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The Impact of an Online Writing Studio on Online Graduate Students

Andrew Kirschner, Ph.D. , Stephanie VanDeventer, Ph.D. Cynthia Glenn, Ph.D.

Abstract

A team of writing consultants at The Graduate Online Writing Studio (The Writing Studio) at the Keiser University Graduate School conducted an inquiry of its users regarding their experiences with The Writing Studio. Employing a quantitative approach using online surveys, the purpose of this study was to explore the impact of an online writing studio on online graduate students. Specifically, the study sought to determine the degree to which students believe that a writing studio can affect the development and quality of their writing, the effect that the availability of help with writing contributes to confidence and improvement in their coursework, and whether the services of a writing studio affects their decision to remain in school. Responses showed that uses of the writing studio were wide-ranging with most students using it more than once during their academic careers and believing that the purpose of the writing studio was to help them improve their writing and develop skill with APA. Overall, students who use the service view their writing abilities across a very broad spectrum, use it throughout their time at the university, and see the writing studio as a service that helps them to improve their writing and academic performance.

Keywords: writing studio, student retention; online university students

The Status of Studios

While writing studios are a common service at universities across the United States, the value they offer – from the student's perspective – may vary by institution. At the basic level, most writing studios offer a website providing students with writing help, including structure, format, assistance with citing correctly, information regarding plagiarism, and grammar tips. Other studios offer services where

a student may submit a paper for a writing consultant to critique for some or all of these issues and/or the examination of critical thinking and fulfillment of the assignment. Finally, there are some studios that offer in-person experiences, either drop-in or by-appointment, in which students receive one-on-one help with writing issues ranging from learning proper citing to academic voice, developing persuasive arguments, and goal setting. These writing studios offering such services to both the graduate and undergraduate levels are typically staffed from between 10 to as many as 40 faculty and graduate students serving as consultants to both students and faculty. These organizations offer in-class visits for writing assistance, video tips and training, faculty training, proofreading and editing assistance, virtual screen-share sessions, faculty and student writing groups, special assistance with ESL issues, discipline-specific writing assistance, and much more.

The Student Perspective

Students typically retain the option to partake in a writing studio's services, however, some professors, after experience with a given student's work, may recommend that a student use the services more frequently. Professors may make these suggestions for students with English language difficulties and for students with general writing challenges.

While much research exists regarding what constitutes good writing, it is not well known how students themselves perceive the services of writing studios to help them become good writers, nor is there information examining students' experiences with writing studios. For instance, do students believe that they benefit from the feedback given? Do they understand the feedback offered? Do they apply the suggestions and comments to their papers? Do they believe that the feedback helps to improve their writing? Do the services of a writing studio make them more confident about their writing? Do they believe that the ability to improve their writing, with the assistance of a writing studio, helps them to improve their grades or motivates them to stay in their programs? These are some of the questions that this study intends to address and hopes to resolve.

Rationale

This study aims to provide valuable information to the university regarding student beliefs, attitudes, and experiences about a major university service – information that can help in making decisions about the future direction and development of writing studios. All universities strive to determine how best to allocate resources to serve students, help them grow, and retain them. Answering the questions posed by this study can provide direction to university administration and faculty as they strive to better serve students through understanding their actual needs as opposed to faculty- or administration-perceived needs.

This study also aims to assess the relationship between writing studios, improved grades, and retention. Students with poor writing skills are more likely to fail a given course and more likely to leave a university before finishing their programs. By talking with students directly about their own experiences with The Writing Studio, we, the researchers, hope that attitudes regarding these issues will emerge and lend themselves to exploration.

First, any comments that are made by writing consultants must begin with a commendation to the student-client for using their services. Second, there needs to be a balance of comments made by the consultant between content and writing mechanics, which can foster encouragement that the student can and will improve his or her writing skills (Parscal, 2010). The consultant's comments need to be taken to heart by the student-client, and actual attempts of incorporating the suggestions should be made in the revised pieces they write after submitting work to the writing studio. Third, faculty need to be encouraged to invite all of their students to submit work to the writing studio, not just those who are inferior writers.

While it is necessary for writing consultants to be extremely skilled writers, it is not imperative that every member of the team have their terminal degree. For the purposes of this study there are a range of graduate degrees held by those employed at the writing center: full- and part-time consultants, adjunct faculty, and a department chairperson. Likewise, the primary research area of each writing consultant need not be the same across the board. Since there is such a wide variety of work reviewed

with the purpose of creating and improving written communication skills, it actually benefits an online writing studio to have a wide spectrum of life and professional experience.

Students who submit work to a writing center can be put off when the comments they receive from various reviewers are perceived to be inconsistent, or when the suggestions received are vastly different from the students' professors and their individual standards of excellence. For example, some professors are particularly interested in an accurate adherence to formatting guidelines used by their institution while others are less concerned with form, focusing more attention to content. Some students also choose to accept those suggestions they deem easy to fix, while ignoring more difficult tasks such as more deeply synthesizing a section to show an evaluative analysis of the research they have studied.

Finally, working with at-risk students creates challenges that go beyond the scope of this study but will be obliquely addressed as the issue pertains in part, to writing, in general. Lumina Foundation (2015), a nonpartisan educational research and analysis group, reported that 60% of all college students in the United States drop out before obtaining a certificate or degree. Many of these students eventually return to school, but with lackluster skill sets and many insecurities about graduating. Due to the convenience of attending online institutions, a high proportion of these underprepared nontraditional learners find themselves taking online courses while simultaneously holding down at least one job, caring for a family, or being an active member of the military.

Follow-up telephone and/or web-based conference calls need to be made by the consultants in order to learn how helpful the comments suggested were received and utilized. This added benefit can help ameliorate confusion; it also provides the human touch necessary that is sometimes too easy to miss in an online platform. Consultants need to keep thorough records on the number of student-clients with whom they work, including short follow-up surveys completed by the students and copies of the reviewed papers being sent to the student-clients' professors.

All of these steps help build trust (Glenn, 2016), and for those students especially who are more accustomed to a brick-and-mortar educational setting, seeing comparable learning outcomes achieved in an online learning environment can mean the difference between using an online writing studio or not.

There are many factors that contribute to helping at-risk students: whole course redesign, active learning, computer-based learning resources, mastery learning, on-demand help, and alternative staffing (Twigg, 2009, 149). For the purposes of this study, the information will be presented in such a way as to specifically meet the needs of students working with writing consultants at an online writing studio.

Research Questions

Q1: To what degree do students believe that a writing studio can affect the development and quality of their writing?

Q2: To what degree do students believe that help with writing contributes to confidence and improvement in their coursework?

Q3: Do students believe that the services of a writing studio help to improve their grades?

Q4: Do students believe that the services of a writing studio affect their decisions to remain in school?

Survey Questions

Question 1: Approximately how many times have you used The Writing Studio in the past year?

Question 2: What do you believe is the purpose of The Writing Studio?

Question 3: Why do you use The Writing Studio?

Question 4: How would you describe your writing ability? (above average, average, below average, unsure)

Question 5: How long have you been a graduate student at Keiser University?

Question 6: In what ways do you believe The Writing Studio affects your writing?

Question 7: If The Writing Studio has helped you, in what specific areas has it helped you?

Question 8: How often do you apply the feedback you receive on your work from writing consultants?

Question 9: How do you decide which feedback to apply and which feedback to disregard?

Question 10: What do you believe is the most important service provided by The Writing Studio?

Question 11: How does your professors' feedback on your work differ after you use The Writing Studio, if at all?

Question 12: How do you believe using The Writing Studio impacts your academic performance?

Question 13: In what ways, if any, has The Writing Studio helped you to build confidence in your abilities as a student?

Question 14: In what ways, if any, has the writing studio helped you remain enrolled at Keiser University?

Question 15: How do you believe your experience in graduate school might have been affected if you had not had access to the services of The Writing Studio?

Survey Questions by Research Question

Background Questions

Approximately how many times have you used the online writing studio in the past year?

What do you believe is the purpose of the writing studio?

Why do you use the writing studio?

How would you describe your writing ability? (above average, average, below average, unsure)

How long have you been a graduate student at Keiser University?

Research Question #1: How do students believe using a writing studio affects their writing?

If the writing studio has helped you, in what specific areas has the writing studio helped you?

How do you believe the writing studio has affected your writing?

How often do you apply feedback you receive on your work from writing consultants?

How do you decide which feedback to apply and which feedback to disregard?

Research Question #2: How do students believe using the writing studio impacts their academic performance?

1. What do you believe is the most important service provided by the writing studio?
2. How does your professors' feedback on your work differ after you use the writing studio, if at all?
3. How do you believe using the writing studio impacts your academic performance?

