Best Practices in Educational Technology Implementation in Two-Year Community College Writing Centers

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Abstract

Using a qualitative approach based on grounded theory, this study explored the best practices of educational technology implementation in 2-year community college writing centers utilizing interviews with writing center administrators. Sociocultural development theory, as well as social learning theory, were applied to frame the results. Each participant's responses were coded according to grounded theory using open, axial, and selective coding. Three major themes were discovered which in turn led to the uncovering of five best practices for educational technology implementation in the participants' writing centers that may be broadly applied to 2-year community college writing centers in general.

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Introduction

Student success is determined in higher education using various metrics in various ways. From graduation rates to employment rates and average annual salary measures for recent grads, each school looks at these metrics differently and makes different internal choices in order to reach their goals. Juszkiewicz (2019), Lerner (2019), and Whaley (2016) all make arguments that at the 2-year community college level, two of the most important metrics are graduation rate and retention. North (1984, 1995) realized almost three decades ago the importance that the writing center plays on exactly these two specific areas and their relationship to writing centers has been underscored in a variety of studies, including Aunkst (2019) and Bielinska-Kwapisz (2015).

Now in the 3rd decade of the 21st century, we are understanding the effects of educational technology on student learning, from K-12 to higher education (Icard, 2014). As more and more technology is being introduced into the classroom, it is also being introduced into other academic support areas often grouped under the label of Learning Assistance Centers, of which one part is the writing center. Lerner (2019) notes that there is little research currently being done on this important aspect of college learning. Lerner (2019) goes on to state that many studies focus only on student outcomes, where

grades are ultimately seen as the last word in student achievement. There is, however, the confidence that is built up in a student which, unfortunately, is much more difficult to gauge. What is even more problematic to express is what the writing center administrator sees in each student, as these administrators are often the ones who watch the growth of a student not just over the course of a single semester, but many times over several years, and it is this subjective view that can lead to the positive implementation of new methods and practices, particularly involving technology, in the writing center.

The Problem

One tool that the writing center often has at its disposal is educational technology in some form. Yet the use of "best practices," while common and often defined in education, even in learning assistance centers from K-12 to 2- and 4-year schools (Zhbanova & Fincher, 2019), the question of best practices in terms of educational technology implementation is rarely studied. Even less understood is the specifics of the 2-year community college writing center, of which there are currently no established best practices for the implementation of educational technology. This study seeks to remedy that by providing a baseline of what those best practices currently are as well as what they should be, by speaking directly to the administrators of writing centers and letting them discuss educational technology implementation in 2-year

community college writing centers themselves from their own points of view and their own experiences.

Relevant Literature

Murphy and Law's (1995, p. 65) statement that "the single most important and most quoted essay in writing center scholarship" is North's (1984) seminal publication "The Idea of a Writing Center" is still as true in 2021 as it was when they first wrote it. Much of the last 35 years' worth of research on writing centers has either hinged on North's (1984) essay or railed against it. North (1984) claims that

in a writing center the object is to make sure that writers, and not necessarily their texts, are what get changed by instruction. In axiom form it goes like this: Our job is to produce better writers, not better writing (p. 438)

This claim is still a mantra of most, if not all, of those active in the field. One aspect that North did not touch on was technology in writing centers, as at the time of his essay the only real technology in use in college writing centers were pen, paper, and the occasional typewriter. Technology in education, however, has become a game changer, especially during the last two decades. As Secretary of Education Arne Duncan (2012) said in a speech almost a decade ago:

It's no exaggeration to say that technology is the new platform for learning. Technology isn't an option that schools may or may not choose for their kids. Technological competency is a

requirement for entry into the global economy—and the faster we embrace it—the more we maintain and secure our economic leadership in the 21st century.

As for the effectiveness of the writing center in general, when studying student success, Vance (2016) found that "No significant difference in retention based on gender, ethnicity, or personality types was revealed—only their use of tutoring showed a difference in the data" (p.41). Vance (2016) also states that "students who went to tutoring were significantly more likely to be retained and have a higher grade-point-average" (p.41) than students who did not attend tutoring. While GPA and retention rates are not alone a singular sign of success, for community colleges, both of those metrics figure prominently into what those institutions consider "success," with a focus specifically on retention rates (Whaley, 2016; Juszkiewicz, 2019).

