

Enhancing the Academic Writing Abilities of First-Year Bachelor of Education Students in a Blended Learning Environment

David Scott, Sam Ulmer-Krol, and Jason Ribeiro
University of Calgary

Funded by a Scholarship of Teaching and Learning grant from a University in western Canada, this paper reports on findings from an educational design research study (McKenney & Reeves, 2012) investigating the ways, and the extent to which, particular technological supports and other interventions impacted the acquisition of academic writing skills for Bachelor of Education students working within a blended learning environment. Among the various findings, students emphasized the importance of integrating writing interventions in coordination with one another, as well as introducing a variety of effective pedagogical practices tailored to meet the needs of specific course assignments. Instructors found that by incorporating student feedback into the design and then redesigning the course, they were able to improve students' academic writing abilities without sacrificing course content.

Funded by a Scholarship of Teaching and Learning (SoTL) grant from a university in western Canada, this article reports on findings from a qualitative study informed by educational design research [EDR] (McKenney & Reeves, 2012) investigating the ways, and the extent to which, particular technological supports and pedagogical techniques impacted the acquisition of academic writing skills for Bachelor of Education [B.Ed.] students working within a blended learning environment. Situated within the context of a large mandatory first-year course for students enrolled in the university's four-year B.Ed. program for students wishing to become certified teachers, the impetus to undertake this study was based on the observation by the researchers, one of whom was the instructor, that many of the over 180 students enrolled in this class struggled with academic writing. This included the ability to stay focused on a clear and answerable research question, synthesizing insights from the research literature using appropriate citations, and developing and elaborating upon a few key ideas rather than introducing many ideas in a superficial and cursory way. Notably, however, there were no stand-alone academic writing courses in the university's B.Ed. program.¹

The need to develop greater academic writing competencies among undergraduate students, including those in professional programs, is supported by research that suggests students' levels of academic writing proficiency have a strong influence on academic achievement levels, as well as success after graduation (Defazio, Jones, Tennant & Hook, 2010; Holtzman, Elliot, Biber, & Sanders, 2005; Saidy, 2015). As Holtzman and colleagues (2005) asserted, "[T]he ability to communicate effectively has been recognized as a hallmark for membership in the learned professions" (p.

285). Given the importance of effective written communication, research has found that academic writing skills are an ongoing challenge for undergraduate students (Bartlett, 2003; Fallahi, Wood, Austad & Fallahi, 2006; Holtzman et al, 2005; Manzo, 2003).

While there is an established body of literature on how to improve the acquisition of academic writing skills for undergraduate students (e.g., Babcock & Thonus, 2012; Graham, Gillespie, & McKeown, 2012; Stein, Dixon, & Isaacson, 1994), a number of studies have concluded that university instructors in disciplines outside of English have great difficulty helping their students improve their academic writing abilities (Boice, 1990; Fallahi et al., 2006; Goddard, 2002). According to Fallahi and colleagues (2006), this situation can be attributed to the reality that many instructors at the undergraduate level "may tacitly accept poor writing because of the labor-intensive nature of teaching basic writing skills, insufficient training in writing instruction, and concerns about the need to focus on content" (p. 171).

Given this reality, increasingly instructors at the post-secondary level are seeking to overcome these challenges by leveraging the affordances of blended learning environments that allow for the integration of technological supports to aid students in developing writing skills. Research suggests, however, that it is difficult to ascertain the effectiveness of one technology over another in promoting the acquisition of academic writing skills (Allen & Tay, 2012; Dishaw, Eierman, Iversen, & Philip, 2011; Wheeler & Wheeler, 2009). Based on a need for more empirical research concerning how the affordances of blended learning environments can be best leveraged to improve the academic writing abilities of undergraduate students, this two-year qualitative design-based study involved creating, introducing, and iteratively assessing and modifying a series of writing interventions specifically tailored to the assignments and the unique writing needs of B.Ed. students in this first-year mandatory course.

¹ In contrast to the US context where many universities have a first-year writing program or requirement, a lack of such programmatic requirements is not uncommon in Canadian universities.

Methodology and Data Sources

This study was informed by educational design research [EDR] methodology (McKenney & Reeves, 2012), which “strives to positively impact practice, bringing about transformation through design and use of solutions to real problems” (p. 14). In striving to solve authentic real-world problems, challenges, and issues in education, EDR reflects characteristics of participatory forms of research in that the research is done *with* rather than *on* people and, moreover, it is collaborative, responsive, and iterative in nature. EDR requires that the development of solutions to complex educational problems is done in “close coordination” with the intended audience who provide ongoing cycles of feedback about the viability of solutions created to address the problem (Kopcha et al. 2017, p. 32). In this way EDR seeks to create innovations that are generated within specific contexts in ways that are valued and useful to the people the solutions seek to serve.

EDR additionally seeks to generate, and further elaborate upon, theoretical understandings in the field. According to McKenney and Reeves (2012), this can involve contributing to theory within such diverse domains as “learning in specific subject areas (e.g., domain-specific instructional theories), classes of learning problems (e.g., learning theories), and principles for guiding other design efforts (e.g., innovation theory)” (p. 13). However, while EDR requires iterative cycles of feedback from those the proposed innovations are being designed for, unlike many forms of participatory research, the researchers take the initiative in leading the research, as well as designing and refining the interventions to be studied (Wang & Hannafin, 2005). Informed by these insights, we adopted McKenney and Reeve’s (2012) generic model of EDR involving three key stages: 1) analysis and exploration, 2) design and construction, and 3) evaluation and reflection. Noting the need within DBR to ensure a “flexible, iterative process” (McKenney & Reeve, 2012, p. 77), we worked through these three phases two times over the course of the study, which began in the fall of 2016 and ended in December of 2017.

