INTERNATIONAL JOURNAL

OF

INSTRUCTIONAL TECHNOLOGY

AND

DISTANCE LEARNING

PUBLISHER'S DECLARATION

Research and innovation in teaching and learning are prime topics for the *Journal of Instructional Technology and Distance Learning* (ISSN 1550-6908). The Journal was initiated in January 2004 to facilitate communication and collaboration among researchers, innovators, practitioners, and administrators of education and training involving innovative technologies and/or distance learning.

The Journal is monthly, refereed, and global. Intellectual property rights are retained by the author(s) and a Creative Commons Copyright permits replication of articles and eBooks for education related purposes. Publication is managed by DonEl Learning Inc. supported by a host of volunteer editors, referees and production staff that cross national boundaries.

IJITDL is committed to publish significant writings of high academic stature for worldwide distribution to stakeholders in distance learning and technology.

In its first twelve years, the Journal logged over twelve million page views and more than two million downloads of Acrobat files of monthly journals and eBooks.

International Journal of Instructional Technology & Distance Learning

Vol. 14. No. 11.

ISSN 1550-6908

Table of Contents –November 2017

Editorial

Academic Journals
Donald G. Perrin

All is not well in academic publishing.

Researchers are unhappy about long wait times for publication – typically up to two years. Refereed review moves too slowly, and too many excellent articles do not get published. Authors must relinquish their copyright to get published only to find that distribution of their findings is limited by paywalls. This also limits the growth of knowledge. (1) Open access is a desirable alternative, but the question is, who is going to pay the publication costs? Some publishers now offer open access with a Creative Commons license in return for payment of an article processing charge by the author, institution or research funder of the accepted manuscript. (2) For more detail visit the specific journal websites.

The *academic community*, stakeholders and the public are angered by having research funded with taxpayer money being placed behind paywalls. The result of recent court hearings now require such research be available open access after one year. Scholars, professionals, and the public that seek research information are especially angered by the cost of access, typically $37 per article from Elsevier if their library does not subscribe to a requested journal or database.

Librarians are frustrated when paywalls limit access. They have finite budgets, and the growth of knowledge should not be impeded by paywalls. Their only tool to combat this is inter-library loan – a time-consuming and costly alternative. The academic community has found its own solutions. One is pirating, which is illegal based on the contract signed by the author with the publisher. An internet search may find open access articles, but copyrighted articles should not be used unless they bear a publisher's copyright. Creative commons provides limited access to individual researchers, faculty, students and the public. It protects intellectual property of the author or sponsor while allowing use for research and educational purposes. Duplication or selling are limited without permission of the author.

Reviewers are drawn primarily from the academic community and from peers in their discipline. Traditionally they are respected leaders in their field of expertise. They make decisions about the value of the research, experimental design, implementation, interpretation of data, findings conclusions, and recommendations. The names of referees enhance the reputation of the journal, and in return referees gain the respect of their peers and the institutions they serve. Referees are often people with demanding schedules who donate their time as a public service. Conflicts of time and interest may sometimes impede their best judgement. (3)

Editorial boards are selected from the leadership in their field of study. The explosion of knowledge and volume of research have overwhelmed traditional publishers opening an easy hunting ground for unqualified and predatory publishers and extortionists. It requires extra work for authors and employers to validate lesser known publishers and their referees, editors and publishers. There are many excellent open source publishers, but beware of fly-by-night operators who promise speedy publication, demand a hefty publication fee and disappear. The Federal Trade omission is cracking down on predatory journals. (4)

Recently there have been revolts and holdouts by faculty, academic organizations, editorial boards and librarians against the cost to access to academic journals while publishers receive articles, referees and editorial boards from the academic community for free. (5) (6).

In the December editorial we will look at the changing role of the publisher and the different ways in which the producers and consumers in the knowledge industry are reacting to organizational changes and new information technologies to resolve frustrations and correct shortcomings of the existing system.