Davis (2016), Zhbanova and Fincher (2019), as well as Pannoni (2015) all note in their studies that many community college students fall into the category of needing some type of remediation, including developmental classes. They also found that it is this group of students who most frequently utilize learning assistance centers, including writing centers. These findings encourage a deeper look into the practices of these centers to elucidate how they are able to achieve this "success" (Whaley, 2016; Juszkiewicz, 2019).

Herold (2016) writes that the many types of technology currently available to students is not only greater than at any time before, but it allows students to show what they have learned in ways that go beyond the writing of traditional essays. Herold (2016) names a great deal of free software and applications that can assist students in creating new and original ways of producing content to showcase what they have learned, where students who are already familiar with smartphones can turn that smartphone into an almost professional-level video laboratory capable of producing professional-quality presentations, videos, and multimedia performances.

Wilson (2017) writes that technology in all aspects of students' home, work, social, and school lives has now reached the point where it is omnipresent. Wilson (2017) goes on to write that implementing technology in the writing center is important, yet there has been neither a sustained effort to quantify what the best practices in this area are nor what they should be.

Alber (2015) along with Hargreaves and Fullan (2012) use a working definition of "best practices in education" as existing practices that already possess a high level of widely-agreed effectiveness. The issue in the realm of educational technology implementation in 2-year community college writing centers is not that there are no existing practices that are effective, but rather, because of the isolation writing center administrators and staff often

find themselves in from other writing center administrators and staff, due to either geography or the inability to attend specialized conferences, the issue is that no one has yet looked into what the widely-agreed upon effective practices actually are. That specific area is the focus of this study.

Theoretical Framework

This study is based on Vygotsky's (1978) sociocultural development theory, which complements Bandura's (1963) social learning theory, as a broad lens, and is further refined with Charmaz's (2014) take on grounded theory as it attempts to develop a deeper, more objective understanding of what writing center administrators currently understand best practices to be when it comes to educational technology implementation in two-year college writing centers.

Vygotsky (1978) contends that for full cognitive development, and therefore learning, social interaction is required. When individuals learn by interacting it provides a valuable means of instruction that not only the students but the writing tutors working with them can benefit from (Powell & Kalina, 2009). In this type of interaction, learning moves back and forth between parties, not just from instructor-to-learner, creating a more fulfilling experience.

Bandura (1977) wrote that individuals are most likely to adapt to a new model or behavior if they see that the outcomes it produces are what they value. When synthesized with Vygotsky's (1978)

theory, when it comes to education, if a certain behavior shows improved success in students, instructors are more likely to model that behavior than if it does not show improved student success. With these two theories synthesized, the concept of "best practices" can be discerned as a constant modeling of behaviors that have shown success, and when these behaviors no longer show success, they are then moved on from in search of new success-generating behaviors (Vance, 2016).

In order to study these "success-generating behaviors," or "best practices," the population of this study is made up of two-year community college writing center administrators, located predominantly but not exclusively in the northeastern United States, who utilize writing and/or reading assistance software in their centers.

Data Collection

A series of interviews containing open-ended questions were used to elicit the view of 13 2-year community college writing centers administrators on what they perceive as a best practice when it comes to technology in writing centers in general, and their writing center in particular. These interviews allowed for the capture of the open-endedness that Charmaz (2014) recommends when conducting intensive interviewing. All interviews were recorded and transcribed using the Otter.ai software. The answers to all interviews and open-ended questions were then coded using a

three-part coding system (open, axial, and selective) to tease out themes and then analyzed to determine what best practices have emerged from their responses. These interviews were conducted using the Webex conferencing platform.

In writing the findings there are a great number of quotes from the participants. The reasoning for this is based on the "portraiture" work of Sara Lawrence-Lightfoot where allowing the subjects to speak in-depth and incorporating their own words into the research assists in "capturing the complexity, dynamics, and subtlety of human experience" (2020, n.p.). Especially in qualitative research, Lawrence-Lightfoot's model allows using the participants' own narrative to underscore "the balance of structure and improvisation as well as order and creativity" (2020, n.p.). These lengthy quotes help in validating the experiences and ideas of the participants. It also fits into Brown's (2021) concept of "wholehearted living" where she asks "What were their main concerns, and what were the patterns and themes that defined their Wholeheartedness?" (n.p.).

