# Scaling up Graduate Writing Workshops: From needs assessment to teaching practices

Stephanie Link

Oklahoma State University | United States of America

**Abstract:** Graduate students often encounter obstacles related to written science communication that can set them back in their path towards degree completion. Efforts to support these students should be informed by what they actually need or desire; yet oftentimes, programs are developed based on assumptions or intuitions. In other cases, proven models from literature are used to develop programs; however, due to a lack of justification for approaches and vague descriptions of daily teaching and learning activities, the intricacies of design are relatively unknown. Thus, in institutes looking to establish research writing resources or build on existing infrastructure, more research is needed to demonstrate how needs assessment can directly transfer to program development. In this paper, I describe how findings from a campus-wide needs assessment of graduate students (N = 310) and faculty (N = 111) informed the development of design principles for a week-long dissertation writing workshop. The complete description of the intervention, including how main elements and content align with socio-cognitive perspectives to writing, can facilitate replication; theory building; and communication about effective writing instruction. This work also offers a springboard for future research and program development and establishes a blueprint for implementation of the workshop in institutes with similar contextual demands.

**Keywords:** needs assessment, dissertation writing workshop, genre-based instruction, self-assessment, accountability groups

**journal of WRITING RESEARCH**

## 1. Introduction

Earning a graduate degree from English- and some non-English medium universities worldwide often requires the completion of a dissertation or thesis[1]; yet, the demands of writing this genre are unfamiliar to many students from both native and nonnative English-speaking backgrounds (Lea & Street, 1998). Oftentimes, this lack of familiarity is because students have never attempted to write this genre (Paltridge, 2003), have limited training in writing for their own discipline (Toor, 2017), or are unaware of the conventions and expectations of what the genre should look like (Dudley-Evans, 1993). As a result, many students are left feeling psychological barriers to producing writing (Keranen & Munive, 2012) as well as financial and personal-relationship pressures to complete their writing (D'Andrea, 2002). While many additional barriers exist, all can impact degree completion rates and attrition. In a seven-year PhD completion project with 25 U.S. universities, the Council of Graduate Schools (2008) revealed that under ideal conditions, 25% of students who start a degree did not complete it. Their findings showed that successful mentorship and advising, especially on dissertation research, was a top factor influencing degree completion. These days, we continue to hear similar concerns across U.S. universities (e.g., Cassuto, 2013; Toor, 2017), marking an urgent need to scale up graduate student support systemically across the States.

Many major U.S. institutions, along with others globally, have established methods of preparing graduate students for becoming effective writers. Methods include, but are not limited to, course options (Cotos, Link, & Huffman, 2017; Freeman, 2016; Fredericksen & Mangelsdorf, 2014; Starfield & Mort, 2016), academic bridge programs for international graduate students (Fairbanks & Dias, 2016), writing intensives or residential writing (Burgoine, Hopkins, Rech, & Zapata, 2011; Simpson, 2013), and peer writing groups (Kumar & Aitchison, 2017). However, studies tend to describe interventions loosely or with great brevity, obscuring the crucial details relevant for replication. Often, there is also a limited description of the conceptual framework, teaching and learning activities, and intended learning outcomes. Furthermore, since institutional contexts can vary greatly (e.g., in size, research emphasis, and student demographics), institutions should consider how existing writing support models may or may not transfer effectively to their community of practice. As the editors of this special issue argue, this consideration requires a critical evaluation of institutional context, the theoretical and/or empirical rationales, and the key design principles of an intervention (Bouwer & De Smedt, 2018).

For institutions looking to establish a foundation for graduate student writing support or broaden their current options, needs assessment has become a commonplace practice. Curriculum and program designers can use the data to decipher current and desired conditions among students and/or faculty. In teaching English for academic or specific purposes, needs assessment is a defining feature (Johns & Dudley-Evans, 1991; Flowerdew & Peacock, 2001, West, 1994). Through the

Consortium on Graduate Communication, for instance, a range of needs surveys have been developed to assess general graduate communication needs as well as needs for writing and oral communication support (see https://www.gradconsortium.org). These examples are helpful for starting the assessment process, but surveys should be adapted with individual communities of practice and learning situations in mind since they are context-dependent and context-specific (Rosenfeld, Leung, & Oltman, 2001). For example, Huang (2010) designed a needs analysis to assess nonnative English-speaking students' language-learning needs in the context of an academic language support center in Canada. She assessed the importance of academic language skills as well as students' and instructors' perceptions of skill proficiency and found a distinct mismatch in perceptions. The results were intended to inform teaching and workshop components, but the direct transfer to practice was not discussed and is often left unaddressed in research. Thus, research is needed to show the explicit link between students' needs and how program development can meet those needs.

In this article, I describe a campus-wide needs survey for investigating native and nonnative student and faculty perceptions towards the need for additional graduate student writing support. The development of the survey, which transferred to the design of writing support, was informed by a social and cognitive perspective to writing (Vygotsky, 1978), specifically the notion that academic writing is a situated and social activity (Hyland, 2003). The survey results confirm the need for assistance with dissertation writing and suggest developing a writing workshop to fulfill the immediate research writing needs of graduate students. I outline how insights from the survey inform design principles used to build the workshop, including what is taught and in what sequence, how material is presented to students, and how teaching practices lead to measurable learning activities. This research provides a springboard for future writing support development and assessment within our university and among our peer institutions globally by providing clear descriptions of learning and teaching activities derived from inquiry-based practices. I also make suggestions for how collaboration between writing support specialists, university faculty, and administration can unify resources across a campus and how such efforts have enabled our community to develop additional programming.

## 2. The Institutional Context

In our comprehensive research university in the U.S., there are roughly 4500 graduate students and 1000 graduate faculty. About 200 academic programs, options, and specializations leading to certificates, master's, and doctoral degrees, including several interdisciplinary programs are offered with over 1000 master's degrees and almost 200 doctoral degrees awarded each year. While individual programs may offer discipline-specific writing support, the University Writing Center is the most centralized location for writing assistance. They offer one-hour workshops spanning various topics (e.g., writing a literature review and overcoming writer's block), one-on-one consultations

across seven university locations, and online feedback sessions. Since services are for both undergraduates and graduate students, requests from the Graduate College for more graduate-level support prompted the development of a working group. The group consisted of the Associate Dean of the Graduate College, the Director and Coordinator of the Writing Center, the Graduate Support Specialist in the University Library, and a faculty member of Applied Linguistics from the English Department. After forming the working group in Fall 2016, efforts were made to develop a campus-wide needs survey to determine the current and desired status of graduate-level writing support.

## 3.    Design of the Needs Survey

The primary goal of the needs assessment was to determine the current status of support and areas of need. To meet this goal, elements of the survey were first conceptualized around a cognitive and social view of writing—a socio-cognitive perspective that language, cognition, and context are inseparable (Vygotsky, 1978). Cognitivists view writing as a recursive, problem-solving process (Bereiter & Scardamalia, 1987) that involves the writer's task environment, long term memory, and writing process (Flower & Hayes, 1980). A needs analysis is a strong beginning point for collecting this understanding of students' thinking because it requires introspection and elicitation of students' mental processes (Hyland, 2003). However, from a sociocognitive perspective, learning processes cannot be fully explained by only looking at the cognitive processes; context, perception, social activity, and interaction should also be considered. In this regard, writing is a goal-oriented social process (Martin, 1993). That is, it is a situated and social activity (Bastian, 2010; Hyland, 2003; Miller, 1984). First, writing is social because it is a dynamic interaction between the writer and the reader. The writer needs not only to account for readers' level of interest and investment in the topic but also to cultivate a shared understanding about key concepts to foster reflection, sound interpretation, and critique. This combination of social and cognitive dynamics of writer-reader interactions confounds the writing process extensively. Thus, it was important for the needs survey to include perspectives of both the writer and the reader to obtain a more dynamic view of graduate students' writing expectations. In our case, we chose to survey students and graduate faculty advisors because these individuals usually develop a joint relationship during the graduate-level writing process.

Research writing is also a situated activity emphasizing contextual performance, or the physical and experiential context in which writing occurs (Nystrand, 1987). Furthermore, academic writing in the university context is situated in the expectations of the community. The notions of writing can be described as participating in genres with others in the community (Martin & White, 2005). From this viewpoint, writers bring their prior experiences, attitudes, and knowledge to a writing context, and these elements can impact their writing process. Thus, the survey elicited information about students' prior experiences seeking writing support in our university context and their

attitudes towards those experiences. It also included items to elicit their perceptions towards general writing tasks and genre-specific knowledge relevant to the discourse community. Overall, the student and faculty survey included five parts: (1) informed consent, (2) demographics, (3) prior writing experience, (4) perceptions towards writing support, and (5) perceptions towards writing importance and comfort (see Appendix A for the student survey).

After eliciting informed consent and demographic information, Part 3-Prior Writing Experience contained seven total items. Five items included questions about students' experiences seeking writing support from their disciplinary program and from the Writing Center or Graduate College to provide a context for situating their writing experiences in the frame of the needs analysis (e.g., Does your department/program offer a graduate-level course specifically for learning to write in your discipline (e.g., a course for learning how to write your dissertation/thesis)?). Two items asked what writing tasks are part of degree requirements (e.g., written exams, non-thesis projects such as capstones or creative components, theses/dissertations) and what other types of writing tasks students have experienced in their graduate program mainly through coursework (e.g., writing summaries, critiques, lab reports). These items helped to comprehensively understand what kind of genre-specific knowledge students need across programs and what social activity may be required of them.