To evaluate the ways, and the extent to which, these interventions impacted the acquisition of academic writing skills for students, data was drawn from several channels. Data sources in the first cycle of the study included an anonymous digital survey comprised of short answer questions focused on the perceived effectiveness of the writing interventions that had been introduced over the course of the term (Y1SP; 35 students). Qualitative data was additionally drawn from two focus group interviews made up of four (Y1FG1) and six students (Y1FG2), as well as a 60-minute semi-structured interview with the instructor

and teaching assistant [TA] (Y1IFG). Our aim in conducting these interviews was to draw out and clarify themes that emerged from the surveys to elicit richer and more nuanced data.

In year two of the design cycle, data was drawn from a similar data set as in year one, including the same anonymous digital survey (Y2SP; 29 students), one focus group interview involving seven students (Y2FG), and a 60-minute semi-structured interview with the instructor. As with the first year, both interviews were conducted by a research assistant and administered after all the student grades had been submitted. The qualitative data sets for year one and two were separately coded for common categories involving phrasing and responses that reflected similar and corresponding interpretations related to the perceived effectiveness of the writing interventions introduced in this course (Miles, Huberman & Saldaña, 2014, p. 12).

Analysis and Exploration Cycle 1

In the initial analysis and exploration phase, the research team, aided by a research assistant and working with colleagues, undertook a systematic review of the research literature, examining innovative technologies and pedagogical approaches to instruction that have been proven to enhance the acquisition of academic writing skills for undergraduate students in blended learning environments. After identifying 26 peer-reviewed articles providing empirically grounded insights into this topic, an annotated bibliography was created and published as a report (Scott, Ribeiro, Burns, Danyluk, & Bodnaresko, 2017). Three key principles emerged from this review of the literature, which subsequently guided the creation of interventions that were introduced in the course.

Design principle 1: The types of technology used are less important than how they are used. One of the key insights that emerged from this systematic review of the research literature concerned the insight that studies to this point have been inconclusive that one technology was more effective than another in improving academic writing abilities for undergraduate students (Scott et al., 2017). This was the case for the most prominent technological interventions in the research literature including wikis (Allen & Tay, 2012; Allwardt, 2011; Dishhaw et al., 2011; Stetson, 2016), discussion forums (Birch, 2016; Wheeler & Wheeler, 2009; Wijeyewardene, Patterson, & Collins, 2013), and instructional videos (Balzotti & McCool, 2016; Engin & Donanci, 2016). Dishaw and colleagues (2011), for example, compared survey responses from groups of undergraduate students who used wikis and groups who exchanged word processing documents through email. The data revealed that the students rated the word processor and email communications as both easier to

use and more useful compared to the wikis, though the data also revealed no difference between the two approaches in terms of the development of student's writing abilities, despite the advanced technological nature of the wiki platform.

Overall, the this review of the research literature (Scott et al., 2017) determined that, contrary to popular belief, contemporary students are not necessarily digital natives. Instructors therefore need to outline the value of the technology and, moreover, provide instruction around best practices for using particular technological tools in ways that can help them enhance their work within course assignments (Birch, 2016; Chanock, D'Cruz, & Bisset, 2009; Ellis, 2011; Yang & Durrington, 2010). Without these elements in place, insights from the review of the literature suggested that the potential for the technology to assist students in the writing process is often negated.

Design Principle 2: Writing is best understood as a social and collaborative act. The review of the research literature on academic writing in blended learning environments found that composition studies have important insights to offer (Babcock & Thonus, 2012; Graham et al., 2012; National Writing Project, 2010; Yancey, 1998). This body of literature asserts that writing is a social act and that notions of the solitary writer are misguided. Specifically, to help students gain writing competencies and a greater sense of self-efficacy, they need opportunities to learn through trial and error, whereby, rather than offering corrections, the instructor engages in a "collaborative dialogue" involving a process of "asking questions and making suggestions for discussion and consideration" (Babcock & Thonus, 2012, p. 112). This point is similarly echoed by those in the National Writing Project (2010) who argued that proven practices for teaching writing involve supporting students in "working in a community of writers to explore content; give, receive, and use feedback; and to reflect upon their growth over time" (p. 41).

The need to create more socially connected and collaborative learning environments is supported by the literature examining the specific pedagogical techniques that can best promote academic writing in blended learning environments. Specifically, research has found that blended learning environments are effective for engaging students in academic writing in that instructors are able to recreate the informal elements of in-class discussion and interaction in an online space (Tuomainen, 2016; Wijeyewardene et al., 2013). However, this body of research has found that face-to-face interactions (either in-person or via distance) are needed from time to time to provide reassurance. As a word of caution, although blended learning environments offer students significant affordances for group collaboration outside the formal

classroom environment, a number of social factors can impede effective group work related to academic writing, including poor moderation of online social interactions and interpersonal issues that can emerge (Wijeyewardene et al., 2013).

Design Principle 3: Ongoing formative feedback loops should be built into the writing process. Closely related to the social and collaborative nature of writing, as noted by the quote from the National Writing Project (2010) above, this review of the research found that formative feedback is central to improving academic writing among undergraduate students (Birch, 2016; Chanock et al., 2009; Engin & Donanci, 2016; Wijeyewardene et al., 2013; Yancey, 1998). In their examination of embedded academic writing instruction, Wingate, Andon, and Cogo (2011), for example, found that formative assessment was perceived by both students and teachers as the most important element to improve academic writing. This was similarly evident in a study by Yancey (1998), where one student noted the need for "the teacher to see the individual student's writing problem and to communicate that to the student, and the willingness of the student...to hear and understand the feedback, and ... abstract essential elements from that process" (p. 67).

Heritage's (2010) review of the literature on feedback asserted that feedback designed to improve learning is most effective "when it is focused on the task and provides the student with suggestions, hints, or cues, rather than offered in the form of praise or comments about performance" (p. 5). In this regard, it is essential to provide students with clear assessment criteria that both their instructors and they can use as lens to provide and respond to feedback. Given the tremendous benefits of formative feedback, the research is clear that instructors identified this as the most labor-intensive aspect of writing instruction (Gunn, Hearne, & Sibthorpe, 2011). One solution to address this issue is to encourage students to assist one another in online discussion forums where the responsibility for feedback is thus shared and the instructor workload can be lessened (Wijeyewardene et al., 2013).