Research Questions

The following are the research questions that this study set out to answer:

Q1: What do Writing Center Administrators perceive as being the best practices in the implementation and use of educational technology in their writing centers?

Q2: How have Writing Center Administrators seen technology as being beneficial to their students at their writing centers, if at all?

Q3: What kinds of future educational technology functionalities would Writing Center Administrators view as the most important for writing center assistance and why?

Participants

The participants in this study were made up of 13 Writing Center Administrators at 2-year community colleges in Connecticut, New Jersey, New York, and Pennsylvania. Each administrator was selected because their location utilized some type of technology in their day-to-day writing center operations. Each participant took part in a 30-45-minute interview guided by 10 questions pre-vetted by experts in the field. Of these experts, two are former Board Officers for national learning assistance organizations as well as 2-year community college learning center administrators with over 35 years of combined experience while the third has worked as a faculty liaison to a 2-year community college Writing Center for the last decade. Each interview was conducted over Webex video conferencing software and then transcribed by Otter.ai. The transcripts were then uploaded to Atlas.ti, where they were then subjected to open, axial, and selective coding. The 13 participants were then randomized and assigned one of the following

pseudonyms: Michael, Carol, Gregory, Marcia, Peter, Janice, Robert, Cynthia, Alice, Oliver, Rachael, Sam, and Brady.

Findings and Interpretations

Following intense interviews and the subsequent reading and coding of their transcripts, themes located within them emerged and scrutiny of those themes has brought answers to the three research questions this study originally set out to find. The intention of these answers is to fill a gap in the knowledge of the best practices of educational technology implementation in 2-year community college writing centers.

Q1: Best Practices in the Implementation and Use of Educational Technology in Writing Centers and the Administrators' Relationship to Them

While there was great variety in the way each participant chose to verbalize their thoughts on what makes the best practices in the implementation and use of educational technology in their writing centers, after close examination and analysis of the interview transcripts, there were five key themes, or best practices, that all 13 participants, in some way, referenced. Those key themes are

1. Assess your technology needs
2. Technology is a tool that does not exist in a vacuum
3. The "human connection" is not only needed, but necessary
4. Practices that apply to face-to-face writing assistance

with a pen and paper also apply to writing assistance that
uses technology

5. The more integrated and seamless the technologies are,
the easier and more effective it is for all stakeholders.

Assess Your Technology Needs. Like purchasing any product,
there can be an overwhelming number of choices when looking at
educational technology solutions that can be brought into a writing
center. There are countless demos, sales pitch emails, and product
names emblazoned on giveaways at every conference relating to
writing centers, with each product making promises laid out in
pages of data. It is necessary, however, to conduct a needs
assessment for your own center before purchasing or leasing
hardware or software to make sure that it will effectively address
the issues you need it to address. Even though there may be
multiple similarities between student populations and needs
between different writing centers, every writing center has its own
identity and mission and it needs to be recognized that not every
technology is "one size fits all." The more specific you can be during
your assessment, the more likely you are to end up with a
technology that meets the needs of the students and the center as a
whole.

Michael, a writing center administrator in the New York City-
metropolitan area, gave the example of his center using GoBoard for
virtual writing sessions, but found that the actual technology was

loaded with functions that were not necessary to the writing center's mission and instead was a much better fit for math and science tutoring. As Michael stated, "the ideal way for me to do writing tutoring, and I think for others of my colleagues as well, is to just use a screen share." He then noted that there are a great deal of other platforms, such as Zoom, that are much more aligned to the needs of his center and that did not contain functionalities that he found superfluous.

Carol, the writing center administrator of a suburban New York State community college, also provided an interesting example of this where she states:

> we did have a smart board at one time (…) but for some reason that was taken away and replaced with a 72-inch screen TV that I can use as a giant monitor to conduct workshops. But I sort of liked the smartboard because you could actually draw on it. I can't put a marker on the television screen. So we have a giant whiteboard next to it. So I'm going back and forth between the two screens.

Introducing a technology without a clear reason or specific need puts the writing enter administrator in the awkward position of having an often expensive piece of hardware or software that, because of the cost of the item and the budget resources of the center, the administrator feels forced to find a use for or else find themselves in the equally unenviable position of explaining why a

particular technology is sitting in the corner unused. As Cynthia, the administrator of a writing center at an urban New Jersey college stated, "when you look past the initial enthusiasm around new technology, and you break it down to actual functionality," the decisions can sometimes make themselves.