Part 4-Perceptions Towards Writing Support contained a set of Likert-scale items, an open-ended question, and a checkbox item. The scale items elicited perceptions towards how much support is needed to fulfil both degree requirements when applicable and general writing tasks, as highlighted in Part 3. Perception-based items help to gain insight into students' cognition as it relates to writing across the disciplines. The Likert-scale item ranged from 1 to 4 (1 = a great deal, 2 = a lot, 3 = a little, 4 = none at all). There was also an option for selecting "I do not need to perform this task" to account for disciplinary variation. The open-ended item asked respondents to describe the kind of additional support desired, and the final item elicited students' interest in support for general writing topics (e.g., focus on grammar, style, data reporting, source-based writing). The item contained 17 checkbox options and an "other" box to elicit further ideas. The purpose of these items was to provide a ranking of most needed support features for helping students complete the various writing tasks in their degree.

Part 5-Perceptions Towards Writing Importance and Comfort elicited attitudes towards general and specific writing needs. The construct of comfort helps to describe students' self-efficacy, or perceptions of one's own capabilities to attain expected levels of writing (Bandura 1977, 1997; Zimmerman & Bandura, 1994). Future iterations of the survey may also consider measuring confidence to understand self-regulation processes, such as self-monitoring and self-evaluative standards (Zimmerman & Risemberg, 1997) or use self-efficacy judgments, such as the Writing Self-Efficacy Scale (WSES) by Pajares (2007). The items in this study, however, were developed based on research by Huang (2010) and Rosenfeld et al. (2001) to understand self-efficacy in

terms of students' feelings of ease in successfully completing writing tasks. While students may feel uncomfortable with certain tasks, those same tasks may not be perceived as important for their academic programs; it was necessary then to compare comfort to perceived importance of the tasks. The Likert-scales ranged from 1 to 5 (1 = extremely important/comfortable, 2 = very important/comfortable, 3 = moderately important/comfortable, 4 = slightly important/comfortable, 5 = not at all important/comfortable).

General writing needs included 10 items such as students' perceptions towards writing in response to an assignment and staying on topic without digressions or redundancies. An additional set of items was more specific to sections of a traditional dissertation/thesis (i.e., Introductions, Methods, Results, and Discussions/Conclusion). For example, students were asked "When you write your thesis/dissertation, how important is it to: begin a scientific argument?" They were also asked "…how comfortable are you with: beginning a scientific argument?" These items also allowed respondents to select "I do not need to perform this task" to account for possible disciplinary variation. The faculty survey contained similar questions, but faculty were asked to respond in reflection of students in their program. Once again, including faculty responses in the analysis can account for the interaction between writer and reader and provide an expanded understanding of the readers' perceptions towards the students' general and specific writing needs and the current state of graduate-level writing support.

Cronbach's alpha statistics (Cronbach, 1970) were computed for each section containing Likert-scale items in order to determine the survey's internal consistency (Table 1). Values indicate that the surveys have satisfactory reliability with α values of 0.7 or greater (Dörnyei, 2003).

**Table 1.** *Cronbach's Alpha Internal Consistency for Likert-scale Items in Combined Faculty and Student Needs Surveys*

| Perceptions Towards Writing Support | Alpha | Internal Consistency | |
|---|---|---|---|
| Part 4: Question 17-Needed Support | 0.969 | $\alpha > 0.9$ | Excellent |
| Part 5: Question 20-Importance: degree requirements | 0.880 | $\alpha > 0.8$ | Good |
| Part 5: Question 21-Comfort: degree requirements | 0.935 | $\alpha > 0.9$ | Excellent |
| Part 5: Question 22-Importance: thesis/dissertation | 0.930 | $\alpha > 0.9$ | Excellent |
| Part 5: Question 23-Comfort: thesis/dissertation | 0.958 | $\alpha > 0.9$ | Excellent |

## 4. Results from the campus-wide needs assessment with students and faculty

In Fall 2016, an e-mail from the Graduate Dean was sent out to all graduate students and graduate faculty, inviting them to voluntarily complete the online needs survey administered through Qualtrics, an online survey platform. Students could opt in for entering a drawing to receive one of five $50 gift cards. Of about 4521 graduate students and roughly 1000 graduate faculty who could access the survey, 372 (8.2%) students and 149 (14.9%) faculty responded. Of those who accessed the survey, 310 students and 111 faculty completed it, for a completion rate of 83.3% and 74.5%, respectively. Since these numbers represent only a small portion of the student and faculty population, necessary caution was taken in interpreting the findings. Demographics of both groups are presented in Table 2. Representation was fairly balanced across disciplines, with the exception of Education where student respondents (21.3%) greatly outnumbered faculty respondents (7%).

**Table 2.** *Demographic information from graduate student (N = 310) and faculty (N = 111) respondents*

|  | Graduate Students | | Graduate Faculty[a] | |
|---|---|---|---|---|
|  | **n** | **%** | **n** | **%** |
| **College** |  |  |  |  |
| Agricultural Sciences and Natural Resources | 50 | 16.1 | 24 | 22 |
| Arts and Sciences | 89 | 28.7 | 35 | 32 |
| Center for Health Sciences | 17 | 5.5 | 3 | 3 |
| Center for Veterinary Health Sciences | 0 | 0 | 2 | 2 |
| Education | 66 | 21.3 | 8 | 7 |
| Engineering, Architecture, and Technology | 35 | 11.3 | 12 | 11 |
| Human Sciences | 19 | 6.1 | 6 | 6 |
| Spears School of Business | 34 | 11 | 19 | 17 |
|  |  |  |  |  |
| **Degree** |  |  |  |  |
| Certificate | 2 | 0.6 |  |  |
| Doctorate | 145 | 46.8 |  |  |
| Dual Degree | 8 | 2.6 |  |  |
| Masters | 151 | 48.7 |  |  |
| Other: Not specified | 3 | 1 |  |  |
|  |  |  |  |  |
| **Academic Appointment** |  |  |  |  |
| Assistant Professor |  |  | 31 | 28 |
| Associate Professor |  |  | 39 | 36 |
| Full Professor |  |  | 20 | 18 |

| | | |
|---|---|---|
| Distinguished/Endowed Professor | 4 | 4 |
| Regents Professor[b] | 8 | 7 |
| Other: Not specified | 7 | 6 |
| | | |
| **Age at start of program** | | |
| 21-25 | 120 | 38.7 |
| 26-30 | 101 | 32.6 |
| 31-35 | 38 | 12.3 |
| 36-40 | 12 | 3.9 |
| 41-45 | 22 | 7.1 |
| over 45 | 17 | 5.5 |
| | | |
| **Student Status** | | |
| Full-time | 247 | 80 |
| Part-time | 62 | 20 |
| | | |
| **Gender** | | |
| Female | 172 | 55.5 |
| Male | 136 | 43.9 |
| Not listed | 2 | 0.6 |
| | | |
| **Language Background** | | |
| Native English speaker | 220 | 71 |
| Nonnative English speaker | 90 | 29 |

*Note.* [a] Of the 111 faculty respondents, two did not fill out demographic information. Since the survey was aimed at identifying students' needs from student and faculty perspectives, we did not account for faculty age, gender, and language background. [b] A Regents Professor is the highest of faculty ranks in the United State and is reserved for full professors with exceptional national and international achievements.

## 4.1 Prior Writing Experience

To determine the spread of writing support across campus, students were asked to indicate whether their discipline-specific programs offer graduate-level research writing courses or workshops. For courses, 68% of respondents said that no such course is offered, and 99% of respondents said that no such workshop is offered, suggesting that there may be a lack of discipline-specific support within programs. Among respondents that participated in a discipline-specific course (n = 62), 18% were somewhat dissatisfied or very dissatisfied. Students made comments about needing more feedback on writing, options at different times of students' graduate career, and options for learning how to write for publication. Additionally, students wanted more writing

practice and support in beginning an argument. The majority, however, were somewhat satisfied (48%), very satisfied (25%), or neither/nor (9%). In general, students were happy to receive an overview about the end product and to have time devoted to producing the product; even so, they made comments about needing more in-depth support about writing. For example, one student commented, "The course was fine but there is so much to consider and really no step-by-step way of completing the writing tasks necessary for PhD-level work." Another stated, "The course was designed to aid the writing of a research proposal. It fulfilled its intention on this, but we had no information on grammar, sentence construction, writing techniques...." Although these findings only represent a fraction of the total graduate student population, they reflect a common concern that research advisors have disciplinary knowledge, but they do not necessarily have the ability to present knowledge of discourse organization and language issues (Woodward-Kron, 2007). Therefore, it can be concluded that when considering how to expand support, writing specialists should be part of the solution.

While individual programs do not seem to offer many writing support options, the Writing Center holds regular single-session workshops throughout the semester. It was thus important to determine if these same students seek out these opportunities in efforts to understand to what extent adding more support options would be viable for the campus community. Surprisingly, 76% (n = 236) of the respondents did not take advantage of any workshops. Fourteen percent (n = 44) attended one, 7% (n = 21) attended two, and the remaining 3% (n = 9) attended three or more. Of the ones attended, the abstract writing workshop and literature review workshop were most popular. The low attendance at workshops could be due to a number of variables, including the time the workshops were offered and the interest in the topics. However, a likely explanation is the extent to which students access or understand where to access information about workshop opportunities. For example, one student commented:

> As a doctoral student, writing up the dissertation is very important. There is a writing workshop provided by the writing center, but I believe it should be more promoted and publicized to graduate students. I was looking for the chance to attend the workshop, but it seems like the information is difficult to find. The detailed information (e.g., dates, time, place, program, etc.) should be announced in advance so that graduate students can schedule out their timelines.