Research Question #3: How does a writing studio help to retain students?

1. In what ways, if any, has the writing studio helped you to build confidence in your abilities as a student?
2. In what ways, if any, has the writing studio helped you remain enrolled at Keiser University?
3. How do you believe your experience in graduate school might have been affected if you had not had access to the services of the writing studio?

Literature Review

Universities have offered writing studio services to improve students' work for decades. In these intimate settings, individuals can come together, work with coaches, and get immediate feedback on their work. Writing studios are often collaborative, providing a more casual interactive setting for people who want to improve their craft. The advent of an online writing studio, however, is a bit newer, and a little bit trickier to accomplish effectively because there is no face-to-face contact with the coaches and coached. (Kovach, Miley, & Ramos, 2012). This literature review will examine how building rapport with online student-clients, meeting the needs of these students, and addressing the unique challenges of an online writing studio can produce a more intimate setting built within an online platform without the benefit of face-to-face interaction. It will also consider future implications for

operating a vibrant online writing center that meets the needs of its graduate students who utilize their services.

Building Rapport

In an earlier study, Booth and Record (2013) discussed their creation of an online writing center that proved to be quite successful in meeting the needs of graduate students at their institution. This current study explores an extended role of an online writing studio and how its impact can affect the academic progress of graduate students who are seeking to improve their written communication skills. Consultants at any writing studio, particularly at a remote online location without benefit of face time with their student-clients, need to be able to provide helpful information that students can integrate into their weekly course work.

De Young (1996) posited, "Ultimately, the care with which we treat one another within our organization is the source of empowerment, and provides the foundation for good design" (p. 255). Conanan and Pinkard (2001) replicated this finding in a 14-week study they conducted at a major university in the United States, whereby they implemented a web-based program that enabled graduate students to critique architectural designs presented in a class by learning peers. They found that both online and face-to-face interaction with students can be respectful and, therefore, beneficial in meeting the needs of students whose written work is being critiqued.

In their findings they discovered that, among other things, "rapport among students played a role in students' participation in critiques" (p. 4). This finding deviates a bit from Palmquist's (2003) claim that the use of technology to aid students as a means of giving more support than an "Atta boy" kind of comment on a submitted paper helps build trust between the reviewer and the student, which is sometimes a problem when only peer support is utilized. When the critique is provided by experts whose skill exceeds that of the students presenting work to be reviewed, the combination of written and verbal critique can provide a sturdier scaffold by which to improve their writing skills. It also provides

an opportunity for the students to reflect on what they are being asked to consider in order to improve the documents they submit for review.

Rubin (2002) suggests the use of online conversations as a means to provide dialog between writers and coaches. Providing a give-and-take between the coach and author of a submitted paper can be accomplished but may be a challenge if the number of papers to be reviewed by the consultants of an online writing studio precludes the ability to help more than a handful of student-clients, or if students prefer to have conferences via telephone or Skype calls. Real time meetings with student-clients need to also consider time zone differences, work schedules, or other potential obstacles unique to synchronous consultations.

Meeting the Needs of Online Writing Student-clients

When students feel they are part of a learning community, it helps them thrive academically (Curwin, 2006; Twigg, 2009; Weimer, 2013; Glenn, 2013, 2016). The needs of all students remain the same: They need to be treated with respect in a safe learning environment, have lessons that are relevant to their lives, and have time to practice what they learn. These pillars lead to student motivation and learning (Glenn, 2013). Moore (2008) and Simpson (2012) maintained that while many of the same supports used to help on-ground students be successful can be transferred to an online setting, more care needs to be given to these distance learners due to the ease with which miscommunication can occur.

In order to meet these same criteria for online students submitting written assignments to a writing studio for review and critique, there has to be an element of human contact. Utilizing Vygotsky's (1979) zone of proximal development (ZPD) is an integral part of effectively working with students as they become better and more effective written communicators. Since students typically come to a writing studio voluntarily, the assumption is that they want to have their work reviewed and critiqued, with the goal of improving their writing. Open lines of communication promote the success of an online writing studio (Swan, 2015; Moore, 2008) and precludes the all-important factor of student

satisfaction. Purposeful interaction is key, and there are several steps writing consultants can take to achieve this outcome.

Challenges of an Online Writing Studio

A major challenge that is being faced across the entire spectrum of higher education is many students' inability to think deeply and write well synthesized evaluative analyses of the research they are studying (Ondrusek, 2012; Tanner & Tanner, 2007). This inability to easily utilize higher thinking order skills as a means to effectively communicate translates quite readily and noticeably in students' writing, and is manifested in a couple of ways. At one end of the spectrum are students facing a blank screen; they don't know what to write, so they write nothing (Mullen, 2006). At the other end of the spectrum are those students who unintentionally or intentionally plagiarize their written work; the former being when inaccurately cited material is submitted to an electronic database that screens for copied work, and the latter being submitted work by students who hope they won't get caught cheating (Morgan & Vaughn, 2010). While there are, of course, varying degrees of these examples, the general idea remains that many students just aren't sure what to write because they lack the skill set to think for themselves in a way that encourages them to take academic risks.

Another challenge that any writing studio faces, particularly online, is working with international students. Sadykova and Dautermann (2009) identified four domains that need to be addressed when working with international students: 1) host institution, 2) technology, 3) learning models of students, and 4) teaching models of faculty (p. 89). This goes beyond the general concept of multicultural teaching and learning, which is certainly influenced by the wealth of host institutions in the United States (Bentley, Tinney, & Chia, 2005), as compared to the countries of many of their students who hail from areas of the world that do not enjoy as high a degree of infrastructure supporting their technological access (McIsaac, 2002). Another factor when considering host institutions is the accreditation systems set for accommodating international students, and what that might look like in terms of supporting these scholars academically.

Since the command of English can vary greatly among international students, it is also imperative to consider both the learning models of students and the teaching models used by faculty, in general, but particularly in a writing studio (Sadykova & Dautermann, 2009). For example, many international students may be in a doctoral program and writing in a language that is not only not their primary language, but a third or fourth language. This reality can create problems in written communication; it can also cause friction when students receive comments from writing consultants for improvement in areas of basic syntax or writing mechanics.

Whole course redesign. Instead of being part of the institution's general web site, writing studios that are independently run and operated by their writing consultant team allows more flexibility in how their student-clients receive information. For example, the traditional set-up of having a syllabus with multiple assignments as well as due dates, is not part of the make-up of an online writing studio. Instead, student-clients are invited to submit their work via email, which the consultants then receive and review.

Glenn (2016) suggests that a change in paradigm may be necessary, balancing the convenience of a well-designed course that challenges students and motivates them to want to learn, against an autonomous writing center that is much less complicated. By removing the construct of students viewing multiple assignments to be completed and submitted to their online course, they can focus single-mindedly on one particular piece of writing, submitting it to a real person who is not emotionally attached to course curricula and who can, therefore, be more objective in his or her critique, which makes using an online writing studio more attractive for students to consider.

Active learning. Active learning is not a new idea. Dewey (1925, 2008) wrote about it at the beginning of the twentieth century. Many others have studied this and have found that it is the lynchpin for helping students, in general, and student-clients at an online writing studio, specifically (Kolb, 1984; Bishop & Robertson, 2016; Venkatesh, Croteau, & Rabah, 2014; Glenn, 2013; Weimer, 2013; Zapalska & Brozik, 2007) . Consultants want their feedback be meaningful and helpful to those

students who seek advice on how to improve their written communication skills. This can be done when student-clients actively participate in the editing process provided by the consultants at the writing studio, when they understand and accept or actively challenge the rationale of the content or editing suggestions that are made by the consultants (Nora & Snyder, 2008-2009; Glenn, 2016).

Computer-based learning resources. Online writing studios will frequently embed "technology roadmaps" which outline various software requirements, as well as other tutorials, videos, and threaded discussions (Jiang, 2002; Benke, 2003; and Cochrane, 2004), enabling their student-clients to explore articles, templates, and other helps to aid them in becoming better written communicators.

Mastery learning. Mastery learning research is prevalent in the field with various takes on how to achieve it. From transmitting meaning to constructing meaning (Costa & Kallick, 2010), to innovative student-centered (Coutts, 2013) and problem-centered (Weimer, 2013) learning, students are being asked and even expected to think deeply and critically, and creatively solve problems from a didactic math problem to case study scenarios. Within the context of an online writing studio, writing consultants ask student-clients to consider the content and mechanics suggestions made to improve their writing and practice those skills, incorporating into subsequent papers what they are learning.