Design and Construction (Cycle 1)

Guided by these principles, the research team developed four interventions aimed at improving students' academic writing abilities in this first year B.Ed. course: 1) two interactive writing modules; 2) two online discussion forums, 3) two out-of-class writing tutorials, and 4) structured in and out-of-class opportunities for students to receive verbal feedback. These interventions were designed in relation to two course assignments, including the first assignment where students were asked to write a two-page synthesis of a peer-reviewed research article.

Interventions also sought to support the final assignment involving a seven-page research paper in which students had to take a position on a contemporary issue in education involving, for example, whether K-12 students with diverse learning needs should be taught inclusively or separately from mainstream students.

Interactive writing modules. Finding that no one technology has proven superior in augmenting undergraduate students' writing abilities (Scott et al., 2017), the researchers teamed up with the university's Writing Center to find a technological intervention that could be imbedded in the course Learning Management System [LMS] and that might offer affordances such as feedback loops and interactivity. After some investigating, the Writing Centre suggested using the interactive platform of Articulate Storyline (2018), which accommodates voice-overs, visual graphics, and video, thus allowing students to unpack examples and test their knowledge through embedded quizzes. Using this platform, the Writing Centre created two interactive writing modules for the course focused on 1) APA citation style, and 2) thesis statements and argumentation. The former guided students through examples of APA citation style and quizzed them on their ability to properly cite multiple academic sources both in-text and in the reference list. The latter prompted students to craft thesis statements alongside information, tips, and techniques for developing a strong scholarly argument. Students were asked to work through the first module prior to beginning assignment 1 and the second module prior to starting assignment 3.

On-line discussion forums. Noting the need for formative feedback loops, including the ways the time intensive nature of feedback can be lessened by creating opportunities for student-to-student interactions, the second writing intervention involved facilitating two on-line discussion forums, one for each assignment. In these discussion forums housed within the course's LMS, students were invited to post works in progress to garner formative feedback from the instructor and the TA, as well as other students. For assignment 1, students were asked to post their introduction. In the second forum, students were invited to post their thesis statement and three key arguments for their research-based position paper. In both instances, if students posted before a set time period, the instructor and TA provided feedback. In all cases, students were asked to provide feedback on their fellow students' posts.

Writing tutorials. Seeking to respond to Design Principle 2 in which writing is understood as a social and collaborative act, the third intervention involved two out-of-class writing tutorials, one for each of the course's major writing assignments. Within these tutorials, either the instructor or TA broke down the various elements of each assignment and additionally

offered strategies and example sentence frameworks for how students could structure their writing. For example, in assignment one, students were introduced to the State, Explain, and Support (SES) framework as a way to introduce, develop and support, through at least one example, one of the key findings from the article. Students were asked to bring works in progress to these tutorials which were structured in such a way that time was allocated for the instructor and TA, as well as the students, to show and receive feedback on their work.

Additional feedback opportunities. Seeking to augment Design Principles 2 and 3, alongside these out of class writing tutorials, in class instruction included structured opportunities where students could receive feedback on works in progress from the instructor and TA. This included one-on-one sessions outside class time where either the instructor or the TA was able to respond to their questions and offer verbal feedback on the writing of individual students.

Evaluation and Reflection on Cycle One

Interactive writing modules. Student response to the online modules were mixed. When asked which of the four interventions was most helpful in improving their academic writing, none of the survey respondents listed the interactive modules. In this regard many students indicated that they either did not know the modules were available, or found them, as one student noted, "very long and not very interactive so it got confusing at times" (Y1SP-21). Similar responses revealed that some students were not clear on the module's applicability to course assignments. This sentiment was reflected in the following statement: "[T]he modules are] not worth my time looking over unless [they] are explaining it to me in more depth because sometimes [they] just give this brief intro and then [they] don't explain it" (Y1FG1-1).

The instructor experience corroborated this latter perspective, observing that the modules had limited impact "because it was very passively done, I think, and there were very little levels of interaction" (Y1IFG-1). According to the instructor, this was partly due to the fact that there was no real incentive to work through the modules, as they were not built into an actual assessment task. While both students and instructors agreed that the APA interactive module was useful on a technical level, a number of students felt that the thesis and argumentation module wasn't "made with the assignments in mind; they were too disconnected" (Y1IFG-2).

Given this, some students forwarded positive feedback. In this regard, a number of students saw the modules as a helpful reference throughout all writing stages—a process unfamiliar to most of the class. One such student explained that "having a formula is helpful when trying to get started, especially if you have never

attempted something like it before” (Y1SP-6). Others appreciated having a “visual representation of the topics, as well as the slide presentation on citations. It was very helpful” (Y1SP-5). Similarly, another student commented, “It’s nice to have the combination of the visuals and audio...I have problems with my vision” (Y1FG2-1). While not every student viewed or found the modules beneficial, there was praise for their availability for those who wanted them. For example, though one student sought other resources to help them engage in the writing process, they appreciated “the way the resources are there for people who need them...[Students] can have the resources right on D2L. That’s pretty beneficial” (Y1FG2-2).

Online discussion forums. Students had a predominantly negative response to online discussion forums, which were ranked as the least helpful of all the interventions. Few students found the writing samples their peers posted on D2L as helpful. This could be attributed to that fact that many students reported hesitancy and nervousness in sharing feedback with each other. One student stated, “I felt like if I said something it might crush their feelings because you could tell they worked so hard on it” (Y1FG1-1). Those who were not concerned with giving feedback were often suspicious of the quality of the feedback they received. Some referred to the discussion forums as a “mixed bag” because “it depends on which peers you interact with. Everyone’s coming from different vantage points, in terms of experience” (Y1FG2-1).

Despite this feedback, the instructor and TA were highly impressed with student contributions. The TA stated, “...[T]here was extensive feedback left, and I was surprised at the level of criticality used” (Y1IFG-1). The instructor further articulated that peer feedback afforded individuals who performed highly on assignments the ability to support their struggling peers. The instructor hoped part of the feedback process would be to “charge” these more successful students with the responsibility to communicate “and be able to pull out that assignment and say, ‘[H]ey, this is how I did well, and this is maybe where you can address some of those things’” (Y1IFG-1).