At our university, we advertise resources on the Writing Center, Graduate College, and Library websites. Students also receive an e-mail memo each Monday. Yet, assessing information seems to be a uniform problem for students who focus extensively on their program offerings and research and less on reaching out for opportunities to gain additional skills. Albeit a seemingly low percentage, the data do show that students are attending workshops to some extent, suggesting that there is an audience for continued

efforts but that efforts need to be publicized at the program-level through graduate faculty.

To align the content of support with students' writing requirements during their graduate education and to understand more comprehensively what writing experiences students have or will encounter across disciplinary programs, respondents were asked to identify the required degree requirements before graduation (beyond assignments in course). These requirements vary across programs, and some programs require more than one requirement. As expected, the majority are asked to complete a thesis or dissertation (n = 229, 61%). Of the remaining, 37% have written exams (n = 139), 18% must complete a qualifying paper(s)/formal report (n = 69), 14% must complete a capstone project/creative component in lieu of a thesis/dissertation (n = 51); 4% do not have any writing requirements beyond coursework, and 3% have other requirements (e.g., portfolio, oral examination, progress reports, or personal goal statements). With the large number of students completing theses or dissertations, support in this area would be logical, but it is first important to validate this finding based on students' perceived needs and to determine more precise areas of desired support.

## 4.2 Perceptions Towards Writing Support

To validate whether the degree requirements are also indicators of needed support, students were asked to indicate how much additional support they need for completing the same tasks discussed in the previous section. It is evident from Figure 1 that the genre of a thesis or dissertation is not only the most frequently prescribed throughout campus programs but also the genre that students need the most additional support. This need is followed by qualifying papers/formal reports, capstone project/creative component, and then written exams.
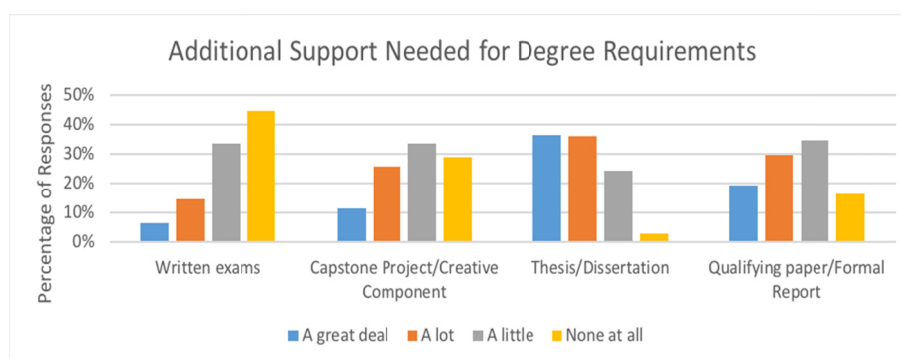


*Figure 1:* Percentage of students (N = 310) seeking additional support for writing tasks specific to degree requirements. Data represent responses of students who need to complete each of these tasks during their graduate program.

More specifically, students indicated that the area of most needed support irrespective of degree requirements is for writing business/grant proposals and literature reviews (Figure 2). Secondary areas included conference abstracts, business letters and memos, and critique/article review. "Other" areas included full manuscript writing, medical documentation, and policy briefs.

In response to the kind of workshops desired, once again, the majority of respondents (54%) were interested in thesis and dissertation workshops (Figure 3).



Student Survey: Additional Support Needed for General Writing Tasks
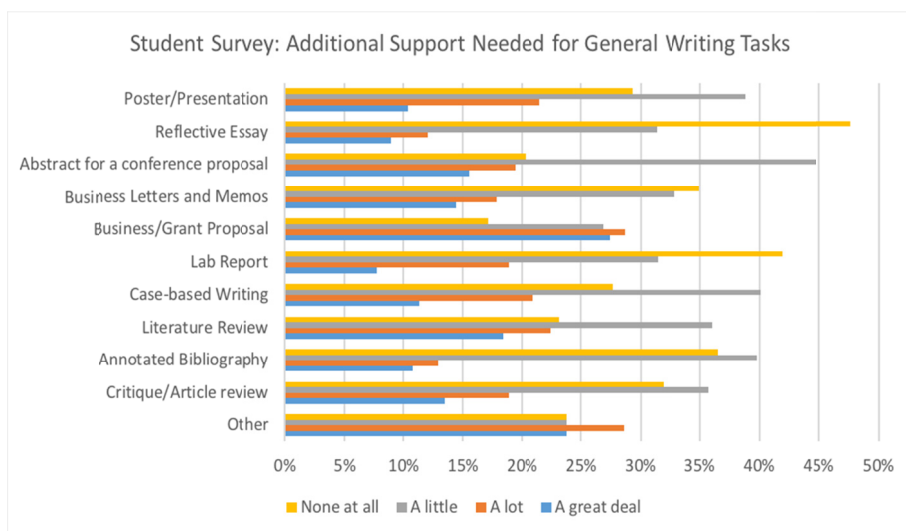
*Figure 2:* Percentage of students (N = 310) seeking additional support for writing tasks non-specific to degree requirements. Data represent responses of students who need to complete each of these tasks during their graduate program.

However, since thesis or dissertation writing is a broader category than others in the list, it is interesting to note that editing strategies (45%), effective data reports (44%), and writing research papers (44%) also topped the list and are key findings that inform design principles discussed later in the paper.

Open coding of qualitative responses using grounded theory (Charmaz, 2006; Glaser & Strauss, 1967) revealed that 38.8% of open-ended student responses, which were the majority, focused on the desire for more workshops. Here are a couple student responses that suggest workshops should help with structuring research writing and provide specialized support staff:

1. A journal/thesis/dissertation writing workshop that can take one through the writing process from start to finish. Journal articles/dissertations are structure-based write-ups (compared to creatively written up pieces), so understanding

that base structure will be useful for the long term. (PhD student, Business Administration, Nonnative Speaker)

2. I believe it would be beneficial to have more writing workshops and to perhaps have specialized staff members available that can provide aid in organizing the writing and in editing. (MS student, Biomedical Sciences, Native Speaker)

These comments further inform design principles considered in our programming. Other themes that emerged from open-ended student responses included the need for more support from or in the form of writing courses (12.6%), the writing center (8.7%), departments and professors (8.7%), online support (5.8%), and writing groups (4.8%), which will be considered for future development.
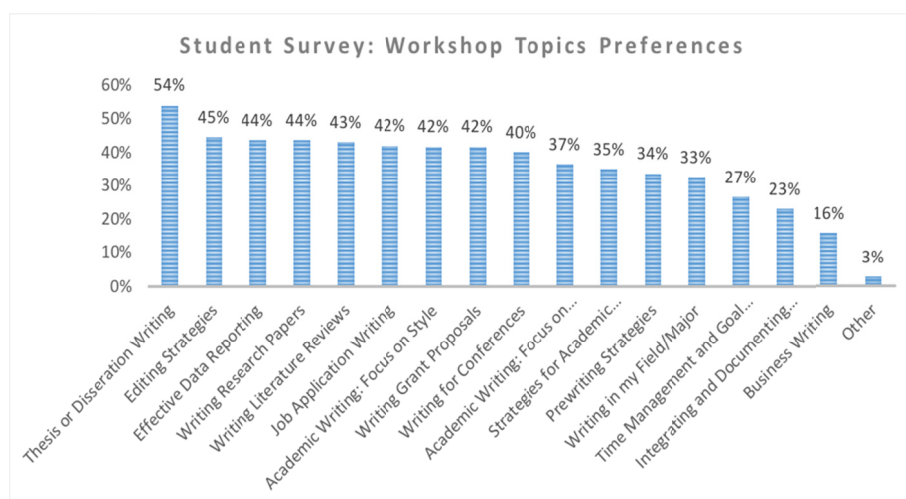


**Figure 3:** Percentage of students' desired topics for workshop options.

## 4.3    Perceptions Towards Writing Importance Versus Comfort

To uncover with more specificity what students need, both graduate students and faculty were asked about the importance of different writing tasks and students' own or perceived comfort in these same areas. The first set of items was geared towards general writing skills, which were adapted from Huang (2010). Scales ranged from *extremely important (1)* to *not at all important (5)* and *extremely comfortable (1)* to *extremely uncomfortable (5)*. First, means and standard deviations were computed for each survey item for both student and faculty groups to determine areas of importance and comfort. Mann-Whitney *U* Tests, which is used when data from the dependent variable are ordinal, were then run to determine whether there were statistically significant differences between mean perceptions of importance and comfort in both groups.

Descriptive statistics of student and faculty responses towards the importance of and comfort in general writing skills are summarized in Table 3. Students rated organizing writing (*M* = 1.47, *SD* = .68), using relevant reasons and examples (*M* = 1.54, *SD* = .76), and demonstrating a command of English (*M* = 1.61, *SD* = .82) as the most important skills. Interestingly, these three represented three of four items that students were least comfortable with performing. Faculty also rated using relevant reasons and examples (*M* = 2.02, *SD* = .75) and organizing writing (*M* = 2.04, *SD* = .39) as the top most important skills, but they also recognized using appropriate transitions (*M* = 2.06, *SD* = .72) as most important.