On-demand help. While student-clients send their work to online writing consultants asynchronously via email, they are invited to contact the writing studio at any time during their courses to receive help or advice on their assignments. They are given options to receive online consultations, telephone consultations, and Skype consultations. Moore (2008) has found that once trust between a student-client and writing consultant has been established, calls for general advice on writing tend to increase. The various options for students and degree of support in the online writing studio setting can increase such trust and learning outcomes.

Conclusions and Implications

The literature clearly shows that it is possible to provide a successful studio environment for writing collaboration, even within the construct of an online learning platform. It is necessary to build rapport with the student-clients who use the service, meet the needs of those writers who submit their work for review, and to address challenges that are not only unique to an online writing studio but to helping higher education students, in general, become better written communicators. The implications for doing so can impact student retention at the graduate level because students who write well tend to persevere in their classes, stay in school, and graduate.

Methodology

We constructed a survey to gauge graduate students' satisfaction with The Graduate Online Writing Studio. We beta tested the survey on three existing graduate students that use The Writing Studio. Researchers sent the survey with a consent form via email to 109 graduate students who have used The Writing Studio at least once in the past four months. A total of 17 students completed the survey. We read, disaggregated, summarized, and analyzed the data, including comments as a representative sampling from those students.

Summary of Data

Question 1: Approximately how many times have you used The Writing Studio in the past year? Eleven students stated they used the service 1-6 times, and three students stated they used it 13 or more times.

Question 2: What do you believe is the purpose of The Writing Studio? Students responded that they believe the purpose of The Writing Studio is to help them improve their writing and other APA skills.

Question 3: Why do you use The Writing Studio? Student #1 wrote, "I have difficulty with grammar and need help with it and I submit my papers to make sure that what I am saying makes sense. As I am not American born." Student #2 responded, "I use the writing studio because they are welcoming,

nonjudgemental [*sic*], and they hold me to a high standard. It is obvious that they really want to help me improve as a writer. They are dependable and follow through with direct phone calls to ensure that the feedback provided was helpful and educational. I always learn something from the staff within the writing studio and the turnaround time (I have always gotten papers back in less than 48 hours) is amazing, considering the detailed feedback I receive!!" Student #3 wrote, "I desire to have the best essay possible." All of the replies to this question indicated that students use the service to improve their writing and academic performance.

Question #4: How would you describe your writing ability? One student chose beginner; nine students chose intermediate; and six students chose advanced.

Question 5: How long have you been a graduate student at Keiser University? Ten students responded less than one year; three students indicated 1-2 years; and one student indicated more than two years.

Question #6: In what ways do you believe The Writing Studio affects your writing? Student A wrote, "Helps me be conscience of simple mistakes and ways to go depth with concepts." Student B wrote, "I find that my writing is "good" but that is a relative term. The Writing Studio always helps me to specifically define what the current "good" components of my writing are, and highlight the details of what "great" writing could be. They don't give me feedback that is beyond my grasp, my feedback is appropriate for my current level of writing." Student C wrote, "The consultants are professional and provide excellent writing support." The students' responses indicated that the service helps them to become better writers.

Question #7: If The Writing Studio has helped you, in what specific areas has it helped you? Student A wrote, "Has helped me see a different way of thinking and areas I have problems with." Student B remarked, "The detailed information given and the additional information that is sometimes provided (references to books, helpful videos, or a Word document with things to remember) have helped me." Student C replied, "Made me more aware of proper grammar, and has made me more careful to stay inside the tight confines of critical thought. My APA abilities suffer at times as well."

All of the responses indicates that the service has helped students to improve their APA compliance, critical thinking skills, content, and writing proficiency.

Question #8: How often do you apply the feedback you receive on your work from writing consultants? Of all participants, 64% replied always and 21% responded most of the time. One student indicated "sometimes" and one student indicated "never."

Question #9: How do you decide which feedback to apply and which feedback to disregard? Student A explained, "I have not had any feedback that I needed to disregard." Student B stated, "It depends on whether or not I believe the feedback will improve my paper or assignment." Students explained that they either tend to apply all feedback or selectively choose the feedback they believe will best help improve their work.

Question #10: What do you believe is the most important service provided by The Writing Studio? Every student chose "writing feedback" and two students also chose "follow-up" phone calls.

Question #11: How does your professors' feedback on your work differ after you use The Writing Studio, if at all? Student A replied, "One feature that I like is that the Writing Studio copies my professor in on all emails once the initial feedback request form is received. Therefore, the feedback is shared. Also, when I submit assignments I also submit an assignment that has received feedback from my professor so that the member of the Writing Studio can better assist me and see the type of feedback that my professor has previously provided. Helps me to better progress as a writer." Student B stated, "The Writing Studio improves my work which result in a better grade." Students responses to this question varied, however, most students stated they noticed the service helped them receive more positive comments from their professors.

Question #12: How do you believe using The Writing Studio impacts your academic performance? No students reported "no change," 14% reported a "slight improvement," 36% identified an "improvement," 43% noted a "significant improvement," and 7% were "unable to determine." Every

student, except one who was unable to determine if the service helps, stated that the service helps improve their performance.

Question #13: In what ways, if any, has The Writing Studio helped you to build confidence in your abilities as a student? Student A replied, “It makes me feel like it is ok to ask for and receive help.” Student B noted, “The Writing Studio is pleasant. It is hard to share your writing with someone and allow your imperfections, level of writing, and errors to be highlighted. However, all members of the Writing Studio are pleasant and make sure to add positive comments in between their constructive feedback.” Student C explained, “tremendously, haven't wrote [*sic*] a paper in over 10 years.” Student D wrote, “The emails and phone calls with them....hearing a word of encouragement.” Student E said, “All of the little suggestions have added up to a large improvement in my writing.” Student F stated, “I know that I will receive honest, solid and useful feedback.”

Question #14: In what ways, if any, has the writing studio helped you remain enrolled at Keiser University? Student A explained, “I debated for some time if I were ready to pursue a PhD, due to the daunting task of a dissertation. The feature of Keiser University that helped me to make my final decision was the fact that they had a Writing Studio. If it weren't for the existence of The Writing Studio, I would not be a student.” Student B stated, “I would not have been able to get through this course without them.” Several students cited the importance of the service relating to their retention as a student.

Question #15: How do you believe your experience in graduate school might have been affected if you had not had access to the services of The Writing Studio? Student A stated, “I would still be writing average papers.” Student B wrote, “I don't think I would be nearly as successful. I don't think that my writing would have progressed the way that it has in such a short period of time. I don't think I would be as confident in the work that I submit to both my colleagues and my professor. I also feel as though it helps my professor to have more instruction time with my class since she has the Writing Studio as a knowledgeable partner to help with giving feedback to such a large amount of students.” Student C

explained, “overwhelming, may have gave [*sic*] up.”Student D wrote, “I would have lacked confidence.” Student E said, “lower grades.”

Analysis of Data

Question 1: The results include data from students who have used the service frequently and infrequently.

Question 2: The purpose of this question was to determine if students’ expectations of The Writing Studio match the mission of The Writing Studio. Based on students’ replies, it is evident that students understand the purpose of the service.

Question 3: Why do you use The Writing Studio? The responses to this question indicate that students view The Writing Studio as a service that helps them improve their writing and academic performance. It underscores the value of the service assisting students to maximize their potential.

Question 4: How would you describe your writing ability? The responses to this question show that students who view their writing ability along a wide spectrum use the service. This point is especially important to share with faculty and students to show them that the service is appropriate for students at all levels.

Question 5: How long have you been a graduate student at Keiser University? Responses to this question indicate students use the service throughout their program. It is not a service only for new students. Most students finish within two years.

Question 6: In what ways do you believe The Writing Studio affects your writing? Students’ responses indicate that they believe the service helps them to improve their writing skills.

Question 7: If The Writing Studio has helped you, in what specific areas has it helped you? Responses to this question indicate the service helps students improve the full gamut of writing skills.

Question 8: How often do you apply the feedback you receive on your work from writing consultants? The responses indicate that most students apply the feedback they receive from writing consultants. This finding validates that students are not using the service to impress their professor but rather they

have a sincere interest in improving their academic performance. It also indicates that students find the feedback useful since they apply it.

Question 9: How do you decide which feedback to apply and which feedback to disregard? Students' responses to this question show that they are not simply applying whatever feedback writing consultants provide. Several students indicated they think critically about the feedback to determine which comments they believe will best improve their performance.

Question 10: What do you believe is the most important service provided by The Writing Studio? The answers to this question provide evidence that providing writing feedback is the primary responsibility of The Writing Service above all else (i.e. providing resources such as videos, etc.).

Question 11: How does your professors' feedback on your work differ after you use The Writing Studio, if at all? Students may not be able to discern the difference in feedback, however, several students explained that their academic performance improved and their professors noted it.