Out-of-class writing tutorials: Student response to the tutorials was overwhelmingly positive. Throughout the survey and focus group interviews, students referred to the tutorials as the most beneficial intervention for developing in their writing. The reasons for this rested on their flexibility and “because the prof made a variety of time slots” (Y1SP-24). Flexibility in offerings made the tutorials accessible to students with clustered, complicated, and often different schedules and afforded individuals with such disparaging circumstances the ability to seek support outside of regular class time. A number of students asserted, “[T]hey helped us refine our ideas and thesis, as well as come up with ways to

effectively incorporate evidence into our papers with proper citation” (Y1SP-5). Yet another student cited the communal nature of the tutorials as beneficial, explaining, “I just went there and listened, and I read other people’s papers, and that’s really helpful for me” (Y1FG2-2). Overall the social nature of the tutorials was a direct benefit to students which, in the case of one student, gave them the opportunity to “read over other people’s papers and then give me inspirations from them, or you know, take out the good ideas or interesting points, or the way they write and incorporate into my own paper” (Y1FG2-2, p. 8). Even for students who had not crafted drafts of their assignments to share and workshop with their peers, attending tutorials eased feelings of nervousness and uncertainty as “you get the sense that people are having the same questions or uncertainties” (Y1FG2-1).

However, the instructor and TA perceived the out-of-class tutorials to be more helpful to already skilled writers. The TA observed, “I think it maybe helps some stronger writers already, but I think there’s like another piece that has to be there for some of the weaker writers. It’s not enough to have one tutorial” (Y1IFG-2). Both the instructor and TA concurred that stronger writers benefitted more by seeking technical information (e.g. specific information about APA formatting) in the tutorials. These students were already capable writers concerned with technical proficiency and maximizing grades, whereas struggling writers, as the TA noted, “need more of an intervention” (Y1IFG-1).

Individual consultations with instructor and TA. Students found in-person consultations extremely helpful in developing their writing skills. In this regard, several expressed gratitude towards the instructor and TA as “they were both willing to look over your work and send you feedback on what you should work on” (Y1SP-33). Specifically, students commented on the instructor’s and TA’s abilities to remain accessible throughout the semester, deconstruct their marked assignments, and provide more “valid” feedback on their writing than their peers. Reflecting on the feedback they received in individual consultations, one student explained, “I went to the office hours and spoke to them ... I clearly made a connection with what I did wrong and how to improve for the next time” (Y1FG1-1). Another student, speaking more broadly about the support offered by the instructor and TA, commented, “[C]ompared to other classes, the amount of support provided in this class was heaps and bounds more than what I had received” (Y1SP-6). The instructor interview data further revealed that students made great use of office hours. Both the instructor and TA perceived this to be an effective strategy, illustrating how:

We instructed them to come see either of us, and the bulk of my meetings, that was something that they said, ‘You know what? Now I’m able to see

where my argument fell off, or what could have been better supported,' so that proved to be far more effective (Y1IFG-1).

Evaluation and Reflection on Cycle Two

Modification and improvement. In line with EDR's (McKenney & Reeves, 2012) emphasis on "multiple iterations of investigation, development, testing, and refinement" (p. 15), the research team analyzed the data from year one of the study to identify ways in which the various interventions could be modified and improved for the following year. As part of this process, the study team returned to their systematic review of the literature (Scott et al., 2017) to revisit key insights that could support their decision-making choices in relation to the refinements and modifications that were needed in year two. Along with making refinements and modifications to the various interventions introduced in the first iterative cycle, in the second year the study team also introduced three instructional videos informed by the flipped classroom model of instruction (Blair, Maharaj, & Primus, 2016).

Interactive modules. Although students had mixed reactions to the interactive modules, the study team decided to keep these in place. This decision was supported by both the positive feedback from some students and insights from the literature, including that of Nallaya and Kehrwald (2013), who argued that supporting writing in online spaces requires a level of accessibility via a combination of interactivity, audio, and discipline-specific material. However, it was clear from the data that modifications were needed. Seeking insight into what this should entail, the research team noted the work of Harris and Greer (2016), who found that without a student-centered approach involving a greater focus on the individual users rather than the system itself, online writing instruction often leads to limited skill acquisition, especially when delivered through an LMS.

The study team was unable, however, to modify the content of the modules themselves as funding to support the modification or creation of new modules was not available. Given this, in year two of the study the research team sought to better respond to the literature, which suggested that when introducing technological supports, there is a need for instructors to communicate the value of the technology, as well as how to best leverage the affordances a specific technology offers (e.g., Birch, 2016; Chanock et al., 2009). Based on insights from this same body of literature, the instructor sought to better link the modules to the two writing assignments by highlighting their use and value within class.

On-line discussion forums. Although the study team had great hopes for the discussion forums based

on the idea that writing should be understood as a social act (Babcock & Thonus, 2012; Graham et al., 2012), the majority of student participants found peer feedback questionable at best. Given this, the literature is clear that such forums have significant affordances. Wheeler and Wheeler (2009) posit, for instance, that the public nature of an LMS discussion forum increases accountability and may be responsible for the high volume and quality of postings. Birch (2016) likewise highlights the importance of a communicative environment that can be fostered in the discussion forums for bolstering students' confidence in their academic writing and ability to incorporate feedback into their work. Analysis of the qualitative data revealed, however, that students required greater assurances from instructors and peers that their feedback was valued in the writing process. Consequently, in the second year of the course, redesign efforts focused on creating a class activity in which the instructor modelled how to provide quality feedback in class. Students were also given time in class to post their work, as well as provide and respond to feedback from their peers.