**Table 3.** *Descriptive Statistics of Student (N = 310) Versus Faculty (N = 111) Ratings of Writing Importance and Students' Comfort (General Writing Skills)*

| Survey Items[a] | Importance | | | | Comfort | | | |
|---|---|---|---|---|---|---|---|---|
| | **Students** | | **Faculty** | | **Students** | | **Faculty** | |
| | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Stay on topic | 1.64 | 0.68 | 2.08 | 0.74 | 1.83 | 0.83 | 2.16 | 0.83 |
| Show awareness of audience | 1.81 | 0.84 | 2.08 | 0.80 | 1.96 | 0.93 | 2.34 | 0.90 |
| Use knowledge resources | 1.68 | 0.93 | 2.08 | 0.92 | 2.00 | .96 | 2.12 | 0.90 |
| Effectively summarize and paraphrase | 1.75 | 0.90 | 2.08 | 0.63 | 2.19 | 1.05 | 2.12 | 0.98 |
| Organize writing | 1.47 | 0.68 | 2.04 | 0.39 | 2.08 | 1.03 | 2.12 | 1.03 |
| Use appropriate transitions | 1.66 | 0.78 | 2.06 | 0.72 | 2.20 | 1.05 | 1.86 | 0.92 |
| Use relevant reasons and examples | 1.54 | 0.76 | 2.02 | 0.75 | 2.00 | 0.95 | 2.12 | 0.93 |
| Produce sufficient quantity of text | 1.83 | 0.91 | 3.43 | 1.05 | 2.19 | 1.09 | 2.12 | 0.89 |
| Demonstrate a command of English | 1.61 | 0.82 | 3.47 | 0.85 | 2.02 | 1.08 | 2.12 | 1.03 |
| Demonstrate facility with vocabulary | 1.82 | 0.90 | 2.06 | 0.96 | 2.19 | 1.12 | 2.12 | 0.94 |

[a] *Items represent abbreviations of actual items shown in Appendix A*

A Mann-Whitney *U* test indicated three items with statistically significant differences between students and faculty in perceptions of importance. Producing writing that effectively summarizes and paraphrases the works and words of others was perceived with greater importance by students compared to faculty, *U* = 13741, *z* = -3.45, *p* = .001, *r* = .33. Similarly, there was a significant difference in the perceived importance of organizing writing in order to convey major and supporting ideas (*U* = 13235.50, *z* = -4.06, *p* = .0001, *r* = .39) and demonstrating a command of standard written English, including grammar, phrasing, effective sentence structure, spelling, and punctuation (*U* = 13858.50, *z* = -3.46, *p* = .001, *r* = .33). In general, the importance of each general writing skill was perceived similarly. However, when comparing mean differences in perceived levels of comfort, results showed significant contrast in perspectives (Table 4). In all general writing skills, there was a significant difference (*p* < .001) between faculty versus student ratings. That is, students consistently rated themselves as more confident than what faculty perceived. This mismatch possibly occurred because of students' limited self-awareness or abilities to self-assess, marking a critical need for students to obtain such skills as they progress in their programs.

**Table 4**. *Difference in Mean Perceptions of Importance and Comfort Between Faculty (N = 310) and Students (N = 111) for General Writing Skills (Mann-Whitney U Test)*

| Survey Items[a] | Importance | | | Comfort | | |
|---|---|---|---|---|---|---|
| | *z* | *p* [b] | *r* | *z* | *p* | *r* |
| Stay on topic | -0.19 | .85 | 0.02 | -8.74 | < .001 | 0.43 |
| Use knowledge resources | -0.45 | .65 | 0.04 | -8.28 | < .001 | 0.40 |
| Effectively summarize and paraphrase | -3.45 | < .01 | 0.33 | -8.41 | < .001 | 0.41 |
| Organize writing | -4.06 | < .001 | 0.39 | -9.36 | < .001 | 0.46 |
| Use appropriate transitions | -0.32 | .75 | 0.03 | -8.79 | < .001 | 0.43 |
| Use relevant reasons and examples | -1.06 | .29 | 0.10 | -8.46 | < .001 | 0.41 |
| Produce sufficient quantity of text | -2.09 | .04 | 0.20 | -6.08 | < .001 | 0.30 |
| Demonstrate a command of English | -3.46 | < .01 | 0.33 | -9.37 | < .001 | 0.46 |
| Demonstrate facility with vocabulary | -0.71 | .48 | 0.07 | -8.38 | < .001 | 0.41 |

a *Items represent abbreviations of actual items shown in Appendix A*

b *two-tailed significance*

Descriptive statistics of student and faculty responses towards the importance of and comfort in research writing skills are summarized in Table 5. Students rated introducing your research purpose (*M* = 1.31, *SD* = .66), demonstrating your knowledge of the

research topic ($M = 1.37$, $SD = .74$), and showing the value of your research ($M = 1.39$, $SD = .77$) as the most important skills. Faculty also rated introducing your research purpose ($M = 1.25$, $SD = .46$) and demonstrating your knowledge of the research topic ($M = 1.33$, $SD = .61$) as the most important research writing skills, followed by describing the approaches used to collect and/or analyze data ($M = 1.35$, $SD = .67$).

**Table 5.** *Descriptive Statistics of Student (N = 310) Versus Faculty (N = 111) Ratings of Writing*

| Survey Items[a] | Importance | | | | Comfort | | | |
|---|---|---|---|---|---|---|---|---|
| | **Students** | | **Faculty** | | **Students** | | **Faculty** | |
| | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Begin the written argument | 1.91 | 1.04 | 1.71 | 1.04 | 2.43 | 1.06 | 3.14 | 1.05 |
| Gain the reader's attention | 1.77 | 0.97 | 2.22 | 1.15 | 2.41 | 1.07 | 3.19 | 0.89 |
| Identify an area to be addressed | 1.40 | 0.69 | 1.36 | 0.63 | 2.26 | 1.09 | 3.12 | 1.08 |
| Demonstrate knowledge of topic | 1.33 | 0.60 | 1.33 | 0.61 | 2.21 | 1.04 | 3.07 | 1.07 |
| Take an evaluative stance | 1.63 | 0.86 | 1.80 | 0.91 | 2.45 | 1.09 | 3.62 | 0.94 |
| Introduce your research purpose | 1.29 | 0.58 | 1.25 | 0.46 | 2.12 | 1.02 | 3.02 | 1.04 |
| Describe the approaches used | 1.43 | 0.72 | 1.35 | 0.67 | 2.24 | 1.09 | 3.03 | 1.02 |
| Explain steps taken in the study | 1.52 | 0.78 | 1.46 | 0.64 | 2.12 | 1.02 | 2.81 | 0.98 |
| Persuade readers of credibility | 1.57 | 0.85 | 1.88 | 0.96 | 2.48 | 1.10 | 3.52 | 0.91 |
| Transform data into results | 1.40 | 0.71 | 1.44 | 0.69 | 2.53 | 1.16 | 3.23 | 1.14 |
| Design clear visual representations | 1.58 | 0.81 | 1.63 | 0.89 | 2.33 | 1.18 | 3.22 | 1.08 |
| Compile findings into a history | 1.60 | 0.91 | 1.58 | 0.88 | 2.49 | 1.15 | 3.63 | 0.99 |
| Communicate own understanding of the results | 1.44 | 0.70 | 1.36 | 0.65 | 2.40 | 1.13 | 3.49 | 1.10 |
| Provide an extended analysis of your research | 1.58 | 0.78 | 1.81 | 0.97 | 2.55 | 1.13 | 3.56 | 1.05 |
| Expand meaning of findings | 1.71 | 0.90 | 1.84 | 0.91 | 2.66 | 1.14 | 3.59 | 1.04 |
| Indicate how the findings add/relate to the field | 1.43 | 0.69 | 1.44 | 0.66 | 2.36 | 1.13 | 3.43 | 1.02 |
| Acknowledge limitations | 1.54 | 0.75 | 1.63 | 0.69 | 2.16 | 1.00 | 3.19 | 1.02 |
| Show the value of your research | 1.37 | 0.71 | 1.51 | 0.71 | 2.41 | 1.09 | 3.29 | 0.96 |

[a] *Items represent abbreviations of actual items shown in Appendix A*

*Importance and Students' Comfort (Research Writing Skills)*

These results are confirmed through a Mann-Whitney *U* test (Table 6) that indicated two items with statistically significant differences between students and faculty in perceptions of importance: gaining the reader's attention ($U = 9313$, $z = -3.27$, $p = .001$, $r = .16$) and persuading the readers of the credibility of the research ($U = 9822.50$, $z = -2.76$, $p = .006$, $r = .13$). Similar to earlier findings related to general

writing skills, mean differences in perceived levels of comfort with research writing skills indicated a statistically significant difference for all items ($p < .001$) between faculty versus student ratings.