Question 12: How do you believe using The Writing Studio impacts your academic performance? The results of this question provide evidence of the value of the service.

Questions 13: In what ways, if any, has The Writing Studio helped you to build confidence in your abilities as a student? Students' responses indicate that students are receiving direct benefits in increased confidence as a result of using the service. Specifically, the writing feedback, phone calls and emails, and positive tone are boosting students' morale.

Question 14: In what ways, if any, has the writing studio helped you remain enrolled at Keiser University? Students' reliance on The Writing Studio demonstrates the importance of the support service to build morale and improve academic achievement and retention.

Question 15: How do you believe your experience in graduate school might have been affected if you had not had access to the services of The Writing Studio? The answers to these questions underscore the importance of the service improving students' grades, confidence, and overall success.

Analysis of Data Grouped by Research Question

Background Questions

Responses showed that uses of the writing studio were wide-ranging with most students using it more than once during their academic careers and believing that the purpose of the writing studio was to help them improve their writing and develop skill with APA. Overall, students who use the service view their writing abilities across a very broad spectrum, use it throughout their time at the university, and see the writing studio as a service that helps them to improve their writing and academic performance.

Research Question #1: How do students believe using a writing studio affects their writing?

Overall, students believed that The Writing Studio helped to improve their writing skills across a wide range of abilities with most students applying the feedback received from writing consultants. Additionally, students responses indicated that they did not use The Writing Studio simply to satisfy professors, but because of a sincere desire to improve their academic performance through their writing. Students reported that they did not always automatically apply the feedback offered by the writing consultants, but rather, examined it critically to determine what specific comments, suggestions, and feedback they believed would best improve their performance on a given paper.

Research Question #2: How do students believe using the writing studio impacts their academic performance?

While The Writing Studio provides numerous services in addition to feedback on student writing, for example, tutorials, videos, articles, etc., most students responded that the feedback on their writing was the most important element offered to them and that they considered it the primary responsibility of the writing studio. Students indicated a general belief that the feedback of The Writing Studio consultants did serve to increase their academic performance, relating it to an overall improvement in their work as noted by their professors.

Research Question #3: How does a writing studio help to retain students?

Responses in this area indicated that the students felt a gain in confidence as a result of using the service, with specific writing feedback, phone calls, emails and the positive tone of the writing consultants helping to boost their morale and provide a stronger desire to persevere, knowing that assistance was readily available. Responses in this area underscored the value of the service in improving students' grades, confidence, morale, willingness to persist, and overall success.

Discussion and Implications

This study, while small in number of respondents, offered validation of existing beliefs about writing studios in general and pointed to evidence of the value of writing studios in the following thematic areas:

1. Writing studios are used by a broad spectrum of students.
2. Having experience with a writing studio results in repeated uses of the service.
3. Students believe that the specific feedback on their writing matters.
4. Students read and critically apply the feedback in ways that will best improve their performance on the paper or in the class.
5. Students believe that a writing studio contributes to and enhances their academic success.
6. Student confidence is boosted through contact with the writing consultants, increasing their morale and willingness to persist and persevere in their programs.

While all of these findings are of interest, perhaps the most intriguing is that students use The Writing Studio feedback differentially, in ways that they believe will best enhance their final product. This demonstrates that students are applying critical thinking to the process of developing their work, an element that is always sought and promulgated in student learning, but one which is frequently elusive.

Of equal interest is the result showing that overwhelmingly, students perceived The Writing Studio positively and found their interactions, whether through written communications, phone calls, or video conferences, gave them greater confidence in their writing and general academic abilities.

Students felt more willing to continue in their programs, knowing that they had a resource to turn to for assistance along the way. Their confidence and willingness to persist increased, both of which lead toward retention.

Levels of Return

In viewing the results through the lens of Kirkpatrick's (1998) evaluation model, expanded by Philips (2003) and showing five levels of evaluation, The Writing Studio achieves at four of the five levels. While the model was initially designed to apply to training and development, its levels can equally be applied to many other learning situations. The five levels are the following:

Level 1: Participant satisfaction. This level of evaluation examines the satisfaction of users, but does not demonstrate that they have learned what was presented or taught.

Level 2: Learning. This level of evaluation examines whether participants actually learned any of the material they were taught.

Level 3: Application. This level considers whether learners apply the material they learned in a real world situation.

Level 4: Impact. This level is concerned with the degree to which the application of the material makes a difference or improvement in the subject's environment.

Level 5: Return on Investment: This level of evaluation compares the costs of the program to the ultimate benefits of the program for the institution.

Given that students indicated that they had a positive experience with The Writing Studio, level 1 can be said to have been achieved. While level 2 was not explicitly observed in the survey results, students did state that they applied the comments of The Writing Studio consultants to their papers, indicating evidence of level 3. Level 4 is demonstrated in the responses indicating that students believed The Writing Studio enhanced their success, and, finally, level 5 is evidenced in statements showing increased confidence, morale, and most of all, willingness to persist and persevere in their

programs. While in a business sense, level 5 speaks to Return on Investment (ROI), in the academic arena, this can be equated with the concept of retention.

Potential for Improving Retention

Most academic institutions place retention high on their priority list. The results of this study pointing to potential pathways for addressing and solving this problem provide promise to these institutions. The results imply that students value personalized attention, concern, and repeated interactions between writing consultants and students in a positive format designed to offer help and increase skills. The results signify that interactions where students feel comfortable and assisted rather than judged and evaluated increased their positive feelings toward their education as well as their willingness and perceived ability to finish their programs.

Implications for Future Studies: Learning and Transfer

While the results showed that students did apply the comments of The Writing Studio consultants to their papers, it is unclear from this study whether they truly improved and learned to be better writers, or were simply responding to situational suggestions and perceiving the help to be relevant to a given paper only. Efforts to discern the degree to which students understand the comments of The Writing Studio and then use them in a broader sense to improve their writing would be useful in showing more specifically whether students are truly learning to be more effective writers. Given that many students use The Writing Studio regularly, submitting papers each week, examining whether concepts, techniques, and strategies shown to students on a given paper are then utilized on future work would provide additional support of online writing studios' effectiveness. This added step would demonstrate evidence of learning and of transfer. It is, of course, explored to a degree during follow-up phone calls made by writing consultants to students after they receive their work back from their instructors with a grade.

Future studies could be designed in which student papers were examined over a period of time, looking for specific improvements in later work as recommended by the writing consultants in earlier

work. Augmenting this research would be interviews with both students and professors regarding perceived and actual improvement.

Conclusion

This study has shown that The Writing Studio is effective in helping students to improve their work, to read and apply feedback, and to develop relationships that encourage learning opportunities and repeat visits by students. Additionally, students report increased morale, confidence, and positive feelings about their academic programs as a result of interactions with The Writing Studio. These benefits occur when students who use The Writing Studio perceive that their *writing* is being critiqued and that they, themselves, are not being judged adversely.

The Writing Studio also serves as a liaison between students and their professors, acting as a non-interested third party (such as in a legal setting) whereby no grades are attached to the comments and suggestions made by a writing consultant. The students maintain full ability to accept or reject the suggestions being made by the writing consultants; in other words, any piece that is submitted for analysis is still their own writing, and they continue to have control of their own learning experience.

Writing studios are a form of incentive or "value added" services frequently offered by colleges and universities today. They play a number of roles in helping students learn to write, to think, to understand the nature of the work expected of them, but perhaps of even greater value, they serve as a non-judgmental place where students feel and believe that they can receive unbiased help not otherwise offered by overworked professors and administrators. The evidence shows that while writing studios are positively perceived by students, there is potential to improve their value through targeted efforts designed to further engage and direct students in the processes of writing, not just on individual assignments, but as part of their entire learning program.

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Improving Online Graduate Student Engagement Using Simple Solutions

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Abstract

This investigation examined how a minor adjustment to a faculty-student phone call process can result in a significant improvement in online student engagement. This article helps academics understand how simple solutions to complex problems can significantly impact faculty and student engagement and subsequent student performance.

Improving Online Graduate Student Engagement Using Simple Solutions

It is fairly common knowledge student engagement in an online program is associated with improved student performance and retention. Dixson (2010) discovered no particular activity will positively impact student engagement; however, faculty-student communication was strongly correlated with student engagement. Hew (2016) found instructor accessibility and passion to be one of the most important factors impacting student engagement. One challenge Warden and Benshoff (2012) describe is faculty often believe they are creating interactive learning opportunities (i.e., engaging students), while at the same time student program expectations are not met. Phone conversations can help mitigate this problem by talking directly to students. Feedback is obtained directly from the student, including expectation concerns. Phone conversations can improve faculty-student engagement by promoting instructor accessibility, and passion for students' concerns and learning outcomes.