Out-of-class writing tutorials and individual consultations with instructor and TA. Due to the very positive response in the survey, focus group, and instructor interview data, both the two out-of-class writing tutorials, as well as structured in and out-of-class opportunities for students to receive verbal feedback, were retained. This decision was supported by several studies that have documented the perceived importance and impact that small group and face-to-face interactions have on developing undergraduate students' writing skills (Allwardt, 2011; Engin & Donanci, 2016; Gunn et al., 2011). However, some modifications were made based on insights from the literature. Following Babcock and Thonus' (2012) advice, struggling students were specifically sought out for individual meetings to review their writing and provide additional support.

Instructional videos. While the out of class tutorials were retained, they were augmented by the addition of three online instructional videos created by the research team. The creation and deployment of these videos was informed by the flipped classroom model of instruction where the traditional classroom is inverted, emphasizing "interactive group learning activities inside the classroom and direct computer-based individual instruction outside the classroom" (Bishop & Verleger, 2013, p. 5). In this way time spent in the classroom can be dedicated to "tasks of a higher cognitive complexity" (Talbert, 2014, p. 362) by affording students time to engage in active, problem-based learning facilitated by the instructor.

A review of the literature prior to creating the videos suggested that both student and instructor

responses to the flipped classroom model has been generally positive (Cakiroglu & Ozturk, 2017; Findlay-Thompson & Mombourquette, 2014). The research suggests that despite the positive response by instructors and students, there is no conclusive evidence, however, to indicate that the flipped classroom model improves student performance (Blair et al., 2016). The research also highlighted that the flipped classroom requires significant time and material cost to effectively create, record, and edit out-of-class lecture material (Findlay-Thompson & Mombourquette, 2014). While there have been many studies experimenting with the impact of the flipped classroom in engineering (Velegol, Zappe, & Mahoney, 2015), mathematics (Talbert, 2014), and the sciences (Baeppler, Walker, & Driessen, 2014), it is important to note that a review of the literature indicates there have been limited studies in applying this model to promote academic writing. Although there were few cases of flipped classroom pedagogy used with academic writing in mind, and none within a Bachelor of Education program, the literature provided ample context for its use in this study.

Informed by this body of research, the research team saw the introduction of this intervention as a way to decrease the amount of class time spent providing writing instruction while also creating more time in the tutorial for students to receive feedback and ask follow-up questions around the specific struggles they are having (Balzotti & McCool, 2016; Engin & Donanci, 2016). Each instructional video was tailored to a specific assignment in the course and outlined strategies for students to improve their academic writing. For example, the first video tutored students on how to use university resources and Google Scholar to find a peer-reviewed journal article for Assignment 1. The second and third videos similarly provided guidance on writing strong introduction, body, and conclusion sections to an academic paper. Though some video content was designed with this class' assignments in mind, the information presented was intended to be useful for academic writing in any course context. Students were directed to watch the second and third videos prior to attending the two writing tutorials so less time could be spent on instruction and more on facilitating feedback from both the instructor and peers. Videos created by the researchers were posted online through YouTube, following precedents set in the literature (e.g., Findlay-Thompson & Mombourquette, 2014). Specifically, content around academic writing was shifted to videos for students to watch outside the classroom so that regular class time could be freed up to engage in learning activities where they worked with, and practiced, key insights presented in the videos (i.e., fully developing and elaborating on a key

idea from the research literature). These videos afforded students the ability to watch, pause, and revisit material in visual/audio formats at their convenience throughout the year.

Findings and Analysis Cycle 2

Interactive writing modules. As with year one of the study, reactions to the interactive modules were mixed. Overall, as indicated in the following responses, students identified the module focused on APA citations as the most helpful: "The APA module was really great straightforward, relevant, and overall very helpful" (Y2SP-9) and "[I]t gave me multiple different examples of citations to base my own off of (Y2SP-17). A number of students, however, once again highlighted a disconnect between the second module focused on thesis statements and argumentation and the course assignments. As one student noted, I "especially appreciated the citation help..., [but] you needed to weed through the other one to get what you needed" (Y2SP-18). Another student asserted the second module did not match the rubric and felt they had marks deducted "even though I followed what the modules says, when asked about it in person prof was unable to answer [and] admitted it is confusing" (Y2SP-16). Some students, as with year one, had difficulty locating the modules: "Sometimes I found them difficult to find, as (if I remember correctly) there were some support materials within the weekly sections/lecture slides" (Y2SP-13).

Online discussion forums. Despite researcher efforts to redesign the discussion forums (e.g. modeling proper feedback prior to directing students to provide peer-to-peer feedback), students continued to view discussion forums as not helpful and unimportant for academic writing. Throughout the course students posted when they were required to, and the forums were otherwise ignored. When asked, one student confessed, "I did it just only really because it was a requirement ... I didn't put much thought into it" (Y2FG-8). Others expressed surprise when prompted to reflect on the discussion forums' impact on their writing. One student explained the following:

I didn't realize that they were really supposed to—that it was intended to develop academic writing. I thought it was to get us talking about things ... and that was why I didn't put much thought into the academic writing part, I didn't think that was the point of the discussion posts (Y2FG-7).

While many students found the discussion posts unimportant or did not see their contribution to academic writing, others found a more casual use for them in facilitating communication, sharing ideas, and practicing discussion of course topics in a less formal setting. As one student noted, "To be honest, I didn't

realize the purpose of the discussion posts was to improve academic writing skills—I thought it was to communicate ideas with others” (Y2SP-8). A similar sentiment was expressed by another student who noted that discussion posts were helpful in teaching them “how to discuss with somebody in like a constructive manner when you don’t agree” (Y2FG-4).

Out-of-class writing tutorials and individual consultations with instructor and TA. Students continued to find the tutorials as central to their development as writers. Echoing comments from Cycle One, one student explained, “I am really glad I went in because the things I needed to tweak were things I would have been really mad if I lost marks on ... [T]o get that actual feedback about my thesis statement was really helpful” (Y2FG-8). Many students emphasized the positive benefits that can accrue from the communal nature of the tutorials, which facilitated an environment that relieved students who thought they were alone in struggling to complete course writing assignments. One student wrote, “I was able to talk to other students and have their insights on what I had so far. They gave me their opinions and offered a sense of support as they were also in a similar dilemma, needing help” (Y2SP-15).