**Table 6.** *Difference in Mean Perceptions of Importance and Comfort Between Faculty (N = 310) and Students (N = 111) for Research Writing Skills (Mann-Whitney U Test)*

| Survey Items[a] | z | p[b] | r | z | p | r |
|---|---|---|---|---|---|---|
| Begin the written argument | 1.86 | .06 | 0.09 | -4.16 | < .001 | 0.20 |
| Gain the reader's attention | -3.27 | < .01 | 0.16 | -5.66 | < .001 | 0.28 |
| Identify an area to be addressed | 0.46 | .65 | 0.02 | -5.84 | < .001 | 0.28 |
| Demonstrate knowledge of topic | 0.01 | .99 | 0.00 | -5.99 | < .001 | 0.29 |
| Take an evaluative stance | -1.58 | .11 | 0.08 | -7.81 | < .001 | 0.38 |
| Introduce your research purpose | 0.01 | .99 | 0.17 | -6.53 | < .001 | 0.32 |
| Describe the approaches used | 0.95 | .34 | 0.05 | -5.78 | < .001 | 0.28 |
| Explain steps taken in the study | 0.10 | .92 | 0.00 | -5.31 | < .001 | 0.26 |
| Persuade readers of credibility | -2.76 | < .01 | 0.13 | -7.11 | < .001 | 0.35 |
| Transform data into results | 0.67 | .50 | 0.03 | -4.60 | < .001 | 0.22 |
| Design clear visual representations | -0.16 | .87 | 0.01 | -4.60 | < .001 | 0.22 |
| Compile findings into a history | 0.30 | .76 | 0.01 | -7.48 | < .001 | 0.36 |
| Communicate own understanding of the results | 0.85 | .40 | 0.04 | -7.06 | < .001 | 0.34 |
| Provide an extended analysis of your research | -1.60 | .11 | 0.08 | -6.69 | < .001 | 0.33 |
| Expand meaning of findings | -1.27 | .20 | 0.06 | -6.16 | < .001 | 0.30 |
| Indicate how the findings add/relate to the field | -0.34 | .73 | 0.02 | -7.18 | < .001 | 0.35 |

[a] *Items represent abbreviations of actual items shown in Appendix A*

[b] *two-tailed significance*

One explanation for these findings may be due to the different stages in which students find themselves during a graduate program (e.g., pre-dissertation phase vs. dissertation-writing phase); students may feel more comfortable about their abilities prior to actually having to formally complete a task. Faculty responses could be accounted for because they have the opportunity to see how students perform overtime; their perceptions thus

seem to reflect a more general, overarching view of students' needs and not necessary the exact, immediate needs that students desire throughout an academic program. The discrepancy in perspectives may also be because students have a limited awareness of their own writing performance in relation to their peers or that there is a limited awareness on the part of faculty in terms of what they understand about their students' writing needs. This finding could explain why students often feel they receive vague suggestions for what needs to be written but not concrete advice and direction for how to write (Rogers, Zawacki, & Baker, 2016). In other words, faculty may assume that students do not need assistance with how to write research when indeed they do. Furthermore, these results may be because of students' limited awareness of genre conventions considering oftentimes graduate students lack familiarity with research writing because they have never attempted to write research reports (Paltridge, 2003). Due to these critical mismatches in perceptions, it seems rather evident that students need to develop more skills in self-monitoring and self-evaluative standards, which is why we emphasized this need throughout our writing intervention.

## 5. Addressing campus needs: design principles, teaching practices, and learning activities

Information from the needs assessment indicate that both faculty and student populations acknowledge the limited resources available to students. That is, our graduate students are in need of support, and current programs may not be sufficient to meet their needs. Many students desire more workshops that address specific concerns related to research writing, especially for completing theses and dissertations. Students also mentioned wanting access to writing specialists during the workshops. More specifically, respondents to our survey suggest that more support is needed in the following areas:

- Receiving more feedback on writing;
- Getting more writing practice and allocating time;
- Writing effective data reports;
- Staying on topic and writing to an audience;
- Editing versus revising strategies;
- Using resources to support ideas, analyze, and refine arguments;
- Writing for publication;
- Understanding the general structure of an end product;
- Beginning an argument;
- Having options at different times of students' graduate career.

Thus, the Graduate Dean formed a team of individuals from various units across campus. The Associate Dean of the Graduate College was included for engaging graduate faculty, promoting the workshop to students, maximizing communication between the Dean, marshalling resources across academic units, and providing overall

leadership. The University Writing Center (both the Director and Coordinator) was included for their established infrastructure and knowledge about writing consultation. They were able to address needs for more feedback and writing practice and provide mentorship on how to allocate sufficient time to writing, to write effective data reports, to stay on topic, and to write to an audience. The graduate support faculty member from the Library was included for his knowledge about databases, technologies, and policy. He was able to address the need for students to use resources to support ideas, analyze, and refine arguments. The final member was myself, an applied linguist from the English Department. I was included for my expertise in the genre of research writing. I am able to complement the Writing Center's approach to writing by offering instruction on writing for publication, understanding the general structure of dissertations and theses, and beginning an argument.

In an attempt to address students' final need for having options at different times of students' graduate career, the team decided on several week-long dissertation writing workshops when the university is not in session (typically January, May, August) as well as thesis workshops that take on a slightly different format and will not be discussed in this paper. However, in the beginning of implementation, we limited registration to student ready to begin writing their dissertation. We started with offering the workshop to 12 students and are now able to accommodate for up to 30 students each workshop. To provide comprehensive support that aligns with the view of writing being a socio-cognitive activity, we decided to include peer writing/accountability groups consisting of a facilitator who would be a trained writing specialist, typically a PhD student from the Writing Center. The facilitator served as the necessary guidance for assisting students within their zone of proximal development, or "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). The facilitators led groups of 6 to 8 and were readily available throughout the week to provide feedback as well as guidance on how to practice writing and allocate their time. The groups provided a social community of practice for ongoing discussion and reflection. They also became a space for reflecting on strategies to overcome writing obstacles. Groups also organized accountability sessions following the workshop to help students maintain progress, continue to assess their goal attainment, and build on the social components of the writing process (e.g., discussion and group reflection). We started with eight post-workshop sessions, which has now changed to four or six sessions depending on when the workshop is offered (e.g., May workshops included four group sessions throughout the summer).

Apart from this basic structure, our group strategically planned the daily schedule so that time was not spent solely on writing but also on general and specific writing support as highlighted in the needs survey. The following section aligns with recommendations set forth by the present special issue editors for how to report writing interventions (Bouwer & De Smedt, 2018). Specifically, the section introduces the

design principles, learning activities, and teaching practices to produce a workshop with the highest potential impact given available personnel, time constraints, and immediate need.

## 5.1    Design principles

The goal of the workshop was to provide a socio-cognitive writing activity that addresses students' immediate writing needs in order to impact students' level of comfort in writing, especially for research purposes. Although the respondents may not have been fully representative of the student population, their responses provided a strong starting point that allows us to build support options in the future. We draw from their responses to develop design principles based on Merrill's (2002) instructional theory of writing that suggests learning is promoted when learners are engaged in solving real-world problems (Principle 1: Problem-centered), when existing knowledge is activated as a foundation for new knowledge (Principle 2: Activation), and when new knowledge is demonstrated to the learner (Principle 3: Demonstration), applied by the learner (Principle 4: Application), and integrated into the learner's world (Principle 5: Integration). This framework supports the view of writing as a social and situated activity and is therefore a nice fit for development of the workshop.

The design principles are centered around a common problem that all students need help with their dissertation writing process, and this is why they registered for the workshop. Dissertation writing is a real-world problem because completion of one's writing is often the gatekeeper to degree completion. Table 7 summarizes how we integrated Merrill's (2002) design principles using Rijlaarsdam, Janssen, Rietdijk, & van Weijen's (2018) reporting scheme for writing interventions. These principles justify the set of learning activities and teacher activities that were chosen for the workshop and can be used to describe, compare, and evaluate our approach with others.

We conducted empirical evaluations of each workshop to validate intended outcomes, which have informed minor changes to our workshop schedule (e.g., the kind of general writing topics discussed) while our principles have remained constant.

However, these results are beyond the scope of the current study. Detailed descriptions of learning activities and teaching practices will be provided in the following sections. While each learning activity may cycle through additional phases (e.g., generating writing goals may also include demonstration, application, and/or integration), these choices are dependent on the teacher at the time of instruction. I thus focus here on the macro phase of each learning activities as implemented in our workshop specifically.