Problem Statement

To promote student engagement in an online graduate program, faculty are charged with calling students twice during an eight-week course. A challenge is faculty and students often do not talk with one another even after a significant effort is made by faculty, including multiple phone calls, voice messages, and email. The time used attempting to call students can be better spent on more productive activities. At times faculty find it uncomfortable calling students at home for seemingly no other reason

than to simply introduce themselves. Some students can even feel uncomfortable having their professor call them unexpectedly. Although talking to a student can lead to positive outcomes, the active disengagement made by students who do not call back or ignore messages can set a negative tone for the rest of the course. Students are also not required to call a professor, and this activity is not part of their grade. There appears to be no extrinsic motivation and minimal intrinsic motivation to talk to the professor. A new and more effective approach would seem justified. To address this challenge, a new process was tested using a quasi-experimental approach.

Methodology

To determine the past rate of faculty/student phone contact, data was collected from four classes taught by the same professor, in the same program, and during four different terms. The contact ratio was 30%, and ranged from 8% to 62%. This ratio can significantly fluctuate due to individual faculty efforts and communication strategies. More persistent methods can result in a greater number of contacts, although at a high-cost in instructor time spent as previously described.

To address the inconsistent and often limited phone contact between faculty and students, an alternate phone contact approach was applied on two separate occasions (Week 1 and Week 4 of an eight-week course), and in two different classes. Class A was a doctoral course (N = 8) and Class B was a master's course (N = 14). The new strategy included adding a phone call module to the course content during Week 1 and Week 4. This module instructed students to contact the professor at some point during the week. The message also included a phone number and best times to call. The gradebook contained a column designed to motivate the student to call, although no grade was assigned to the activity. The student would, however, see comments made by the professor such as "student did not call" or "great speaking to you today, I look forward to talking to you again soon". An announcement and email were posted to the entire class reminding them of their weekly activates, including the phone call.

Results and Discussion

Descriptive data revealed a significant increase in the faculty-student contact ratio. In Week 1, most students called me on their own, while some returned the professors phone message or answered when the professor called them. During Week 1, the contact ratio was 75% for Class A and 93% for Class B. During Week 4, the professor purposely did not call any students in order to determine what the outcome would be without any additional motivation by the professor. The results were similar as Week 1 with a contact ratio of 75% for Class A and 86% for Class B. It is worth noting that three of the same students from Week 1 did not contact the professor in Week 4, along with one additional student. Two of the three students were employed by the university, perhaps influencing their decision not to call the professor due to regular contact with other university faculty and staff. When factoring out these two individuals, the overall contact ratio was 90-95%. An impressive increase when compared to the 30% reported using the traditional strategy.

Strengths and Limitations

A strength of this study was the reliability of the method and measures. I was aware of my own bias, as well as how I might influence the study. To control for this, I made no effort during Week 4 to promote student calls. This is actually less of an effort than previously applied in Week 1, and less of an effort than normally would be applied upon plan implementation by other faculty. For example, other faculty members may still want to call students who do not respond. Another strength of the study was I was aware of my previous activities and efforts that directly resulted in the initial contact ratio of 30%. This helped me determine the existence of any significant extraneous variables that may have impacted the study. A limitation of the methodology was a lack of control over all variables. It is possible some students were more likely to contact me because they had previously had me as an instructor in other classes.

Implications

Although this study has limitations, the implications have a high degree of practical value due to (a) a reduction in resources spent compared to the previous strategy, (b) minimal costs associated with

implementation, and (c) the potential for significant benefits. The most significant reduction in resources includes less time spent by faculty making attempts to contact students, and less time spent by faculty and administration tracking phone call attempts and conversations. There is a minimal cost associated with implementing the new strategy because all resources needed are already present. The only direct costs associated with the new strategy include the one-time effort of adding phone-call modules to each course, adjusting the gradebook, and training faculty and administration. With minimal effort, this simple solution can potentially have a significant impact on faculty-student communication and student engagement, resulting in improvements to student academic performance and overall retention.

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Alternative Leadership Styles Within Higher Education Organizational Cultures: Is Change Warranted in an Era of Technological Innovation?

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Abstract

The purpose of this paper was to select three types of leadership styles that would incorporate approaches toward effectively managing a university environment. The leadership styles that were selected included global leadership, relational leadership, and change leadership. Whereas each style has unique and workable aspects in their concepts they employ the leader to understand their purpose within the dynamics of an organization.

Alternative Leadership Styles Within Higher Education Organizational Cultures: Is Change Warranted in an Era of Technological Innovation?

The examination of the current leadership is warranted in higher education in the United States. Deloria (1991) reported that educational context in this part of the world is based on an indoctrination form of teaching in that its premise is to import a specific body of knowledge with a particular view of how the world exists. The question becomes whether this type of teaching methodology is advisable in the areas of innovative technology. Whereas this type of context (indoctrination teaching) predominates in the educational setting, perhaps it is part of the educational leadership methods used in the United States as well. The premise is that technology is becoming the connection piece globally (McFarlane, 2011). One might ask whether we should continue using doctrinal forms of teaching or leadership methods in today's higher learning institutions. The author further states that in the past there were limitations in the areas of teaching and learning but technology has changed that because of its expansive utilization through distance education (McFarlane, 2011). Accordingly, the traditional/current leadership styles should adjust as well to the changes that technology has induced in the world of academia.

To illustrate, Gardner (2013) noted that leadership methods need to be evaluated as leaders and their styles vary. According to Brown, Whitaker, and Brungardt (2012), leadership education should

evolve towards globalization for the future as this method will prepare students. The traditional style of leadership (i.e., autocratic-decisions and power are centralized) (Green, 2013) no longer serves a purpose in the world of technology as other types may be more adaptable in the areas of technology. The focus of this paper is to address three leadership methods, global leadership, relational leadership, and change leadership that would seem more appropriate in the modern educational environment.

Global Leadership

The global mindset in leadership requires an individual to think in terms of the people who exist in the world, their beliefs, world perspectives, socioeconomic status, ethnicities, and experiences (Brown et al., 2012). In addition the authors stated this leadership style asks leaders to become aware of their own cultural values, beliefs, and perceptions (Brown et al., 2012). The primary purpose of this leadership style requires leaders to understand people from a variety of perspectives and to be cognizant of their own beliefs surrounding their worldviews. Another aspect to global leadership requires a leader to think from a global perspective, become culturally adaptable and flexible, and understand elevated levels of ambiguity (Javidan, Doffman, Sully de Luque, & Hoose, 2006). The global leadership theory focuses on others cultures and asks leaders to be respectful, patient, and flexible in their mental analogies of leadership styles that are appropriate in a diverse world.

The aim of global leadership asks the leader to think from a collective perspective as opposed to an individual perspective. When people are trying to relate to others, commitment to service requires action from a collective point of view as one becomes engaged in the interest of others (Benham & Murakami, 2013). The authors further state that learning should incorporate exploration of knowledge locally, nationally, and globally (Benham & Murakami, 2013). Likewise leadership methods in higher education would suggest these same techniques be applied as well. The primary themes of global leadership involve collective thinking, global interactions, and asking the leaders to become aware of self yet think of others' values, beliefs, and perceptions in their decision making analogies.

Disadvantages in Global Leadership

In 2013, Gardner argued that many equate leadership with power and that some level of influence does exist in the area of persuasion. The question becomes as to whether some leaders will view global leadership as lacking in its power of persuasion and influence. In addition are these elements needed to advance leadership in technology in institutions of higher education? Global leadership requires leaders to think beyond their inner circle as that is where growth in the area of knowledge is crucial to advancing teaching and learning abilities. The question becomes do leaders desire advancing the areas of knowledge? As Pisano and Shih (2009) noted, the leadership in the United States purports a subconscious superiority demeanor in its constructs and has little awareness as to how this attitude is unappealing to others outside their borders. In society today, is it feasible for leaders to continue to adapt this trend of leadership as the future continues to evolve? Whereas some leaders may view global leadership as too open-minded and overly diverse in its constructs, what method of leadership should be employed in higher education that will advance technology leadership to even greater heights?