References

1. Eisen, Michael. (March 21, 2012), Op-Ed: How Traditional Publishing Hurts Scientific Progress. WIRED. https://www.wired.com/2012/03/michael-eisen-open-science/

2. Sage Publishing. SAGE Choice Journal and Pricing Exceptions. https://us.sagepub.com/en-us/nam/sage-choice-journal-and-pricing-exceptions

3. Pool, Rebecca. (April/May 2017) Exposing Peer Review. RESEARCH INFORMATION. https://www.researchinformation.info/feature/exposing-peer-review

4. Molteni, Megan. (September 19, 2016) The FTC Is Cracking Down on Predatory Science Journals, WIRED. https://www.wired.com/2016/09/ftc-cracking-predatory-science-journals/

5. Minet, Pascaline. (October 19, 2917) Is The Academic Publishing Industry Ripe For Disruption? LE TEMPS (English edition • WORLDCRUNCH) https://www.worldcrunch.com/tech-science/is-the-academic-publishing-industry-ripe-for-disruption

6. Vogel, Gretchen and Kupferschmidt Kai, (Aug. 23, 2017) A bold open-access push in Germany could change the future of academic publishing. SCIENCE. http://www.sciencemag.org/news/2017/08/bold-open-access-push-germany-could-change-future-academic-publishing

Metacognitive mentoring framework: reduce student attrition in online education

Lisa Marie Portugal
USA

Abstract

This paper summarizes a veteran instructor's experience during a short, yet intensive mentorship within a Community of Practice (CoP) framework. As a member in a Participatory Action Research mentoring / coaching project, the educator gained new insights and knowledge about how to better serve first-year, entry-level, College 100 learners. Key insights cultivated by a peer coaching and mentoring process helped the educator to develop specific instructional best practices better suited to the cognitive, constructivism online learning format designed for first-year learners. The most profound growth that experiential learning derives from the coaching and mentoring process was the understanding and new skills applied that work best with the student population. Having veteran experience instructing advanced learners for a variety of institutions, the educator learned that instructional techniques cannot be applied uniformly when teaching in a first-year classroom compared to more advanced learners. In addition, the educator provides many of her best practices she uses in all her classrooms at many institutions where she teaches. She shares them with you in this book. Novice and veteran educators and trainers in any instructional environment will find useful teaching tools to benefit learners of all ages.

Introduction

This paper is about the personal and professional account of a veteran, instructor who experienced a metacognitive peer mentorship. The discussion explains the issues and challenges, the process, and the learned best practices to support 1st year online students at a for-profit higher education institution. The goal for the reader is to: (1) understand the value of a metacognitive, peer mentorship, and (2) learn super cool instructional techniques to support online learners in creative, inventive, engaging ways. My experiences throughout this process might help educators, coaches, mentors, human resource staff, administration, managers, trainers, and students learn new ways of interacting and producing in any educational setting. The value of this book might: (1) help reduce drop-out rates, (2) engage, inspire, challenge, motivate, and support learners, and (3) assist management in professional development activities when training educators in any educational environment.

The beauty of this discussion is that anyone can find specific instructional best practices to support their interactions throughout the learning process whether one is a student, an educator, or a manager of educators and trainers. The peer-mentorship process and the learned best practices can be applied in any educational setting and by anyone interested in an improved learning process. Students can learn how to interact in an educational setting to improve their performance. Educators can learn how to support learners with new, differentiated instructional techniques for any age and learning style. Managers can learn how to support educators during training initiatives while providing effective, intuitive instructional techniques and take-aways.