Table 7. *Content literacy framework outlining design principles, teaching practices and learning activities for the dissertation writing workshop.*

| Design principle | Leading Academic Unit | Teaching practices that stimulate or lead to learning activity | | Learning Activity | |
| --- | --- | --- | --- | --- | --- |
| | | Description | Description | Description | Explanation |
| Principle 2: Activation (previous experience) | Writing Center | Strategy instruction Goal setting How to write a lot | SMART goals can form a heuristic for students' self-assessment of progress. Learning how to write a lot can limit specious barriers. | Generating writing goals specific to completing components of dissertation and avoiding procrastination | Goal setting is a form of self-regulated strategy development and can help learners regulate their learning process. Procrastination is often due to barriers to writing. |
| Principle 4: Application (practice consistency) | Writing Center | Dissertation writing time Reflection with accountability group and facilitators Self-assessment | Learners may not know what kind of goals truly are SMART. Initial writing time can gear students up for reflection of what can be accomplished in a short amount of time. | Evaluating feasibility of daily writing goals | Once goals are set, ongoing reflection about whether or not goals were achieved can provide learners with knowledge about how to adjust in order to achieve future goals |

| Principle 2: Activation (structure) | English Department | Discussion about prior knowledge of research for scaffolding instruction | Discussion includes questions like: What is the purpose/value of an Introduction chapter? What components do you expect to see in an Introduction chapter? What makes an Introduction chapter effective? Ineffective? | Activating prior knowledge about the research writing genre | Learners who are writing their dissertation most definitely have prior knowledge about the research writing process that they can draw from. By activating this background knowledge, learners can begin placing new content into their working and then long-term memory |
|---|---|---|---|---|---|
| Principle 3: Demonstration (demonstration consistency) | English Department | Instruction using corpus-based genre approach | Genre instruction can complement students awareness of what to write by providing frameworks for how to write each chapter of a dissertation | Noting instructional content based on specific writing tasks | Learners can only develop to a certain extent without added guidance or instruction; this is called their zone of proximal development. |
| Principle 1: Problem-centered (show task) | English Department | Modeling through published writing | Modeled practice can stimulate a heightened awareness of not only what is good to do but also what may not be effective | Evaluating model dissertations to determine writing goals | Learning is promoted when learners are shown a model that they will be able to complete upon graduation |

| | | | | | |
|---|---|---|---|---|---|
| Principle 3: Demonstration (Learner guidance) | English Department | Genre analysis practice | Learners must put knowledge to practice in order to make meaningful connections | Noticing discipline-specific writing conventions | Through guidance to specific language features that help communicate an argumentative intent, learners can begin to read research more critically |
| Principle 4: Application (practice consistency) | Individual Students | Dissertation writing time | Learners are given independent time to apply new knowledge directly to their writing | Applying genre awareness to writing | Learners independently write their dissertations while applying new knowledge of the research writing genre to their dissertation |
| Principle 3: Demonstration (demonstration consistency) | Writing Center | Quick Tips: General writing instruction | Quick tips for general writing success are discussed (e.g., summarizing/paraphrasing, effective data reports, editing strategies, writer's block) | Noting instructional content based on general writing tasks | Instruction is provided to meet learners general writing needs |
| Principle 3: Demonstration (relevant media) | Library | Quick Tips: Library instruction on technological considerations | Information is provided for use of technology to organize sources and register for research alerts | Analyzing potential use of technology for research writing and citations | Information (in the form of handouts) is provided about library resources, and learners can analyze whether the resources will benefit them |

| Principle 3: Demonstration (learner guidance) | Library | Quick Tips: Library instruction on copyright and intellectual property | Information is provided for understanding copyright and intellectual property | Relating new knowledge about policy and ethics | Information is provided about library resources, and learners can begin relating that knowledge to their current situation |
|---|---|---|---|---|---|
| Principle 1: Problem-centered (problem progression) | Writing Center | Goals reporting with accountability groups Group and self-assessment | Learners gather with their assigned accountability groups to discuss the day's accomplishments and assess whether they are satisfied with their achievements | Assess learning outcomes and reflect on progression through problems | Learners assess whether they have solved daily problems and determine whether more knowledge is needed to progress through additional problems |
| Principle 5: Integration (reflection) | Writing Center | Continued accountability group meetings | Groups meet at least eight times throughout the semester for sustained accountability and reflection | Reflect on goal achievement, knowledge acquisition, and application to dissertation writing | Continued reflection can promote sustained progress |

## 5.2    Teaching practices and learning activities

The learning activities were intended to stimulate crucial socio-cognitive and metacognitive skills in order to fulfil salient needs represented in the needs survey. Table 8 provides the workshop schedule that demonstrates how design principles, teaching practices, and learning activities come together into one week-long workshop. Immediately following is a description of the focus of instruction (what is taught) and the mode of instruction (how it is taught). Each teaching practices leads to specific learning activities, and each learning activity is motivated by results from the needs analysis

### Daily strategy instruction

Goal setting tasks and strategies for productive writing are known to assist writers in self-regulating their learning processes (Klein & Boscolo, 2015). This instructional approach can be used to help learners solve problems and ultimately develop as writers by helping them master higher-level cognitive processes in composing, developing autonomy through reflection, and form positive perceptions towards writing and being a writer (Graham & Harris, 1993). Immediately following an introduction to the workshop and participant introductions on day 1, students are introduced to goal setting and writing strategies. First, students are asked to reflect on the following questions:

1. When and where do you feel most productive writing?

2. What are common obstacles that prevent you from writing?

3. Do you have daily writing goals? If so, what kind?

These three questions align with the three major categories of self-regulatory influence: environmental processes (writers' self-regulation of the physical or social space where the write), personal processes (writers' self-regulation of cognitive beliefs and affective states), and behavioral processes (writers' self-regulation of their writing behavior), as discussed in Zimmerman & Risemberg (1997).

We then introduce specious barriers that lead to procrastination from Silva's (2007) book *How to Write a Lot: A practical guide to productive academic writing*. Through a

Table 8. *Dissertation writing workshop schedule*

| Time | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| 8:30-10:00 AM | Welcome Introduction to the workshop Participant Introductions Setting SMART goals with accountability groups | Goal Setting and Dissertation Writing Time | Goal Setting and Dissertation Writing Time | Goal Setting and Dissertation Writing Time | Goal Setting and Dissertation Writing Time |
| 10:00 -10:15 AM | | Snack Break & Quick Writing Tip: Finding dissertations | Snack Break & Quick Writing Tip: Using Research Alerts | Snack Break & Quick Writing Tip: Using Material under Copyright | Snack Break & Quick Writing Tip: Protecting your Intellectual Property |
| 10:15-1:30 AM | Dissertation Writing Time Self-assessment | Dissertation Writing Time | Dissertation Writing Time Individual consultation | Dissertation Writing Time Individual consultation | Dissertation Writing Time Individual consultation |
| 11:30-1:00 PM | Lunch | Lunch | Lunch | Lunch | Lunch/Reception |
| 1:00-2:00 PM | Writer's Toolbox #1: Writing Your Literature Review | Writer's Toolbox #2: Writing Your Introduction | Writer's Toolbox #3: Writing Your Methods | Writer's Toolbox #4: Writing Your Results | Writer's Toolbox #5: Writing Your Discussion and Conclusion |

| | | | | |
|---|---|---|---|---|
| 2:00-3:15 PM | Dissertation Writing Time | Dissertation Writing Time | Dissertation Writing Time Individual consultation | Dissertation Writing Time Individual consultation | Dissertation Writing Time Individual consultation |
| 3:15-3:30 PM | Snack Break & Quick Writing Tip: Writing to a specific audience | Snack Break & Quick Writing Tip: Staying on topic and maintaining progress | Snack Break & Quick Writing Tip: Editing versus revising strategies | Snack Break & Quick Writing Tip: Writing effective data reports | Snack Break & Quick Writing Tip: Work/Life balance + communicating with your advisor |
| 3:30-4:30 PM | Dissertation Writing Time | Dissertation Writing Time | Dissertation Writing Time Individual consultation | Dissertation Writing Time Individual consultation | Wrap-up Assessment of the Workshop Organization of Accountability Group Meetings |
| 4:30-4:45 PM | Goals Reporting & Assessment | Goals Reporting & Assessment | Goals Reporting & Assessment | Goals Reporting & Assessment | |

PowerPoint presentation and group discussion, students are asked to reflect on comments such as, "I can't find the time" or "I need to do more analysis/research." Finally, students practice SMART goals, which originated in the field of business management (Doran, 1981). More recently, the same goal setting approach has been used in writing programs (e.g., the writing centers at the University of Vermont and the University of North Carolina). In this approach, students are asked to set specific, measurable, achievable, relevant & time-bound goals (see Appendix B).

## Self-assessment and accountability groups

Self-assessment is a self-regulation tactic that can aid learner autonomy. This type of formative assessment can present meaningful ways for students to mark writing achievement through reflection and meta-cognition throughout the writing process (Nielsen, 2012). This area of assessment is grounded in meta-cognition, transfer, and learner autonomy where reflection supports meta-cognitive awareness, continued reflection supports transfer of effective writing processes, and the internal dialogue within a writer affects learner autonomy. SMART goals can form a heuristic for students' self-assessment of progress and are evaluated immediately following the first morning writing session (and throughout the week) so that students have time to reflect on the feasibility of setting similar goals the following four days.

Most importantly, students review their self-assessments with their accountability group to build on the social side of the writing process. The accountability groups help us facilitate self-assessment practices by collectively monitoring and discussing writing goals throughout workshop days. This task was especially important since students in the needs survey showed indications that their perceptions of their own writing may be higher than how others perceive it. At the end of each day, students get together with their accountability groups to discuss challenges they faced that day and strategies for overcoming those challenges. They are also asked to self-assess their progress, including how they envision being more productive as the week progresses. As described in the learning activities, the goal of this practice is to stimulate a level of reflection that students can take with them after they complete the workshop and work towards degree completion.

## Genre instruction

Genre instruction (Cope & Kalantzis, 1993; Hyland, 2007) is a well known approach that has been at the forefront of academic writing pedagogy since Swales (1981) introduced his Creating a Research Space (CARS) model for Introductions to research articles. It is genre awareness, however, that is a core element of the learning activity (Tardy, 2009). Learners, whether native or nonnative speakers of English, quite often do not have the awareness of what linguistic features help to construct a genre and thus need explicit teaching of text-level organizational patterns (Rothery, 1996) or sentence-level lexico-grammatical features associated with a text type (Williams, 2004). Explicit

(meta)linguistic awareness of a genre may contribute to how writers socially construct their identity, express their voice as a writer, and position themselves as a knowledgeable member in a field. Since academic texts are complex, nonlinear, and ever-changing, it is important for students to be able to process these texts as they evolve. Chafe (1986) was one of the first to conduct studies on language awareness in students of first language learning backgrounds, but genre studies have since become prolific and now apply to teaching English as a second language. For example, Dudley-Evans (1997), Flowerdew (2000), and Paltridge (2001) all consider genre awareness as a powerful tool in helping learners produce effective texts.