Relational Leadership

Block (2010) asserted that the essential elements in relational leadership consist of the following:

- Relationships: stories being told, stories repeated, and stories redefined
- Understanding the relational competence of narratives of others stories
- Relational leaders are active listeners through the giving and sharing of narratives by becoming empathic and placing issues in context
- Understands conflicts and tensions and relates to how people feel disconnected or disempowered
- Is accepting of individual differences brought to a relationship

- Resists imposing one's will upon others
- Challenges the traditional Western leadership ideals of individuation and separation and
- Purports that human beings learn and grow by comprehending cultural dynamics and value and respect progress that is garnered through connections by relationships

The encompassing of these ideals in relational leadership informs the reader of dynamics of a style of interpretation that stresses cultural awareness and interactions with people in order to form connections that will promote understanding, growth, and respect of others ideas. The constructs of collaboration and participation should also be a part of this leadership dynamic (Jones, Lefoe, Harvey & Ryland, 2012). Although Jones et al. (2012) pointed out these descriptions as being connected to distributed leadership; they too have relational constructs as well. The leadership method thus far is absent of authoritative ideals and imbues a sense of collaboration and cohesiveness between self and others. Benham and Murakami (2013) suggested dismissing authoritative methods and replace them with techniques that incorporate learning and teaching within and beyond the academic boundaries. A leader should employ techniques that are visual and symbolic in communicating what learning incorporates and create language that describes one's experiences and self-motivation (Benham & Murakami, 2013) as that will form relationships with others. Accordingly, relational leadership involves sharing, reflecting, and visioning with others in order to garner an in-depth understanding of the roles of people so that the leader can obtain insight regarding negative results from decisions being implemented Block (2010). The theory about leadership methods is that interactions that are of a negative nature regarding employment concerns should be performed from a personal level and not through official interactions (Block, 2010). The leader who practices relational leadership does it from a place of interacting with people on both a personal and professional level yet keeps a certain amount of decorum within those dynamics. The goal is to invoke trust and connections that will add value to the group dynamics (Block, 2010). Additionally the leader must also be aware of the dialogue being

used and incorporate language that supports others professional areas of development. The premise is to incorporate service towards others (Sergiovanni, 2013) and to place oneself in a position of understanding, trust, respect for others, and supporting the efforts people are making.

Disadvantages of Relational Leadership

The relational leadership method promotes establishing friendships with others in order to invoke trusting interactions (Block, 2010). Although this concept might be appealing to some leaders, others leaders may view this as detrimental in a work environment. Some leaders view service to others as not being a responsibility in leadership methods their leadership style is based on a hierarchy. The question becomes should leaders be respectful of some people and not all people. The relational leadership method does stress relations with others, yet it does not appear to view it from a global perspective. The establishing of relationships in learning environments requires interactions of leaders globally as well so that they can learn and teach one another about any misunderstandings that could occur (i.e., concerning cultures, traditions, values, beliefs). Finally, some leaders may believe that not imposing their will upon others will lead to chaos in the areas of task completion. Rather, not imposing ones will upon others could lead to productivity and satisfaction with tasks employees have been assigned to perform.

Change Leadership

The goal of change leadership is to invoke methods that employ internal and external techniques that progress toward further growth and development at an institution of higher learning (Grogan, 2013). Cloud (2010) asserted change leadership is one based on morals and ethics that will serve higher learning institutions for a long period of time. The author states that this type of leadership propels individuals to think outside the box and motivates others to do so as well (Cloud, 2010). Change leadership promotes growth and development on the basis of a leader's moral and ethical decision making and asks one to think outside the box in order to create innovations in the learning environment.

The utilization of change leadership will bring about a different dynamic in the organizational culture of an institution. Grogan (2013) pointed out 6 applications of theory for change: (a) admiring employees, (b) connecting peers with purpose, (c) capacity building, (d) learning is the work, (e) transparency rules, and (f) systems invoke learning. The theory asks leaders to use these principles to guide change in their effort of promoting change leadership. Goleman (2010) stated that change leaders possess an enormous amount of emotional intelligence, motivation, and self-discipline by being caring and empathic towards human beings. The leader who has these attributes is in tune with people and their feelings and desires to be respectful of others as well as empower them to perform their duties with conviction (Cloud, 2010). The term *gentleness* comes to mind when evaluating change leadership as such leaders are quiet in their mannerisms while being open to allowing individuals to think outside the box and guiding them towards excellence for themselves and the learning institution.

Disadvantages of Change Leadership

Despite the positive attributes that change leadership can invoke, the question becomes whether this type of leadership is beneficial at universities and colleges. Whereas most leaders would view this type of leadership as soft or gentle in one context, some would be of the opinion that allowing people to think outside the box may be detrimental to the organizational culture already in place. The question becomes as to whether leaders can afford to be stoic in their thinking when it comes to leadership in the area of technology. The theory of change leadership mentions nothing about group dynamics. Kezar (2009) claimed that many leaders are afraid of working within a large group dynamic whereas teams would be beneficial in a higher educational setting.

Selection of a Leadership Style

The selection of a leadership style that would be beneficial to in today's university atmosphere in the area of technology requires methods that include the following:

- global in their perspectives (Kezar, 2009),
- beneficial to the performance of leaders and other members with the educational setting (Kezar, 2009):
- student and learning centered
- concerned with proper ethical processes
- promoting of strategic planning and implementation (Kezar, 2009)
- beneficial to conflict resolution
- enhancing of the learning and student centered environment

All three methods (global, relational, and change leadership) comprise techniques that are advantageous to the learning environment at a college or university. Although the task proposed is to select a method of leadership that one believes would be effective in the promoting technological innovations within a higher educational institution, the question is whether just one method of leadership should suffice as education progresses toward the future. The 21st century challenges the leaders of today to re-think their current leadership styles and processes (Cloud, 2010; English, 2008; Green, 2013; Grogan, 2013; Kezar, 2009). The educational sector is being challenged in the area of leadership techniques as learning has taken a different role due to the implementation of technology. The current technological advances in education asks leaders to evaluate whether their leadership techniques will suffice and meet the demands of future technological constructs that students will need to meet the demands within the global arena. The question becomes as to whether it is logical to incorporate all three methods into ones leadership styles. The most likely response would be affirmative as all three employ techniques that are adaptable to the changes that continue to occur in university settings.

The one constant that prevails throughout all three methods is the focus being placed on human interactions. All three leadership methods stress the value of human involvement and respect for others' values, beliefs, and cultures. In addition leaders' being aware of any biases, conflicts, and unfair ethical practices is a high priority within each leadership style. Another important aspect to adopting all three of these leadership styles is how one may omit a crucial factor or concern yet another responds to that matter in kind. To illustrate, a method for conflict resolution was not mentioned as a concern in global leadership per se yet was included as a relational leadership issue. Theory would dictate that all three leadership methods are inter-relational in their methodologies as each style contains similarities in their techniques. The most difficult process is to analyze the disadvantages of each leadership style. The disadvantages involve focusing on the factors that were not addressed in a previous leadership method.

Conclusion

The purpose of this paper was to select three types of leadership styles that would incorporate approaches toward effectively managing a university environment. In addition these leadership skills are to assist in the advancement of technologies that are currently being used to educate students is colleges and universities. The leadership styles that were selected included global leadership, relational leadership, and change leadership. Whereas each style has unique and workable aspects in their concepts they employ the leader to understand their purpose within the dynamics within an organization. The three styles ask the leader to interact with other leaders and inform them of their importance to the organization (i.e., university/college). Additionally the leaders become attentive to human agency regarding issues in the areas of professional responsibility by assisting them in their growth and progress. In addition the leaders are asked to be sensitive to others' cultures, values, and beliefs. The art of active listening skills will be beneficial as leaders will hear concerns and invoke dialogue to guide people towards effective ways of progression and success.

The selection of these three leadership methods was purposeful as they all contain criteria that would be of benefit to a higher learning institution. The leadership styles suggested inspire a concern

for global initiatives, and they focus on personal interactions with others. In addition the goals employ those techniques that will assist the university in implementing innovative technological teaching and learning techniques that will bring success and growth in student learning. The implementation of these leadership skills by leaders in higher education will attract individuals globally pursuing a degree in higher education as technology allows people around the world access to online education. The leadership methods would require inclusive measures that demonstrate the school's dedication towards openness to new ideas and new innovations in the areas of teaching and learning from a global perspective.