Attrition is always a concern for all learning environments. The instructional strategies presented can be incorporated in any educational setting and include intuitive, creative, technology

components to support the learning process. The purpose of this metacognitive, peer mentorship not only enhanced student engagement and reduced attrition, but also supported faculty instructional development. I experienced the following concepts in action during the online faculty mentorship:

1. self-regulated learning process,
2. interactions with cognition and metacognition,
3. gaps in knowledge,
4. using advanced learning technologies,
5. intelligent tutoring systems,
6. information processing theory,
7. proposing future directions,
8. activities offered before, during, and after lessons or as ongoing assignments in an online course,
9. improving problem-solving skills,
10. using metacognition principles to enhance student learning,
11. increased teacher awareness of student thinking,
12. "teachers' awareness of students' learning can be practically enhanced (Lee, Irving, Pape, & Owens, 2015),
13. learning attitudes and engagement (Lee, Irving, Pape, & Owens, 2015),
14. teachers' feedback is a critical instructional strategy" (Lee, Irving, Pape, & Owens, 2015),
15. classroom interactions can be enhanced by "shared issues or difficulties" increasing a "positive Sense of Community" (Lee, Irving, Pape, & Owens, 2015),
16. exploration of multimedia instructional presentations,
17. teacher's use of language that explicitly targeted students' metacognitive knowledge altered their metacognition,
18. "metacognitive thinking strategies with different teaching strategies" (Lee, Irving, Pape, & Owens, 2015),
19. collaborative "online inquiry" (Lee, Irving, Pape, & Owens, 2015),
20. Personal Online Inquiry,
21. professional learning community (PLC), and
22. at-risk, metacognition, student retention, and student achievement,
23. professional coaching and mentoring,
24. peer coaching and mentoring,
25. Community of Practice (CoP) (Antonietti, Colombo, & Di Nuzzo, 2015; Azevedo, Mudrick, Taub, & Wortha, 2017; Chekwa, McFadden, Divine, & Dorius, 2015; Efklides, 2017; Huang & Chang, 2013; Laskey & Hetzel, 2010; Lee, Irving, Pape, & Owens, 2015; Millis & IDEA, 2016; Mytkowicz, Goss, & Steinberg, 2014; Özcan, 2016; Prytula, 2012; Thomas & Anderson, 2014; Zepeda, Richey, Ronevich, & Nokes-Malach, 2015).

The peer-mentoring and Participatory Action Research process changed the instructor's best instructional practices to align more appropriately with a first-year cognitive, constructivism online classroom environment. The resulting coaching and mentoring process: (1) enhanced job satisfaction, (2) reduced isolation, (3) modeled more appropriate instructional practices for facilitating in a first-year online classroom, and (4) allowed opportunity to connect with and learn from a network of faculty peers (Algozzini, Bessolo, Gabay, Voyles, & Batchelor, 2016). The

Community of Practice (CoP) mentorship model helped the instructor develop a stronger sense of cognitive instructional practices to apply in her first-year classroom. The following categories interpret the most original approaches of a cognitive perspective regarding learning: (1) reciprocal teaching, (2) cognitive apprenticeship, (3) inquiry learning, (4) problem-based learning, (5) anchored instruction, and (6) discovery learning (Yilmaz, 2011).

Background

The online classroom is quite different from traditional classrooms and requires specific, measurable, differentiated strategies and techniques to help students succeed. In addition, when direct and targeted strategies are not used within the online classroom, students may feel isolated, experience more challenges, and higher attrition rates are evident. The change initiative I was involved with at XYZ University addressed these challenges with targeted measures not only for learners, but for online faculty as well. How online faculty interact with learners can greatly impact attrition and students' perceptions about their ability to persist. The research reveals faculty presence and interaction in the online classroom greatly impacts student success (Antonietti, Colombo, & Di Nuzzo, 2015; Chekwa, McFadden, Divine, & Dorius, 2015; Huang & Chang, 2013; Laskey & Hetzel, 2010; Lee, Irving, Pape, & Owens, 2015; Millis & IDEA, 2016; Mytkowicz, Goss, & Steinberg, 2014; Özcan, 2016).