Genre instruction in the form of lecture and practice takes place each day for one hour. To meet the needs expressed in the needs survey, a literature review lecture is presented the first day. Days 2-5 focus on specific sections of a traditional dissertation, but techniques are provided throughout the lectures to help students make discipline-specific decisions in their writing. At the beginning of instruction, students first reflect on their prior knowledge about each section (e.g., What is the purpose/value of an Introduction chapter? What components do you expect to see in an Introduction chapter? What makes an Introduction chapter effective? Ineffective?). They are then introduced to a multi-disciplinary framework (see Cotos, Huffman, & Link, 2015) that outlines the communicative goals (moves) for each chapter in a dissertation and the writing strategies (steps) for achieving those goals. Because these frameworks were designed for research articles rather than dissertations, students are provided with strategies for critically reading in their discipline by analyzing model dissertations that they are asked to bring to the workshop on day 1. The lectures not only introduce the frameworks but also provide examples sentences and language use templates so that students can begin visualizing how research is structured and the linguistic signals that contribute. Throughout the lectures, students are asked to analyze their model dissertations while the lecturer and facilitators circle around to provide assistance. Students are given practice at the end of each lecture and are then asked to discuss the lecture with accountability groups or with the workshop facilitators. At the beginning of the next day's lecture, a review and open discussion of the practice material is provided to clarify uncertainties. Appendix C provides an example of a practice task for Introduction sections. As the week continues, activities develop from sentence-level to discourse-level practice.

## Quick writing tip sessions

Quick tip sessions are only 15 minutes long. They are mainly information providing sessions with little interactive practice, but they are designed to guide students to the relevant resources when/if needed. The Graduate Support Specialist of the library and group facilitators are the presenters, and they focus on the various areas from the needs survey that students expressed most concerns about (e.g., summarizing/paraphrasing

and editing strategies). They also include information about library services (e.g., database use) and policy (e.g., copyright and intellectual property).

## 6. Moving forward: A springboard for future development

Writing is undoubtedly one of the most complex skills required for successful completion of graduate degrees. Results from the needs survey reveal that it is also a skill many students find very important but are not always comfortable with performing. Socio-cognitive research suggests that building students' self-efficacy is especially important. Instructors and research mentors can do this by offering self-regulation activities (e.g., goal-setting and self-assessment) to help students monitor their environmental, personal, and behavioral processes (Zimmerman & Risemberg, 1997). A mismatch in this study between student and faculty perceptions of students' comfort in writing skills suggests that students may have difficulties monitoring their own processes. While the findings are not conclusive, integration of self-regulatory tactics in our workshop allows for potential future research on the topic.

The mismatch from the needs survey was especially evident in genre-based, research writing skills over general writing skills. This finding cultivated the need for genre-based instruction to influence how writers participate or interact in genres with other people (Martin & White, 2005) and to empower writers to meet the demands and expectations of their readership. With the implementation of genre instruction, future research can begin uncovering how students think more reflectively about research writing, transitioning from novice knowledge-tellers to expert knowledge-transformers (Bereiter & Scardamalia, 1987). Similar studies have yielded positive results (e.g., Cheng, 2006; Walsh, 2006); yet, more longitudinal and recursive studies are needed to explore how instruction continues to influence students as they complete additional writing tasks.

While this study did not explore students' preferences for where and with whom they prefer to write, theoretically speaking, writing is a social and situated activity (Hyland, 2003), so we integrated into the workshop social experiences to foster achievement. The integration of peer review/accountability groups gives students a means of communicating with others performing a similar task, which as a result is likely to build a community of practice (Lave & Wenger, 1991; Wenger, 1998) and guided participation (Rogoff, 1994). By including peer writing experts as facilitators, we were also able to provide the possible guidance beyond formal instruction to scaffold students' development of their writing (Vygotsky, 1987). While an expanding body of literature has investigated peer writing groups (e.g., Kumar & Aitchison, 2018; Wegener, Meier, & Ingerslev, 2014), future research would benefit from investigating group interactions from a socio-cognitive perspective and provide insights into how mutually beneficial relationships are formed and how the change of group dynamics influences group ownership with and without guided facilitation.

Overall, the transfer of needs data to program design and implementation, described here, hopes to establish a blueprint for replication of our workshop in institutes with similar needs. It is suggested that the workshop schedule be piloted with the awareness that it takes several units across campus to conduct successfully, and although there was always a faculty member at the workshop, it was the library who was able to provide the most consistent face-to-face presence, which is now an essential component of the workshop.

Since the inaugural year of the workshop, the intervention has set up the potential to establish continued multi-disciplinary collaborations as more programs become interested and has allowed for expansion of resources. Our university now has an extended list of single-session workshops and offers residential writing retreats for a full-day of peer writing support. Recently, the university implemented a digital badge program, where learners can get awarded for their efforts outside of the classroom. The program contains six skill areas: communication, instruction, research services, management, leadership, and wellness. Each skill area contains three competency levels (e.g., attending the dissertation writing workshop earns a Level 3 digital badge for Communication). We hope the program will narrow concerns about students' access to information. Another current effort is the design of an online research writing course and a web-based research writing technology that addresses students' desire for more online options at the beginning of their studies. These online features will help us account for students that take courses on multiple campuses throughout our state.

With the detailed design principles, learning activities, and teaching practices outlined here, it is hopeful that similar workshops can emerge across other university campuses. Granted, such an approach is not one-size-fits-all. This approach is perhaps best in universities that have yet to establish full-on graduate writing programs, for graduate writing programs looking to expand or change current programming, or for institutes hoping to address graduate student needs in a new and immediate way. Together, the intent is for our dissertation writing workshop to deepen our students' awareness of and comfort with the research writing genre so that they can complete their degrees and contribute new knowledge to their fields. These benefits of research writing alone are a key impetus for supporting writers through the ever-changing and complex research writing process.

**Note**

1. Although the terms "dissertation" and "thesis" are used interchangeable across universities, in this paper, I refer to "dissertation" as the final research document for completing doctorate degrees. "Thesis" is used to refer to Masters-level research projects.

## Acknowledgements

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**Appendix A: Student Needs Survey**

Part 1: Informed Consent (not shown)

Part 2: Demographic Information

1. In which degree program are you currently enrolled? [dropdown menu]
2. With which college are you associated? [dropdown menu]
3. What is the name of your primary degree program? [dropdown menu]
4. What was your age when you began your current degree program? [dropdown menu]
5. What is your current official enrollment status? [dropdown menu]
6. What is your current year of study? [dropdown menu]
7. How many credit hours have you completed in your degree program? (Do not count the current semester.) [text box]
8. To which gender identity do you most identify? [dropdown menu]
9. To which language status do you most identify? [Native English speaker, Nonnative English speaker]

Part 3: Prior Writing Experience

This section includes items to determine what discipline-specific writing tasks students are asked to complete during a degree program.

10. Does your department/program offer a graduate-level course specifically for learning to write in your discipline (e.g., a course for learning how to write your dissertation/thesis)? [Yes/No]

11. Does your department/program offer a graduate-level workshop specifically for learning to write in your discipline? [Yes/No]

12. Have you ever taken a disciplinary-specific graduate-level writing course? [Yes/No]

13. How many graduate-level writing workshops through the OSU Writing Center and/or Graduate College have you attended? [dropdown menu]

14. Which workshop(s) did you attend?

Abstract writing workshop

Public writing workshop

Literature review workshop

Three-minute thesis presentation training

Dissertation writing workshop (one-week long)

Thesis writing workshop (weekend full-day session)

Other

15. What degree requirements must you complete before graduation? Choose ALL that apply.

Written Exam(s)

Capstone Project/Creative Component

Thesis/Dissertation

Qualifying paper(s)/Formal Report

No writing assignment required for graduation

Other writing requirement(s):

16. What other types of writing tasks have you done, or will you do in the near future, in your graduate program? Choose ALL that apply. DO NOT INCLUDE ESL (English as a second language) ASSIGNMENTS

Business/grant proposal (describing and analyzing aspects of a business/research area, or a product, and suggesting strategies to achieve the outlined goals and objectives)

Business letters and memos (correspondence within or between businesses that address topics concerning specific issues or procedures)

Writing to answer questions in paragraph(s) (e.g., essay exams, posting on a blog/discussion forum for your course)

Abstract for a conference proposal (a concise description of your paper or presentation)

Reflective Essay (a brief paper describing your learning experience or growth from a specific course project or assignment)

Poster/Presentation (combines text and graphics to present your project in a way that is visually interesting and accessible)

Summary/abstract (a concise report of main points from an article or your own paper)

Critique/article review (an evaluation of one or more articles, artifacts or work(s) of art)

Annotated Bibliography (a list of references with brief descriptive and evaluative notes about each source)

Literature Review (an overview or a review of the current state of knowledge about a specific area of research based on published scholarly articles)