The social and more informal nature of the tutorials helped reduce students’ sense of anxiety around the writing process. As one student noted, the small group nature of the tutorials helped them realize “that professors aren’t there to get us, in reality they’re also human beings that want all students to succeed” (Y2SP-12). The same student who was at first nervous, even frightened of approaching the instructor individually with questions, further expounded upon this humanizing element of the tutorials: “[E]ven going to the second tutorial I felt way more comfortable going in once I got over the whole intimidation thing” (Y2FG-4).

When asked how the tutorials could be improved, one student commented, “The only thing I would suggest would be to have more graduate students available to help, or smaller workshop groups!” (Y2SP-8). Others recommended making the tutorials longer to allow more direct feedback or offering more tutorials earlier in the semester before assignment deadlines approached. Further feedback on how later iterations of the course could be improved suggests that more work needs to be done to accommodate students who are not able to seek direct assistance outside of class time. For future offerings of the course, students additionally encouraged researchers to create more online content for those unable to receive additional on-campus support. In the case of one student, “The times of the workshops were not available to everyone, and I think additional resources such as websites or guides posted on D2L would’ve been helpful” (Y2SP-10).

Out class face-to-face feedback sessions were met with overwhelming approval from students. This nervousness

was best articulated in the focus group data when one student explained, “I didn’t know what to expect. And like, we had never really talked to [the instructor in a] one-on-one kind of thing ... and then I went into his office and that was even scarier” (Y2FG-4). However, the same student also noted that going to the tutorials helped them overcome this initial nervous disposition.

Instructional videos. Overall, students responded very positively to the instructional videos. When asked about their effectiveness, for instance, one student noted how, after viewing the videos, they were “better able to clearly state my thoughts in my writing to get to the heart of what I wanted to say. The videos also gave me confidence in knowing that I was going in the right direction” (Y2SP-4). As reflected in the following statement, students particularly emphasized the videos’ effectiveness in preparing them to attend the out-of-class tutorials: “[The videos] had a list of things for you to accomplish before you went to the tutorial so you knew what [the instructors] were going to look at for you and help you with” (Y2FG-4). Another student similarly observed how the videos “had everything, you know—an explanation [of] what we should come to the tutorial with, prepared, and ... that was a good start. So you didn’t just go in there with nothing or with two sentences” (Y2FG-5).

Students also noted the technological affordances of the videos, as well as the ability to access them any time they wanted. In this regard, one student stated, “I am an audible learner who needs to hear the instructions a few times before I grasp the concept” and felt that they “could replay the videos as often as required without feeling like I was bothering someone” (Y2SP-24). In a similar vein, another student commented, “I struggle writing introductions and conclusions, so it was incredibly helpful to be able to have a video with tips and tricks that I could pause and play as I needed” (Y2SP-8).

Implications for Theory and Practice

Findings from this study point to a number of key insights to guide the design of future interventions to improve the academic writing abilities of students working in blended learning environments. Building on, but also extending, the original design principles developed for this study, these insights involve the interrelated relationship among technology, pedagogy, and course design. Reinforcing the systematic review of the literature conducted for this study (Author et al., 2017), student perceptions suggest that the advantages technologies offer in improving the acquisition of academic writing skills do not reside solely within a particular technology itself, but rather with how students interact with the technology. In thinking through how best to leverage a technology’s potential

findings from this study point towards a number of key considerations.

The first of these involves opportunities to develop intentional and structured opportunities to improve academic writing that places peer-to-peer formative feedback and dialogue at the forefront of design considerations. In both year one and year two, students observed that talking with their peers improved their writing. Specifically, the tutorials in particular offered a low-pressure environment for students to share their emergent writing and ideas in ways that helped them to realize that they were not alone in their struggles. Though students may have initially written alone, attending tutorials afforded students the kind of “collaborative dialogue” (Babcock & Thonus, 2012, p. 112) that allowed them to better develop their writing competencies and attain a greater sense of self-efficacy by learning through trial and error with their peers.

Student experiences of the interventions created for this study also supported insights from the greater research literature that highlights the need to weave ongoing formative assessment loops into course design (Birch, 2016; Chanock et al., 2009; Engin & Donanci, 2016; Wijeyewardene et al., 2013). To offset the time-intensive (and perhaps unrealistic) ideal of relying primarily on the instructor to offer detailed descriptive feedback to every student in a large lecture, students should be trained and equipped to undertake this work. While the data suggests that the social and communal nature of discussion forums in this course afforded students positive opportunities for idea sharing, in both cycles students found them less than helpful in promoting quality formative feedback. To make discussion forums a more productive space to promote formative feedback structures, findings from this study suggest that design efforts should specifically focus on greater scaffolding to model how to evaluate and provide feedback on writing. This could include, for example, showing examples of writing in class and then modeling how to use assessment criteria as a lens to identify ways the writing could be improved. Possibilities also exist to build peer-to-peer formative assessment into course assignments to ensure all students undertake the process.

In adopting such design strategies, however, this study suggests that writing interventions are most beneficial when they are introduced and understood as existing within a larger interconnected ecosystem designed to support not only academic writing, but also greater engagement with course content and ideas. Without this design mindset, in seeking to promote the acquisition of academic writing skills there is a danger of supplanting too much course time to the technical aspects of writing and thus losing out on needed time to engage course content. Thus, design considerations for improving academic writing should be introduced in ways that simultaneously improve overall academic literacy

where students gain greater capacities for interpreting, analyzing, and synthesizing the insights and ideas they are encountering in the course. Further supporting design principle one developed at the advent of this study, student feedback on the interventions developed for this course suggest that while the use of discussion forums or interactive modules on their own do not generally lead to significant gains, introducing a variety of interventions across a variety of platforms can help leverage the affordances of both in-person and online resources.

Conclusion

While academic writing skills are key competencies that undergraduate students need to acquire during their degree studies—especially those who are in professional programs—the research literature is still at an emergent level of understanding about how this can be best promoted in blended learning environments. We hope that findings from this study can help to build on the important work that has been done in this area to inform instructors and course designers as they continue to develop new approaches for teaching academic writing for undergraduate students within higher education contexts.