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The Need for Language Skills in Mathematics Learning

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Introduction

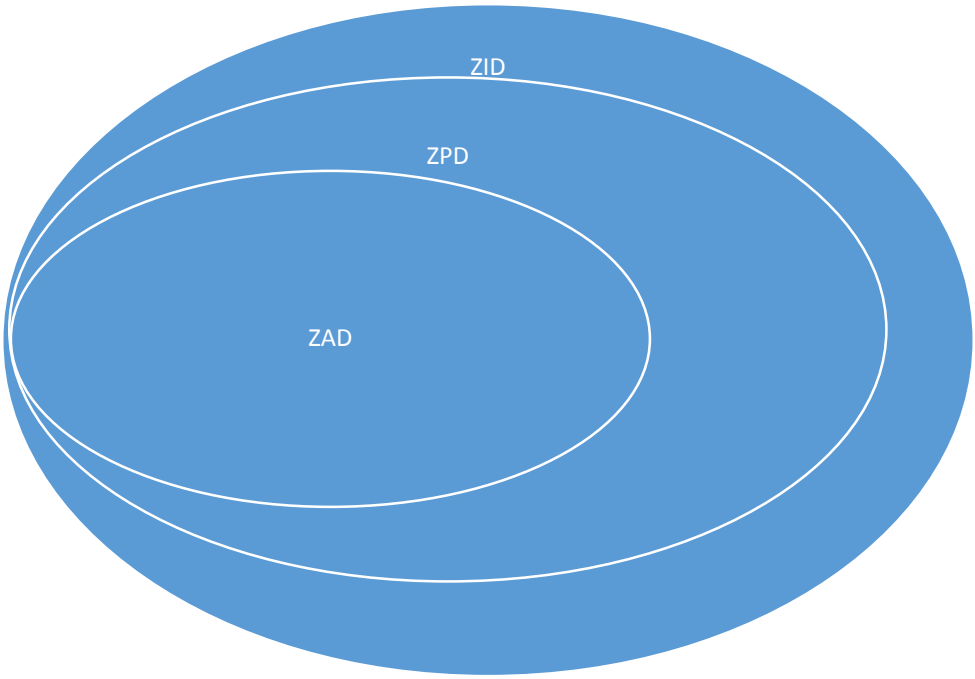
Language skills development is an objective too often absent from the curriculum of developmental mathematics. These language skills are critical to fully understanding mathematics. In fact, often what instructors perceive as a lack of mathematical understanding is either

a) A student's inability to navigate the linguistic ambiguities built into but hidden in the curriculum or

b) A student's lack of understanding of the, often implicit, grammar of mathematics

Understanding these strong connections between mathematics, language, and the curriculum of developmental mathematics can be a boon for practitioners, especially if they wish to implement constructivist practices. Kemp (2012) argued that, in a constructivist classroom, students should learn to connect separate bodies of knowledge and develop tools for metacognitive understanding. Developmental mathematics, due to its embedded language component, offers students opportunities to make these connections and developments. Unfortunately, when instructors ignore the many rich language–like attributes of mathematics, not only is the mathematical development of students hindered, but numerous opportunities to help students learn in a truly constructivist manner are missed.

Vygotsky's idea of the zone of proximal development has implications for this idea of using language to assist students in learning mathematics. According to Vygotsky, a student's zone of proximal development, also known as ZPD, describes what he or she can learn with assistance. Zaretskii (2010) used three ellipses, all of which share a common point, to clarify this idea of a ZPD.



The area of the innermost ellipse captures what a student can already do without the aid of instruction, also known as the zone of actual development or ZAD. The area between the circumference of the middle ellipse and the circumference of the inner ellipse captures a student's ZPD. The area outside the second ellipse is a zone of "insurmountable difficulty" (p. 80). Zaretskii (2010) noted that the effectiveness of the assistance (or *scaffolding*) may depend not only on the instruction but also on the manner of the instruction. In other words, as a student learns, his or her ZAD expands (since once material is learned, it "moves" from the student's ZPD to his or her ZAD) and accordingly, pushes and expands the ZPD. However, the amount and rate of expansion is dependent on the type of instruction, in other words a combination of the instructor and the scaffolding being used. Just as not all instructors are equal, neither is all scaffolding. Referencing the embedded language aspects of developmental mathematics makes for superior scaffolding.

Arguably, the ability to make this connection between mathematics and language is not outside the ZPD of most adult undergraduates, since college students universally use some language. In fact, given the strong possibility that the radius of these students' ZPD in developmental mathematics is inversely related to the extent of their math anxiety, reframing a mathematical learning

objective into a language learning objective should increase the students' ZPD. Moreover, not only should this reframing widen the instructor's ability to scaffold the lesson, but also increase his or her choices for scaffolding.

Currently, 59% of students entering community college require some form of mathematics remediation (Columbia University Teacher's College, n.d.) and 80% of these students fail to complete this remediation. Moreover, math anxiety, to some degree, appears to be highly prevalent in undergraduates (Klinger, 2011). If a diagnostic test revealed that innumeracy may actually be a basic language issue, a better understanding of developmental mathematics students' lack of success and more effective recommendations for improvement would be the result.

The Issue Is Language Not Math

Precision and Translation

One of the first lessons in fractional concepts for students in the early grades is the idea of *part of the whole* (CPALMS, 2015). Unfortunately, Tobias (2013) suggested that prospective elementary school teachers may have difficulties with teaching and even understanding fractional concepts due to their difficulty with the language used to convey this fractional concept. Specifically, a precise understanding of the referent of the word *whole*, or indeed that whole even has a referent, was often lacking. For instance, Tobias (2013) noted that when a single uneaten pizza pie was under discussion, it was understood that slices of that pie were fractions of that whole pie. However, when the pie was partially eaten, it was understood less completely that the whole refers to that uneaten fraction of the original pie as opposed to referring to the original pie. In an analysis of this issue, Tobias (2013) used a methodology in which student responses were placed in potentially overlapping evidentiary categories. However, the resulting complexity obscured what arguably was just a basic issue of grammar: some words, in this case, whole, can function as either an adjective or a noun.

A better way to assist students to arrive at this understanding of fractional concepts might be to use a simple story as scaffolding: On Monday, Pedro brought home a pizza that had eight slices. Pedro ate 3. Thus Pedro ate $\frac{3}{8}$ of the pizza pie. Pedro put his leftover in the refrigerator. The next day Pedro had 2 slices from the leftover pizza pie. Thus Pedro had $\frac{2}{8-3=5}$ or $\frac{2}{5}$ of the *leftover* pie. With this story as a backdrop, discussions about the whole take on new clarity because the ambiguity of whole is removed. The instructor can use whole as a noun, by referring to the Monday-whole or the Tuesday-whole. Whole can also be used as an adjective: The instructor can observe (or elicit) that on Monday, whole referred to an entire pie, whereas on Tuesday, whole referred to the leftover pie. Clarifying the language coupled with using a story not only should provide the shortest route through the student's ZPD, but cover the maximum area.

Moreover, *whole* is laden with the distinction between whole and natural numbers, a mathematical concept unrelated to fractions. Natural numbers are the numbers with which we count: 1, 2, 3, etc. On the other hand, whole numbers start at zero: 0, 1, 2, 3, etc. Students who have learned this distinction are bound to be confused when the same word is used with an entirely different usage. Accordingly, first describing the whole, without actually using the problematic word until students understand the ideas being presented, not only eliminates a needless source of ambiguity but also creates more effective scaffolding.

This lack of appreciation of the linkage between a proper understanding of basic mathematical concepts and the precise language required to both communicate and understand it has not gone entirely unnoticed in the literature. In an analysis of a study of the work of a gifted child in solving a word problem having to do with fractions, Klinger (2011) observed that the authors misdiagnosed the student's error as using the wrong algorithm, when in fact the error was a translation error: the student did not know that *of* translates to *multiply* and not *divide*. The student was asked to determine what was left after half of a third of a candy bar was removed. While removing part of a candy bar appear to be

dividing it, that is unfortunately the response of a student in the ZAD who has not received any assistance. The most efficient scaffolding here is vocabulary and grammar instruction. Whenever a student reads the word "of" between two numbers, where the first number is a fraction, he or she should be instructed that of means multiply.

In a study of how kindergartners express their understanding of mathematics, Johns (2015) observed that when students expressed their understanding of mathematics concepts by writing, their writing was restricted to only numbers and pictures. However, when they communicated it orally to their instructors or peers, the communication was so inadequate that it was difficult for the researcher observing the students to fully understand them. In fact, given the foregoing difficulty, it may not have been appropriate to conclude that the students were expressing understanding in the first place. In other words, if a student lacks the ability to correctly express math answers in a natural language, then that may be a signal of incomplete understanding of either the math or the language or both. Further study is needed to clarify this distinction.

An appreciation of the successful effects of language precision on mathematics learning was observed by Gladwell (2008) who argued that one reason Asians are stereotypically perceived as better in math than non-Asians may be due to the built in "transparency" (p. 344) in their language. He noted, for example, that in Asian languages such as Chinese, Japanese, and Korean, twelve is ten-two and twenty four is two-tens-four. Essentially, arithmetic is built into the language. Moreover, this transparency is included in the vocabulary used to describe fractions: three fifths in Chinese is "out of five parts, take three" (p. 345). While unfortunately the part of the phrase representing the denominator is at the top of the phrase, the more than acceptable trade-off is that the "whole" is defined in the phrase itself.