Technology is a Tool That Does Not Exist in a Vacuum. The second "best practice," that technology is a tool and it is up to the writing center staff to make sure that tool is used in the most constructive way, was another major practice that quickly emerged. Each participant had at least one example of a tool that they were given access to where the proper support behind it was not included, resulting in a piece of technology that ended up being used without a clear direction on how best, or sometimes even why, to implement it. There are countless technologies that exist that can be implemented into a writing center, but their effectiveness is dependent upon how the writing center uses that particular technology. Simply "throwing" a piece of technology at a problem does not fix anything. Cynthia recounted when her center used a software that provided notice of errors in grammar and/or syntax in student writing, but did not explain the concepts behind it, and instead just provided a correction. That created situations where students now have a grammatically correct paper but do not know why it is now correct nor understand why their original essay

contained errors. Those students, in fact, have not actually learned anything.

Something that is as simple as sharing a Google Doc to allow a writing center tutor to work in real-time with a student on a piece of writing is not reinventing the wheel, but there are some centers that have access to do this, yet for one reason or another, do not employ it even though it could be of great benefit to their student population. This is a tool that, according to those administrators who employ it in their center, see not only a positive reaction from the students but from the tutors as well. As Marcia, the writing center administrator at an New York City-area college stated, "it's a tool and you utilize it as you think about the best way to deliver the experience with the tools at your disposal" before adding that "this is the job and these are just new tools and methods to use to do the job."

The scenario provided by Cynthia can also mean that technology that is not yielding the positive results that it was implemented to achieve may either be employed in a way that does correspond to the results that were expected, or that the technology itself is not a particularly good fit for that writing center. Marcia mentioned utilizing Livescribe smartpens in her center only to find out that while the technology involved was useful, the learning curve to successfully use the technology was so high that it created a barrier to any type of beneficial implementation before adding that

"technology is really meant to be a tool to sort of overcome some kind of obstacle." Gregory, the writing center administrator of a rural New Jersey institute, also brought up this same issue when he stated that, as not only the Writing Center Administrator but a member of the college's Advising and Retention Committee,

> we talk all the time of what are the barriers that we're trying to reduce. So keeping that in mind and figuring out what are kind of the least intimidating tools that we have available in order to get that student buy-in. And sometimes just kind of walking students through it can be helpful.

The act of being "helpful" is a basic function of the writing center (North, 1984).

The "Human Connection" is Not Only Needed, But Necessary. Another refrain from all 13 participants was that, regardless of the technology being used and its effectiveness, there needs to be a human connection involved not only for the students, but for those writing center tutors who work with the students. As Sam, the writing center administrator at an urban New York City college, stated that during the current virtual tutoring taking place due to the COVID-19 pandemic "many of the tutors are just calling our help desk so that they can hear a human voice." Marcia, noted that "the technology needs to allow the practitioner to be able to use the technology in such a way that there is a strong enough sense that the human touch is still there." Cynthia stated that "the most

important thing is it doesn't matter what tool you have, if you don't make an attempt to figure out how best to help someone then it doesn't matter what you have."

All the participants view the tutor as the most important component of any writing assistance experience regardless of how good the technology being used may be. Sam clearly states this when he says

I'm imaginative when it comes to what kind of technology we could have because I still think that it's about the human interactions for students. And it's about seeing the tutors as role models, you know, as a sign of hope.

The administrator of the writing center at a multi-campus Pennsylvania school, Peter, similarly states that "what I'm learning is that, you know, that human element is so, so important. And I think we take it for granted a lot when we're working face-to-face." He further goes on to note that his current goal is "making things more human and less uncomfortable" for his students. Marcia adds, in regards to having to lean more heavily on technology during the pandemic, that writing center professionals need to "give yourself some latitude, you know, you're gonna make mistakes, the students might be frustrated when they first get going. But, just everybody take a beat and realize that this is unprecedented territory we're in and we're doing a great job at doing things that have never been done before."