Taken as a whole, this study suggests the need to shift attention away from a focus on the use of a single technology or set of technologies toward the specific pedagogical techniques and instructional design measures that are likely to be effective in relation to the material being studied. This includes the importance of developing collaborative writing communities that involve intentional and structured opportunities for formative feedback, whether through peer-to-peer interactions or by the instructor. This study also points to a need to see the introduction of interventions to better teach academic writing as part of a larger ecosystem within the design of the course. In adopting a focus on the overall learning ecosystem, qualitative data from this study also indicates that academic writing can be best promoted when a variety of interventions are introduced in ways where they are used in conjunction with one another rather than in isolation. Guided by these insights, instructors and curriculum developers are afforded significant opportunities to design their courses around improving academic writing as an essential proficiency for university students, not only for their success in undergraduate and professional programs, but also as a key competency needed to thrive in a rapidly changing socio-economic landscape.

References

- Allen, M., & Tay, E. (2012). Wikis as individual student learning tools: The limitations of technology. *International Journal of Information*

- and *Communication Technology*, 8(2), 61–71. doi:10.4018/jicte.2012040105
- Allwardt, D. (2011). Writing with wikis: A cautionary tale of technology in the classroom. *Journal of Social Work Education*, 47(3), 597–605. doi:10.5175/JSWE.2011.200900126
- Articulate Storyline (2018). Retrieved from <https://articulate.com>
- Babcock, R., & Thonus, T. (2012). *Researching the writing center*. New York, NY: Peter Lang.
- Baepler, P., Walker, J. D., & Driessen, M. (2014). It's not about seat time: Blending, flipping, and efficiency in active learning classrooms. *Computers & Education*, 78, 227–236.
- Balzotti, J., & McCool, L. (2016). Using digital learning platforms to extend the flipped classroom. *Business and Professional Communication Quarterly*, 79(1), 68–80. doi:10.1177/2329490615606497
- Bartlett, T. (2003). Why Johnny can't write, even though he went to Princeton. *Chronicle of Higher Education*, 49(17), A39–A40. Retrieved from <https://eric.ed.gov/?id=EJ661292>
- Birch, H. J. S. (2016). Feedback in online writing forums: Effects on adolescent writers. *Teaching/Writing: Journal of Writing Teacher Education*, 5(1), 74–89. Retrieved from <https://tspace.library.utoronto.ca/bitstream/1807/75571/1/Feedback%20in%20Online%20Writing%20Forums.pdf>
- Bishop, J. L., & Verleger, M. A. (2013). *The flipped classroom: A survey of the research*. Paper presented at the 120th ASEE Annual Conference & Exposition, Atlanta, GA.
- Blair, E., Maharaj, C., & Primus, S. (2016). Performance and perception in the flipped classroom. *Education and Information Technologies*, 21(6), 1465–1482. doi:10.1007/s10639-015-9393-5
- Boice, R. (1990). *Professors as writers: A self-help guide to productive writing*. Stillwater, OK: New Forums Press.
- Cakiroglu, U., & Ozturk, M. (2017). Flipped classroom with problem-based activities: Exploring self-regulated learning in a programming language course. *Educational Technology & Society*, 20(1), 337–349. Retrieved from <https://www.jstor.org/stable/jeductechsoci.20.1.337>
- Chanock, K., D'Cruz, C., & Bisset D. (2009). Would you like grammar with that? *Journal of Academic Language & Learning*, 3(2), 1–12. Retrieved from <http://journal.aall.org.au/index.php/jall/article/view/Article/70>
- Defazio, J., Jones, J., Tennant, F., & Hook, S. (2010). Academic literacy: The importance and impact of writing across the curriculum—a case study. *Journal of the Scholarship of Teaching and Learning*, 10(2), 34–47. Retrieved from <https://eric.ed.gov/?id=EJ890711>
- Dishaw, M., Eierman, M., Iversen, J., & Philip, G. (2011). Wiki or word? Evaluating tools for collaborative writing and editing. *Journal of Information Systems Education*, 22(1), 43–54. Retrieved from <https://eric.ed.gov/?id=EJ931449>
- Ellis, M. J. (2011). Peer feedback on writing: Is on-line actually better than on-paper? *Journal of Academic Language & Learning*, 5(1), A88–A99. Retrieved from <http://journal.aall.org.au/index.php/jall/article/view/130/96>
- Engin, M., & Donanci, S. (2016). Instructional videos as part of a 'flipped' approach in academic writing. *Learning and Teaching in Higher Education: Gulf Perspectives*, 13(1), 1–8. doi:10.18538/lthe.v13.n1.231
- Fallahi, C. R., Wood, R. M., Austad, C. S., & Fallahi, H. (2006). A program for improving undergraduate psychology students' basic writing skills. *Teaching of Psychology*, 33(3), 171–175. doi:10.1207/s15328023top3303_3
- Findlay-Thompson, S., & Mombourquette, P. (2014). Evaluation of a flipped classroom in an undergraduate business course. *Business Education & Accreditation*, 6(1), 63–71. Retrieved from <https://ssrn.com/abstract=2331035>
- Goddard, P. (2002). Promoting writing among psychology students and faculty: An interview with Dana S. Dunn. *Teaching of Psychology*, 29(4), 331–336. doi:10.1207/S15328023TOP2904_16
- Graham, S., Gillespie, A., & McKeown, D. (2012). Writing: Importance, development, and instruction. *Reading and Writing*, 26, 1–15. doi:10.1007/s11145-012-9395-2
- Gunn, C., Hearne, S., & Sibthorpe, J. (2011). Right from the start: A rationale for embedding academic literacy skills in university courses. *Journal of University Teaching and Learning Practice*, 8(1), 1–10. Retrieved from <https://ro.uow.edu.au/jutlp/vol8/iss1/6>
- Harris, H. S., & Greer, M. (2016). Over, under, or through: Design strategies to supplement the LMS and enhance interaction in online writing courses. *Communication Design Quarterly*, 4(4), 46–54. doi:10.1145/3071088.3071093
- Heritage, M. (2010). *Formative assessment and next-generation assessment systems: Are we losing an opportunity*. Los Angeles, CA: National Center for Research on Evaluation, Standards, and Student Testing (CRESST).
- Holtzman, J. M., Elliot, N., Biber, C. L., & Sanders, R. M. (2005). Computerized assessment of dental student writing skills. *Journal of Dental*