Evolving Meanings

Nacarato and Grando (2014) observed that word meanings may not be immediately understood by students who are new to a subject. In fact, they noted that until students fully learn the meaning of a word, their history and culture impacts their understanding of that new word, potentially in ways that deviate from the correct meaning. This means that for an extended period of time, as students learn each new concept, they will have an incorrect understanding of key vocabulary. Importantly, since individual students must be differentially impacted by this phenomenon of variable understanding of a fixed idea, instructors will be conveying a concept that is understood differently, perhaps to a significant degree, by different members of the class.

An example of this variable understanding that I have observed repeatedly in developmental math students is the difficulty that they have with the notion of *reducing* or *cancelling* in fractions. Some students view these two words as synonyms, but their meanings are actually different. The procedure of cancelling involves dividing the numerator and denominator by a common integer factor. As a result of cancelling, both the numerator and denominator will be reduced in value. For example, in the fraction $\frac{2}{4}$, 2 is a common factor of 2 and 4. A student should divide the numerator and the denominator of the fraction by 2 and arrive at $\frac{1}{2}$. However, possibly due to the fact that cancelling in addition results in zero, or possibly due to the close word association of "cancel" with "eliminate", many students arrive at 2 for their answer. In other words, it appears that if all the factors in the numerator cancel, some students believe that the numerator itself is eliminated. These students appear to be metonymically trapped in the ZPD, or even outside the zone entirely, due in part to the imprecision in the language used to convey the idea. An excellent and constructivist solution to this issue would be to have the students read, prior to the lesson on reducing fractions, *Here Lies Miss Groby*, by James Thurber. The students could analyze the idea of *the container for the thing contained* and how it relates to the numerator of a fraction.

Another example of this evolving understanding of meaning in developmental math students that I have observed numerous times has to do with their grasp of the sequencing required in performing arithmetic. This idea of sequencing is generally taught as the as the *order of operations*. For example, the order of operations hierarchy demands that multiplication and division come before addition and subtraction. Thus 3+4x5 must be evaluated as 3+20 or 23. The student who evaluates this expression the way he or she reads, in other words left to right, incorrectly arrives at 35.

Unfortunately, the order of operations has a built in vocabulary confusion. The order of operations requires that any expression that is enclosed within a grouping symbol must be reduced to a single number before any operation, even those that are higher in the precedence hierarchy, is initiated. In other words, students are introduced to an operations hierarchy in which the top row consists of a class of math symbols, such as parenthesis and brackets, that are not operators. This vocabulary confusion is amplified when it is coupled with the fact that the most common grouping symbol in the United States, the parenthesis, can also refer to multiplication. This can lead to some students incorrectly understanding that multiplication, when referred to by parentheses, should move to the top of the hierarchy. Although most instructors will tend to view this as a mathematical procedural mistake, arguably it is a grammar mistake. These students are not recognizing the heteronymous nature of parentheses. Importantly, by describing the situation as one of grammar and not mathematics, instructors will have a larger range of scaffolding opportunities. Moreover, math anxiety in the students should be mitigated as their confidence grows in proportion to their new mastery of vocabulary – as opposed to mathematical concepts.

A final and rather egregious example of evolving meanings is one that is actually built into most intermediate algebra curricula. Students are first taught that for a class of equations, many of which look innocuous, such as $x^2 + 2 = 0$, there are no real solutions. Unfortunately, the qualifier *real* has either little or variable meaning to students unaware of the existence of *unreal* solutions, or that such

things could even exist. Arguably, to these students, the expression real solutions is at best redundant, and at worst a significant contributor to their math anxiety. Yet, a number of lessons later, the students are then taught that in fact, there are solutions to equations such as $x^2 + 2 = 0$. However, these solutions are called, partially due to history, but arguably because their reality was denied a few short weeks prior, *imaginary*. Adding injury to insult to those afflicted with math anxiety, these imaginary solutions are then further classified as *complex*.

The students now have to reformulate a number of lessons that they thought they had learned. They had learned that there was a class of equations that had no solutions. Now this same class of equations has solutions. They had learned that there was one category of solutions. Now there are two categories: real and imaginary/complex. They had learned, from experience, that real things exist, and that unreal things do not exist. Now, they have been instructed that unreal things can, and apparently do, exist.

Unfortunately, this issue is really one of improperly hewing to a representative and metaphorical vocabulary. Vocabulary is often a historical record. For example, *Quisling*, which means traitor, *records* the traitorous actions of Norwegian Prime Minister Abraham Quisling during World War II. Similarly, the vocabulary of numbers that are classified as imaginary or *irrational*, may record resistance to their existence. Ironically, the adoption of this vocabulary only serves to memorialize the old-guard mathematicians who lacked either vision or superior understanding. In fact, there is nothing imaginary about these imaginary solutions. If the solutions truly weren't real, then there would be no electricity to power our homes – since these so called imaginary numbers, inter alia, describe the impedance of a wire. Arguably, this hyperbolic and fantasy laden language coupled with developmental students' lack of mathematical education merely serves to confuse and increase anxiety in these students. Not only is it poor scaffolding, but it can easily damage previous and hard-to-build scaffolding.

In fact, these issues of differential understanding between instructor and class may actually indicate a more serious problem. Ernest (1999) observed that mathematics may be understood as a language. This language is a superset of a natural language and "specialized mathematical symbolism and meanings" (p. 70). Although he noted that knowledge of the language's use was "tacit" (p.70), in fact, that math is a language at all may not be accepted by most students. As noted, the fact that some students do not grasp that parentheses can refer to either a symbol of grouping or multiplication, and that there is a large distinction between those two meanings, arguably stems from the fact that they do not view math as a language. In other words, they do not expect math symbols to have a grammar. Interestingly, Sfard (2013), writing about mathematical discourse, noted that a weakness of linguistics was its linkage of meaning to grammatical forms. This confusion of meaning and grammar appears to be exactly the difficulty that students have when the parenthesis symbol is used for two different meanings.

This shift towards understanding and learning mathematics as a language was recommended by Klinger (2011). In fact, he argued that new math concepts should be framed as new language concepts and discussed using natural language before "translating" them into mathematical symbolism. Given that everyone grows up using language, but less so mathematics, the result should be less overall anxiety.

Implicitness

A confirmation of this notion of mathematics actually being a language may be achieved through an investigation of implicitness in mathematics. Natural languages abound with implicitness. In the Hebrew language, when two nouns are juxtaposed, the "of" is not said or written, but, by the Hebrew grammar rule of "smechut" (which actually means juxtaposed in Hebrew), implicitly understood. For example in Hebrew, "Melach" means king, "Shalom" means peace, and "shel" means of. However, by this rule of "smechut", "melach shalom" means "king of peace". Not only is the "shel" not used, in fact it would be grammatically wrong to include it. In English, the following story

is grammatical and completely understood: “Bob was starving. Bob was given a burger. Bob ate.” Due to the fact that English sentences do not require an object, the last sentence of the story is grammatically correct. Moreover, due to implicitness, the sentence is also unambiguous. There is no possible confusion regarding what Bob ate.

Although native speakers generally have no problem parsing sentences with implicitness, the same concept in mathematics – the lack of explicit inclusion of some concepts that can be assumed - appears to confuse many students. The fact that the instruction to multiply is often implied, rather than stated explicitly appears to be poorly understood by many students. For example, the expression 3x means 3 multiplied by x. This is usually taught with a new vocabulary word: The *coefficient* of x is three. Arguably, the expression might be better understood if the idea of multiplication as an implicit operation was stressed. In fact, the expression 3x is really an example of *smechut*. It would be wrong to write 3(x). This really is an example where instructors have opportunities to use not only different, but also more understandable and familiar, scaffolding. Grammar may be boring to some, but the lack of excitement is arguably superior to the anxiety that seems to accompany mathematics.

I have observed an interesting contrast in how students understand implicitness in mathematics. Most students appear to understand the implicit *1* involved in a *unit rate*. A unit rate is a rate with a value of one in the denominator, such as 30 miles per hour. The *1* between the *per* and the *hour* is generally understood and not explicitly noted. However, I continue to observe an ongoing confusion regarding the meaning of the expression “x”, even though a very similar phenomenon is at work. There are actually three implicit ones involved in the expression, and each of them is connected to a separate learning objective. Although it is not expressed this way, the meaning of x is $\frac{1x^1}{1}$. The fact that these ones are not explicitly expressed appears to cause students endless confusion. It may be that there is some minimum amount of native language required in a math expression to remove blockage caused by math anxiety. Further study on this issue is warranted.

Conclusion

Students, especially adult students, find developmental mathematics more difficult than other fundamental courses. While part of the difficulty may be their math anxiety, as much or more so is due to the ambiguous and fantasy laden language built into the curriculum – which in fact may be a contributing factor to the student's anxiety.

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