Michael also shared many of these same sentiments stating that, when it comes to using remote learning platforms, "Zoom is always preferable because as I said, it's all about having a conversation with students." He also added that "they can get their questions answered that way and work with somebody in person. There's that personal connection." Cynthia plainly stated that "the human connection is definitely essential" before adding that

> I think that that really does kind of encapsulate the whole idea that Ed Tech should be as good or as close of a mirror, a representation, of what a human interaction would look like without a human actually being there. So it shouldn't feel disconnected. It shouldn't feel like you know, "I'm the machine here, a robot here." It's like receiving a call from a robot instead of a live person.

Until that stage of sophistication with educational technology is reached, where Artificial Intelligence can replicate the entirety of the human experience, the human remains the most important part of the solution.

Practices That Apply to Face-To-Face Writing Assistance With a Pen and Paper Also Apply to Writing Assistance That Uses Technology. Cynthia was very engaged with the idea that while technology can be used in a multitude of ways and scenarios, writing center tutors and administrators must still rely on the basic tenets of one-on-one tutoring assistance whether or not technology

is being employed. She articulates this as "the most important thing is it doesn't matter what tool you have, if you don't make an attempt to figure out how best to help someone, that's it, it doesn't matter what tool you have." Just as in traditional technology-free interactions, Cynthia feels that "I think the best practice would be part of the philosophy of meeting the students where they are, wherever, wherever they are, and what they bring to the table, (…) how to foster this, how to address areas [of need]," which is the overarching philosophy of technology-free writing assistance.

Oliver, the writing center supervisor at a large Pennsylvanian college, recalled a meeting with his writing center staff where he communicated to them to

remember the same practices you did in the center, (…) you still need to question, not just give the answer, you still need to give the students time to think and to talk and to work. So, mostly reinforcing that what they're doing now, as much as possible, is what they did in the center.

Michael shared a very similar take, stating "pretty much everything that applies to in-person tutoring is going to apply to virtual tutoring as well." From simple courtesies, such as being on-time for appointments, to actively listening during a session and reflecting back to the students, regardless of the method as assistance, these things are still a vital part of the interaction between student and writing center tutor. They add comfort to a

situation that many students are uncomfortable to begin with: that of admitting they need help, and then actually asking for it.

While many of the participants spoke specifically about virtual tutoring due to the COVID-19 pandemic, they also realized that these same approaches are important in in-person sessions where technology is being used. All participants reiterated that it is the writing tutor that is ultimately responsible for ensuring that their students understand the technology that they are using. Almost all of the participants spoke of how one of the most valuable things their writing tutors can do is to make the student feel comfortable with the technology that they are working with, be it the schools' LMS, sharing a Google Doc, or even being able to properly save an essay to the correct location so that they have access to it at a later time.

The More Integrated and Seamless The Technologies Are, The Easier and More Effective It Is For All Stakeholders. One of the biggest concerns of all 13 participants was that a great deal of the technology they currently utilize do not interact with other technologies they use. A writing center that uses TutorTrac as its scheduling, tracking, and reporting software can seamlessly integrate into Ellucian's Colleague software, which many schools use to centralize student information. TutorTrac can then pull student information from Colleague to populate student contact information and schedules. Likewise, the Canvas LMS integrates

well with Google Suite, which not only makes scheduling appointments easier, but it allows links to writing center services being placed directly in the course shell. Some participants referenced their school using a student management software that did not integrate with their writing center scheduling, tracking, and reporting software, leading to myriad issues with meeting the student's needs.

Michael has found that, given the choice, students gravitate towards the technology that they find the easiest to use. There is already a certain level of stress involved with taking classes and then another level of stress when it comes to realizing you need assistance and then asking for it. Unfamiliarity with specialized software that operates under a different set of commands than what the students are familiar with can be one stressor too many and result in students avoiding not just that technology, but the writing center as a whole. Marcia used the phrase "ease and flow" when describing what she felt was most effective in a writing center technology while suburban New Jersey located Janice used the words "more seamless" in describing her hopes for future technology.

All participants agreed that one of the most important missions of the writing center is the removal of barriers for students, and sometimes those barriers come in the form of things that are actually trying to help the student, such as new technologies. This

also is reflected in Marcia's earlier comments about the Livescribe smartpen which, technically, did what it promised to do, but was so difficult to become comfortable with that it ultimately became a barrier itself.