Case-based Writing (e.g., analyzing a real-life situation through applications of theory and knowledge, and often through integrating other sources into the analysis)

None (I am not engaged in any writing task for course work or research)

Other writing Task(s)

Part 4: Perceptions Towards Writing Support

17. Please indicate how much additional support you need during your graduate studies for completing the following writing tasks

| | A great deal | A lot | A little | None at all | I do not need to perform this task |
|---|---|---|---|---|---|
| Written exams | ○ | ○ | ○ | ○ | ○ |
| Capstone Project/Creative Component | ○ | ○ | ○ | ○ | ○ |
| Thesis/Dissertation | ○ | ○ | ○ | ○ | ○ |
| Formal Report/Qualifying paper | ○ | ○ | ○ | ○ | ○ |
| Summary/abstract | ○ | ○ | ○ | ○ | ○ |
| Critique/article review | ○ | ○ | ○ | ○ | ○ |
| Annotated bibliography | ○ | ○ | ○ | ○ | ○ |
| Literature review | ○ | ○ | ○ | ○ | ○ |
| Case-based writing | ○ | ○ | ○ | ○ | ○ |
| Lab report | ○ | ○ | ○ | ○ | ○ |
| Business/grant proposal | ○ | ○ | ○ | ○ | ○ |
| Business letters and memos | ○ | ○ | ○ | ○ | ○ |
| Writing to answer questions in paragraph(s) | ○ | ○ | ○ | ○ | ○ |
| Abstract for a conference proposal | ○ | ○ | ○ | ○ | ○ |
| Reflective essay | ○ | ○ | ○ | ○ | ○ |
| Poster/Presentation | ○ | ○ | ○ | ○ | ○ |
| Other [____] | ○ | ○ | ○ | ○ | ○ |

18. Please describe the kind of additional support you would like to see. [open-ended]

19. If a combination of workshops/presentations were available before you graduate, which of the following topics would you like to take? Choose ALL that apply.

Academic Writing: Focus on Grammar

Academic Writing: Focus on Style (e.g., writing appropriately for your audience, conciseness, clarity)

Effective Data Reporting

Integrating and Documenting Sources

Writing Literature Review

Prewriting Strategies (e.g., research skills, outlining strategies)

Strategies for Academic Vocabulary

Editing Strategies (i.e., how to edit your own work effectively)

Writing for Conferences (e.g., conference proposals, abstract writing)

Preparing for Conferences (e.g., paper or poster presentation)

Writing Research Papers (e.g., Introduction, Methods, Results, Discussion)

Writing Grant Proposals

Job Application Writing (e.g., resumes/CV, cover letters, teaching philosophy)

Writing in my Field/Major (e.g., how to write in your field such as writing for engineers or writing for humanities etc)

Time management and goal setting

Other ideas:

Part 5: Perceptions towards Writing Importance and Comfort

20. When you write in order to fulfill course and degree requirements, how important is it to:

| | Extremely important | Very important | Moderately important | Slightly important | Not at all important |
|---|---|---|---|---|---|
| Write in response to an assignment and stay on topic without digressions or redundancies | O | O | O | O | O |
| Show awareness of audience needs and write to a particular audience or reader | O | O | O | O | O |
| Use background knowledge, reference or non-text materials, personal view points, and other sources appropriately to support ideas, analyze, and refine arguments | O | O | O | O | O |
| Produce writing that effectively summarizes and paraphrases the works and words of others | O | O | O | O | O |
| Organize writing in order to convey major and supporting ideas | O | O | O | O | O |
| Use appropriate transitions to connect ideas and information | O | O | O | O | O |
| Use relevant reasons and examples to support a position or idea | O | O | O | O | O |
| Produce sufficient quantity of written text appropriate to the | O | O | O | O | O |
| Demonstrate a command of standard written English, including grammar, phrasing, effective sentence structure, spelling, and punctuation | O | O | O | O | O |
| Demonstrate facility with a range of vocabulary appropriate to the topic | O | O | O | O | O |

21.  [Items matched the above questions but the Likert-scale measured level of *comfort.]*

22.  When students write their **thesis/dissertation**, how **important** is it to: [example from faculty survey]

| | Extremely important | Very important | Moderately important | Slightly important | Not at all important | They do not need to perform this task |
|---|---|---|---|---|---|---|
| Begin a written argument | O | O | O | O | O | O |
| Gain the reader's attention | O | O | O | O | O | O |
| Identify an area that needs to be addressed by research | O | O | O | O | O | O |
| Demonstrate your knowledge of the research topic | O | O | O | O | O | O |
| Take an evaluative stance towards existing literature | O | O | O | O | O | O |
| Introduce the research purpose | O | O | O | O | O | O |
| Describe the approaches used to collect and/or analyze data | O | O | O | O | O | O |
| Explain steps taken in the study | O | O | O | O | O | O |
| Persuade readers of the credibility of their work | O | O | O | O | O | O |
| Transform data into results | O | O | O | O | O | O |
| Design clear visual representations of data (Tables/Figures) | O | O | O | O | O | O |
| Compile findings into a clearly connected "story" | O | O | O | O | O | O |
| Communicate their own understanding and interpretation of the results | O | O | O | O | O | O |
| Provide an extended analysis of their research through an evaluative and interpretive angle | O | O | O | O | O | O |
| Expand the meaning of findings outside of their own research | O | O | O | O | O | O |
| Indicate how the findings add/relate to existing knowledge in the field | O | O | O | O | O | O |
| Acknowledge limitations of their work | O | O | O | O | O | O |
| Show the value of their research | O | O | O | O | O | O |

## Appendix B: S.M.A.R.T Goals

# Be smart. Set SMART goals

ADAPTED FROM THE UNIVERSITY OF NORTH CAROLINA WRITING CENTER: http://writingcenter.unc.edu/

Try the SMART approach for goal-setting. Write goals that are:

*Specific* Clearly articulate what you need to do. Vague aims are your enemy. "Write a lot" or "Just get this done" are good intentions, but those aims are not specific goals. Determine exactly what will you write, when will you write, where will you write. Make decisions rather than hoping something good will happen.

Try it!

*Measurable* Your goal needs to be observable--something tangible that another person can see, count, acknowledge. Define your goal in numerical terms—the number of pages you'll produce, hours you'll stay on task, concepts you'll address. Putting your goals in this form will help you gauge progress and help motivate you to move through the process. Take inventory at the end of each work session to develop a sense of what you can produce in a defined period of time when you are on task. How many pages can you write in an hour? How long does it take to format a table? How much time do you need to revise something?

Try it!

*Achievable* Consider the size of your goals this week. Set goals that you can realistically achieve in the time available. Determining what's achievable may be challenging if you haven't worked consistently to this point. If you haven't worked with targets before, think in small, defined increments. If you reach your goal earlier than you expect, use the remaining time to work toward your next goal.

Try it!

*Relevant* When writing, goal-setting may be useful for a variety of purposes —producing texts, developing work habits, improving your writing style or knowledge. Consider which goals seem most productive and important for you at the moment and set goals accordingly. Are you trying to develop work habits? Experiment with new writing techniques? Produce pages? Gain facility with a new genre/disciplinary discourse? Choose.

Try it!

*Time-limited* In order to assess how well you are meeting your goals, set an endpoint when you will review, evaluate, and set your next targets. You'll be most successful if you set small weekly or daily goals that lead toward your ultimate goal—a complete draft of your dissertation. Systematically evaluating what's working for you and what's not will help you celebrate, troubleshoot, and stay engaged with the task.

Try it!

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## Appendix C: Example Practice Activity for Genre Instruction

**Writer's Toolbox #2: Writing Your Introduction**

**Goal 1: Establishing a Territory**

*Demonstrate knowledge of topic & its relevance in the field*

- o  Claiming centrality
- o  Proving general background
- o  Reviewing previous research

**Goal 2: Identifying a Niche**

*Identify an area that needs to be addressed with research*

- o  Indicating a gap
- o  Highlighting a problem
- o  Raising general questions
- o  Presenting justification

**Goal 3: Addressing the Niche**

*Address your research's purpose, value, structure, and outcomes*

- o  Introducing research descriptively
- o  Announcing research purposefully
- o  Presenting research questions
- o  Presenting research hypotheses
- o  Clarifying definitions
- o  Summarizing methods
- o  Announcing principal outcomes
- o  Stating the value of the research

**Practice Identifying Communicative Goals**

Since the advent of computers, a revolution in technology-based learning has occurred and research on computer-based adaptive learning environments has shown exemplary growth (Graesser et al. 2008). (Curriculum and Instruction)

Goal : _____    Strategy: _____

While there has been much speculation based on the above indirect evidence, a direct relationship between LTPs and cuticle deposition has not yet been demonstrated experimentally. (Plant Pathology)

Goal : _____    Strategy: _____

The introduction of new light rail has been proposed as a means of improving the attractiveness of urban transport systems struggling under the combined impacts of traffic congestion, overcrowding, ageing infrastructure and pollution. Transport authorities evaluating the feasibility of light rail face a difficult challenge in assessing the benefits of increased public transport ridership against the high fixed costs of implementation. (Community & Regional Planning)

Goal : _____    Strategy: _____

Goal : _____    Strategy: _____

In this study, we apply the cognitive mediational paradigm and hypothesize that perceptions of adaptivity mediate the relation between adaptive instruction and learners' motivations and learning outcomes. (Human and Computer Interaction)

Goal : _____    Strategy: _____