, the student may write what doctoral faculty sometimes refer to as term "Naked Paragraphs." These are paragraphs without citations or do not have references in them. In research studies, having too many "naked paragraphs" is a sign of insufficient research depth. Additionally, writing conventions and support can be enforced at this stage. Typical helpful questions at this stage can be:

- Do you have naked paragraphs in your problem statements?
- Are you connecting with the problem statement with research?
- Are you following writing conventions and APA in your statement of research problem?

We believe that questions like these will be helpful at this stage and will take them to the final stage.

STAGE 4: THE FINALIZATION STAGE

The Beeler's model calls this stage "Consciously Competent." We call this step "They know that they know." By now, students have become comfortable, their self-efficacy increases, and their writing efficacy increases as well. They also learn more about the other sections in the dissertation – the "lookahead ideas." Lookahead here can be enforced and can be brought up to discussion so as to complete the research problem statement.

The fourth and last step is to finalize the problem statement through supporting references or data (stats, figures, charts) to support that it is a problem worthy of research. Typical questions that can be asked at this stage:

- Do you have supporting data that this is a research worthy problem?
- Is the problem statement connected to other sections in the dissertation?
- Is the problem statement finalized in terms of writing conventions, viability, and research worthiness?

Table 1 summarizes our suggestions in four distinct stages that guide the students to writing their research problem statement. The second column provides a name to that stage, based on our suggestions. The third column list the questions that we deem helpful to ask at this stage. These questions are based our findings in the previous section we had and modified slightly to fit in the table.

Table 1 – Framework for the Completion of Writing Research Problem Statement

Adjustment stage	Suggestions for writing	Questions to ask
Stage 1	Phrasing the problem	Is it phrased as a problem statement (with cause and effect)? Is the problem statement researchable (research problem statement)? Is the research problem statement viable (time and resource constrain)?
Stage 2	Finding keywords to elaborate	Do you have keywords in the problem statement? Are the keywords explained or elaborated enough on it in the statement? Do you have supporting literature to back that this is a problem that can be researched?
Stage 3	The PEEL approach	Do you have naked paragraphs in your problem statement? Are you connecting the problem statement with research? Are you following writing conventions and APA in your statement of research problem?
Stage 4	Putting it all together. Supporting the problem statement with references and data.	Do you have supporting data that this is a research worthy problem? Is the problem statement connected to other sections in the dissertation? Is the problem statement finalized in terms of writing conventions, viability, and research worthiness?

THE ELEPHANT IN THE ROOM – AGAIN!

We must discuss social support once again at this juncture. This is because we consider social support to be essential to working on the dissertation. Different stages require different sets of steps to support the researcher. Community of Practice (CoP) and Community of Inquire (CoI) are both recommended (Kumar et al., 2011). It is a good idea to include support structure where students get feedback from not just their peers but also other faculty in the program as they go through the four stages of completion. It must also be noted that social support is not limited to any specific stage of our framework. On the contrary, not only could it be applied to all the stages of the adjustment and the writing of the research problem statement, but it is also applicable to the entire dissertation journey. This will further be illustrated in our research recommendations.

RECOMMENDATIONS

After conducting this study, we present our recommendations as one figure that includes the previous table we finalized and suggests the importance of social support through all the stages we have reached. Because social support is needed at all stages and at all levels, we included it as a shape and that spans all levels. Figure 6 lists the completed table after we included suggestions for social support.
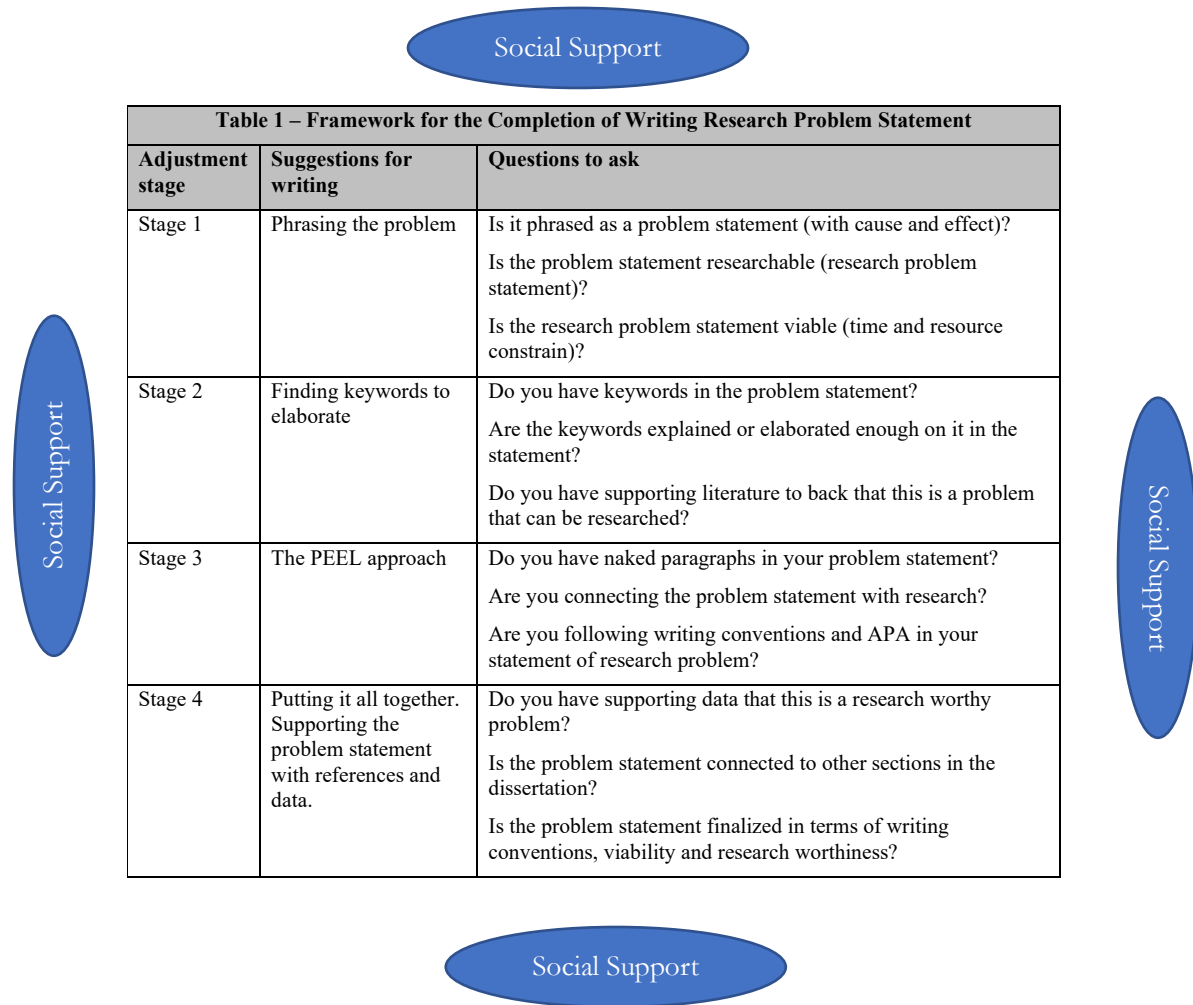
Table 1 – Framework for the Completion of Writing Research Problem Statement		
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Stage 4	Putting it all together. Supporting the problem statement with references and data.	Do you have supporting data that this is a research worthy problem? Is the problem statement connected to other sections in the dissertation? Is the problem statement finalized in terms of writing conventions, viability and research worthiness?

Figure 6. Suggested Framework for Writing Research Problem Statement

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