Q2: Benefits of Technology to Students in Writing Centers

All 13 participants stated that, in some way, they see technology as being beneficial to the students who use their writing centers. Even those who favor a writing tutor physically sitting across the desk from a student going over their essay on a piece of paper with a pen recognize that technology is a useful and necessary tool, especially looking towards the not-so-distant future. Even those who state they are not as "tech-savvy" as their colleagues or even their own students see that, when push came to shove and they were forced to embrace some type of virtual writing tutoring, when used in the right ways, technology can be a tool to reach students who may not have been accessible without the technology.

Having the ability to assist students synchronously and/or asynchronously via video conferencing or by uploading work to be reviewed by a tutor allows students who traditionally may not have access to such services, like those working full-time, parents of young children, or even deployed military personnel, to be able to receive the same level of assistance as the more traditional full-time 18-22 year-old college student. This becomes extremely important at the 2-year community college level where non-traditional students

make up a much larger percentage of the total student population than 4-year institutions, with almost 75% of enrolled 2-year community college students falling into the non-traditional category (National Center for Education Statistics, 2019).

The ability to use a scheduling, tracking, and reporting software has also greatly improved the functionality of the writing centers, as it is not only easier to coordinate and track student visits, but software such as TutorTrac, WCOnline, or even proprietary systems, allow writing center administrators to monitor whatever measures they use in constituting student success. This ability to monitor student needs allows for much faster response times when addressing those needs, whether it is reaching out to remind a student of a study group or even contacting counseling services if a student appears overwhelmed or feeling the effects of stress. Marcia even noted that giving the students the ability to book their own appointments through their scheduling software embedded on their website "made the front desk much more approachable and easily accessible" which is a tremendous help when many of your students may have special needs and need that one-on-one interaction away from large groups of people.

Q3: Future Educational Technology for Writing Centers

Questions asked to the participants regarding what types of technologies or functionalities would they like to see available in the future drew very interesting responses with most of the participants

responding with, to paraphrase, "That's a great question. No one has ever asked me that before." It appears then that whatever research is being conducted by the companies creating these technologies, they have not reached out to any of these participants, which begs the question of exactly who they are speaking with about the special needs of 2-year community college writing centers, if at all? Many products on the market seem aimed at 4-year colleges with greater budgetary resources and a different student population. It may also necessitate more open lines of communication between writing centers and college Information Technology departments, as all participants noted that any technology requests must at some point go through their IT department.

By far, however, the most popular answer was a variation on the theme of better integration between systems currently in use and systems that are capable of supporting multiple functions in order to reduce the need for training staff and teaching students a particular software that they may only need to use a handful of times. Gregory talked about being able to utilize the campus LMS, Canvas, which the students are already familiar with instead of having to use another service to assist students virtually. Currently, this can lead to confusion since students now need to not only be comfortable using the writing center's platform, but they also need to be aware that it is a different platform to begin with.

Robert's response included

what I would love to see is my having my tutors have tablets
or a touchscreen notebook type deal, where they can
physically mark up a paper just like they would in person,
right? They have a stylus or a pen and are able to circle words,
put in inserts, have it be much more organic than structured
in the way that Word wants us to structure those reviews and
that formatting.

What is of interest here is that there are tablets and touchscreen
devices that do allow for this, but because of budgetary restrictions,
even procuring one of these devices is cost-prohibitive to say
nothing of being able to outfit the entire writing center tutoring
staff. Because of this there is a premium on technologies that can be
implemented in conjunction with what the center already has in use
without necessitating large scale upgrades of equipment or
software.

Rachael makes the following case:

we still need something that's easy to use and user friendly.
And because not all of our students, even though we think
our students are tech savvy, because they use Facebook, and
Twitter, or TikTok or whatever, that doesn't mean they can sit
down and write a paper. And I think that writing a paper on a
telephone, which some students do, is very difficult. So to do

that, I would be looking for something that's easy for a student to come in and use.

This is ultimately the heart of the matter: whatever technology is implemented, it must, in some way, help the student. College is stressful and can be confusing to even the most prepared individual, so utilizing technologies that are confusing or do not really have a direct impact on helping the students achieve success may not be wasteful, but certainly may not be the most appropriate investments and instead of adding ease to the students' day only adds another learning curve and its' own layer of stress.

Recommendations

Imagine what a redesigned student experience would look like with the implementation of these best practices: A first-year, first-time college student logs into their course shell for the first time. They are already a bit unsure of how college operates, other than being repeatedly told that it is "much different" than high school. They know that there are obvious differences, but honestly, they are not exactly sure what those differences are.