- Education*, 69(2), 285-295. Retrieved from <http://www.jdentaled.org/content/69/2/285>
- Kopcha, T., McGregor, J., Shin, S., Qian, Y., Choi, J., Hill, R., Mativo, J., & Choi, I. (2017). Developing an integrative STEM curriculum for robotics education through educational design research. *Journal of Formative Design in Learning*, 1(1), 31-44. doi:10.1007/s41686-017-0005-1
- Manzo, K. K. (2003). NAEP results underscore need to up writing instruction. *Education Week*. Retrieved from <https://www.edweek.org/ew/articles/2003/08/06/43naepwrite.h22.html>
- McKenney, S., & Reeves, T. (2012). *Conducting educational design research*. Abingdon, IL: Routledge.
- Miles, M., Huberman, M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Thousand Oaks, CA: Sage.
- Nallaya, S., & Kehrwald, J. L. (2013). Supporting academic literacies in an online environment. *Journal of Academic Language and Learning*, 7(2), 79-94. Retrieved from <https://hdl.handle.net/1959.8/154665>
- National Writing Project. (2010). *Because digital writing matters*. San Francisco, CA: Jossey-Bass.
- Saidy, C. (2015). We learned what? Pre-service teachers as developmental writers in the writing methods class. *Teaching/Writing: The Journal of Writing Teacher Education*, 4(1), 108-124. Retrieved from <http://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=1119&context=wte>
- Scott, D., Ribeiro, J., Burns, A., Danyluk, P., & Bodnaresko, S. (2017). *A review of the literature on academic writing supports and instructional design approaches within blended and online learning environments*. Calgary, CA: University of Calgary. Retrieved from <http://hdl.handle.net/1880/51960>
- Stein, M., Dixon, R. C., & Isaacson, S. (1994). Effective writing for diverse learners. *School Psychology Review*, 23(3), 392-405. Retrieved from <http://psycnet.apa.org.ezproxy.lib.ucalgary.ca/record/1995-19386-001>
- Stetson, S. (2016). Building up to collaboration: Evidence on using wikis to scaffold academic writing. *Journal of Academic Writing*, 6(1), 134-144. doi:10.18552/joaw.v6i1.288
- Talbert, R. (2014). Inverting the linear algebra classroom. *PRIMUS*, 24(5), 361-374. doi:10.1080/10511970.2014.883457
- Tuomainen, S. (2016). A blended learning approach to academic writing and presentation skills. *International Journal on Language, Literature and Culture in Education*, 3(2), 33-55. doi:10.1515/llce-2016-0009
- Velegol, S. B., Zappe, S. E., & Mahoney, E. (2015). The evolution of a flipped classroom: Evidence-based recommendations. *Advances in Engineering Education*, 4(3), 1-37.
- Wang, F., & Hannafin, M. J. (2005). Design-based research and technology-enhanced learning environments. *Educational Technology Research and Development*, 53(4), 5-23. doi:10.1007/BF02504682
- Wheeler, S., & Wheeler, D. (2009). Using wikis to promote quality learning in teacher training. *Learning, Media and Technology*, 34(1), 1-10. doi:10.1080/17439880902759851
- Wijeyewardene, I., Patterson, H., & Collins, M. (2013). Against the odds: Teaching writing in an online environment. *Journal of Academic Language & Learning*, 7(2), A20-A34. Retrieved from <http://journal.aall.org.au/index.php/jall/article/view/Article/269>
- Wingate, U., Andon, N., & Cogo, A. (2011). Embedding academic writing instruction into subject teaching: A case study. *Active Learning in Higher Education*, 12(1), 69-81. doi:10.1177/1469787410387814
- Yancy, K. B. (1998). *Reflection in the writing classroom*. Logan, UT: Utah State University Press. Retrieved from https://digitalcommons.usu.edu/usupress_pubs/120/
- Yang, Y., & Durrington, V. (2010). Investigation of students' perceptions of online course quality. *International Journal on E-Learning*, 9(3), 341-361. Retrieved from <https://www.learntechlib.org/p/29460/>

DAVID SCOTT is an Assistant Professor in the Werklund School of Education at the University of Calgary where he is Director of Student Experiences for the community-based pathway. David's research explores how educators make sense of officially mandated curriculum shifts. As part of this work, David has published over fifteen peer-reviewed journal articles, including a recent publication around the efficacy of inquiry-based approaches to education. He is currently co-investigator on a 2.5 million Government of Canada SSHRC Partnership Grant entitled: *Thinking Historically for Canada's Future*. Recognized with the Werklund Teaching Excellence Award in 2017, David teaches in the areas of social studies education and design-based thinking.

SAM ULMER-KROL is a graduate student enrolled in the Master of Arts in Educational Research program within the Werklund School of Education at the University of Calgary. His research examining student experiences and understandings of a General Education program at a mid-sized university in Western Canada is funded by the prestigious Social Sciences and Humanities Research

Council of Canada Scholarship. In addition to his studies and research, he is employed by Academic Advising Services at Mount Royal University in Calgary.

JASON RIBEIRO is the Director of Strategy at Calgary Economic Development and is simultaneously completing his Ph.D. research at the University of Calgary (funded by the prestigious SSHRC Bombardier Canada Graduate Scholarship). His research aims to

assist organizational leaders in shaping, leading, and sustaining innovation efforts in cross-sector partnerships. He is an active member of the academic community, and has taught over 600 university students, written 13 scholarly works, and delivered over 20 national/international conference presentations. He also holds a Master's degree from Brock University and undergraduate degrees from McMaster University and York University.