As they scan their course they see, on the right-hand side of their screen, a picture of a smiling face with the words "Need assistance with your writing? Click here!" The student quickly realizes that the photo of a writing tutor helping another student isn't some third-party marketing campaign nor is it a generic model with their college name photoshopped onto the t-shirt they are wearing; no,

this is a real picture of a real peer, a real person at this school who can help if need be.

The student, who is worried about the amount of writing their Intro to Psychology course seems to require, clicks on the link and is taken to the Writing Center's homepage. This homepage features actual photos of the writing center along with pictures and short bios of each writing tutor. There is Tim, a third semester Literature major, Julie, a professional tutor with a BA in Creative Writing, Anna, a fourth semester student who is also the Vice-President of the Student Government Association. The different types of assistance available are all written out and explained, from one-on-one in-person appointments to asynchronous essay uploads to virtual study groups.

Initially nervous about the different tools they would need to access this type of assistance, the student finds that it is much simpler to take advantage of than first thought. By entering their Student ID number, they are presented with a drop-down menu of all the courses they are currently registered for. The student clicks on Psych-101. A calendar pops up displaying the days and times that are available for the next two weeks, along with the available tutor's name, a link to their bio, and whether they are a Professional Tutor or a Peer Tutor. The student is also prompted to choose either "In-Person" or "Virtual." Because they are working full-time, they are glad to see that there is a virtual option, and even happier to see

that the virtual platform is the same one being used for their classes so there isn't the need to learn how to navigate another technology.

But right now the student doesn't really need to meet with a tutor, the student just wants to know if they did their Works Cited pages correctly in APA format. Luckily, there is a button in the middle of the screen to submit an essay for asynchronous assistance. The student clicks on the button and is prompted to enter the course, the section, what the assignment is, and a list of boxes to check off if assistance is needed with that particular item, from grammar to verb tenses to…APA works cited pages! The student clicks that box, attaches their Google Doc, and hits submit. Immediately a notification pops up thanking them for uploading their assignment and lets them know that they will receive a response within 24 hours from a Peer Tutor named Daniel.

Later that day the student notices an email from the Writing Center. It includes a copy of their essay that has notes electronically written on it explaining the proper way to format the Works Cited page along with a link to the college's own Online Writing Lab, which has its own updated citation engine. The response was quick, friendly, personal, and helped a lot. Daniel even wrote that if they need further assistance or have any questions, to feel free to ask for him by name next time, as Daniel is himself a Psychology major.

What the student perhaps did not see was the effective coordination of technologies and humans behind the scenes: the

purposeful way the Writing Center was linked to the course shell, the way that by simply entering their Student ID number the Writing Center was able to pull their course information from the college's main database, the way the entire school had integrated the Google Suite and didn't need them to change to a Microsoft Word doc to upload the paper, the way the Writing Center Administrator saw what the assignment was and what kind of help was needed and was able to direct that assignment to a particular writing tutor who had a very firm grasp of APA format along with an understanding of that Psychology course, and the way that tutor, who was also working from an off-campus location, was able to provide feedback by using a tablet and stylus to give the more personal look of ink on a page when describing how to format in APA before attaching the link to the citation machine.

That is a scenario that has worked out well for the student, which is the main goal of any educational endeavor, as well as for the Writing Center as a whole as they were able to deliver a meaningful solution to an academic need for a student who may not otherwise have been able to get that assistance. Not only that, but it was simple and intuitive for the student to use without them needing to learn to operate any software or hardware that they were not already familiar with due to everything already being integrated at that school.

In order to achieve that type of seamless process there are a number of actions that should be taken according to the answers found to the research questions posed in this study. The first is the start of implementing the uncovered best practices into daily use in the 2-year community college writing center. All five of the best practices, 1) Assess your technology needs, 2) Technology is a tool that does not exist in a vacuum, 3) The "human connection" is not only needed, but necessary, 4) Practices that apply to face-to-face writing assistance with a pen and paper also apply to writing assistance that uses technology, and 5) The more integrated and seamless the technologies are, the easier and more effective it is for all stakeholders, may at first appear to be common sense ideas, but as logical as they may seem, they have never been codified before, and many, if not most, writing center administrators may be unaware that these practices are in fact "best practices" and therefore would be of assistance in their own centers. Some of these best practices are also easy to forget as most writing assistance has gone virtual since the beginning of the COVID-19 pandemic, such as remembering that that no matter how impressive the technology is, there still needs to be a human connection to help keep students grounded and not feel as though they have simply been passed off to a machine.

The second takeaway is that technology in the writing center works best when it is treated as a tool and not as a cure, as writing

center administrators have seen numerous technologies as being beneficial to their students, their writing center employees, to themselves, and to their programs as a whole. When used correctly, these technologies do have a positive impact on students. When used incorrectly or carelessly, technology just becomes another burden, another stressor, on students who are already in need of additional academic assistance. This academic assistance is the main reason they are attending the writing center in the first place.

The third takeaway is that writing center administrators must become more involved, or as involved as they can be, in the decision-making process of what technology eventually ends up in their center. There needs to be clear lines of communication between the writing center administrator and the person that they report to, as well as communication with the Information Technology department to see what works, what does not work, and what possibilities exist for bringing technology into the writing center. While they may not have direct control of their budget, writing center administrators should become more comfortable in the drafting of proposals to those who do have control over the budget allocations that they receive.

Further Study

There are many areas left for further study that have come to light during this research. The following is a list of questions that appeared during the 13 interviews with the writing center

administrators when asked what they felt were important questions for future research into educational technology implementation into college writing centers:

1. What are the best practices for educational technology implementation in 4-year college writing centers? Do they look different from 2-year community college writing center best practices?

2. What is the difference in the technologies being used in 2-year community college writing centers and 4-year college writing centers?

3. What specific effects does budget have on implementing educational technology into college writing centers?

4. Which educational technologies show the greatest rates of student success in 2-year community college writing centers?

5. Is there a difference in the best educational technologies for use in 2-year community college writing centers and 4-year colleges?

6. What are the student views of educational technology in 2-year community college and 4-year college writing centers?

7. Writing center efficacy in face-to-face versus virtual tutoring sessions

Conclusions

The arrival of educational technology in 2-year community college writing centers has been necessary to meet the demands of a

generation that has grown up in an educational system that has become dependent on technology to ensure that their students are able to assimilate into a world where technology is omnipresent. From traditionally technology-heavy occupations in medicine and the sciences to agriculture and raising livestock, there are no longer areas that technology does not touch. Of all of these areas, the most important is not just the education of our youth, but the education and continuing education of our entire population.

Technology may not be able to solve all problems, but it allows us to better equip ourselves to take the steps necessary to solve many of those problems ourselves. At the 2-year community college, the writing center is often a major hub of activity where students congregate not only to improve their writing, but to talk through ideas and gain new understanding of what it means to write, to think critically, to become more familiar and comfortable with language as a whole and, ultimately, what it means to be a successful college student.

The educational technology that is used in the 2-year community college writing center needs to assist the student in reaching their educational goals, but in order to do so it must not add new levels of stress by having to learn complicated software or a piece of equipment. The technology must appear to be a more natural progression from what they are already comfortable using. The more comfortable they are in using the tools they already have

familiarity with will lead to a greater reinforcement of what they are learning, which is ultimately the goal of any learning assistance center, writing or otherwise.

The five best practices outlined in this study, 1) Assess your technology needs, 2) Technology is a tool that does not exist in a vacuum, 3) The "human connection" is not only needed, but necessary, 4) Practices that apply to face-to-face writing assistance with a pen and paper also apply to writing assistance that uses technology, and 5) The more integrated and seamless the technologies are, the easier and more effective it is for all stakeholders, will be of assistance to 2-year community college writing center administrators no matter where they are in their implementation of educational technology. For those who have yet to introduce any, these five best practices will serve as a roadmap for how best to begin that implementation. For those currently using educational technology, they may find new and useful information within this research that they may use in order to further refine their existing practices. For others, these findings may simply act as a reinforcement that what they are currently undertaking in their own writing centers aligns with the prevailing best practices in the field.

This research is not an end unto itself; instead, it is with great hope and anticipation that these best practices will lead others in this field to continue to innovate and find new ways of using

educational technology in the 2-year community college writing center to further assist the students that they serve, and, in turn, those students will find the success that a college education can ultimately lead to.

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