Furthermore, creating a sense of community enables learners the opportunity to engage at higher levels, feel less isolated, and develop more confidence in their abilities in a student-centered learning environment (Portugal, 2015a; Portugal, 2015b; Portugal, 2015c; Portugal, 2015d; Portugal, 2014e). The deliberate training of faculty using targeted methodology, specific communication techniques, and modeling differentiated instructional strategies can support a sense of community (Algozzini, Bessolo, Gabay, Voyles, & Batchelor, 2016; Portugal, 2015a; Portugal, 2015b; Portugal, 2015c; Portugal, 2015d; Portugal, 2014e; Yilmaz, 2011).

Online learning is no longer viewed from a negative perspective by most traditional universities. Moreover, traditional universities have jumped onboard and created online learning environments in most of their offerings. The level of competition for students in higher education in state, private, for-profit, and non-profit institutions is high. Regardless of the type of institution, administrators are very aware of the fact that student attrition must be addressed at all levels and within every program. Entry-level and first-year learners are particularly susceptible to dropping-out early and all institutions in higher education are concerned with these challenges.

When students drop-out of a university, they may never re-enroll again, or they may re-enroll at another institution they feel may better serve their needs. With this in mind, higher education institutions compete with every other institution on the market to keep the students they enroll and to attract students who are shopping for the environment that works best for them.

Students are looking for the institution that will serve their needs, address their learning style, support their ability level, offer a sense of community and belonging, and differentiate the instruction. Students may not cognitively understand they are looking for these specific concepts, but they do know when their needs are not being addressed. As administrators and faculty, we may be aware of specific theories of instruction and best practices, but are we actually addressing these issues within our online classrooms in our daily best practices? Do trainers, human resource practitioners, administrators, and faculty mentors address every action online faculty should be making in their classrooms? Is there measurable, specific, and directed training created to help online faculty implement these best practices?

Online faculty

Most online faculty typically receive four-week, intensive, new recruit online training when they are probationally hired. But, do most institutions with online platforms offer on-going faculty development in the area of best practices for student success? Do most institutions really know what actions within the online classroom actually work toward retaining students and helping them persist? Interpreting theory into specific best practices often times can be an underdeveloped, murky area in faculty development.

Furthermore, what may work with graduate-level learners may not work with first-year learners. Similarly, what may work in a traditional, lecture-based, face-to-face setting may not translate well in a student-centered, online instructional environment. How are higher education institutions addressing these challenges in faculty ranks?

I have been an adjunct instructor for XYZ University since 2011. I received all the typical training every adjunct starts with which is the four-week, structured online faculty orientation. Next, a *teach-as you-learn* class is assigned during a peer-mentor observational period. Typically, this is the same type of training online faculty receive at most institutions and introduces the new recruit to the learning management system and various requirements and practices one must include in his or her instruction. Teaching at XYZ University for several years before this change initiative came along gave me insight into the high attrition rates the university experienced with first-year students. I was very aware of the attrition rates as I experienced students dropping my entry-level class in high numbers before class started, the first week of class, and throughout the eight-week module. This was not a unique situation to me, but was a common occurrence in all first-year, College 100 classes throughout the institution.

Although I, and my colleagues, each have vast experiences teaching in online classrooms, extensive researching skills, strong publishing backgrounds, and training in hands-on best practices, strategies, and techniques, our first-year students continued to drop our classes in high numbers. Why was that we asked? Why does this happen and what can we do about it? In addition, this phenomenon is not an isolated challenge. It is widely known at all higher education institutions that online students and first-year students are the most challenging to retain. This issue is present at every higher education institution and each institution seeks, creates, and develops training designed for faulty development to address this issue in various ways.

As an online instructor, I have been involved in faculty training for 15 universities and coming from that perspective, I can say most institutions typically offer the four-week new employee training module then continue to add more faculty requirements and administrative-type duties in the classroom over time. New techniques are rarely addressed, but more administrative "to-do's" in the online classroom are added-on to the workload each year.

These administrative "to-do's" are rarely or never tested or piloted for student success and attrition measures and are merely added-on to faculty requirements for continued employment. This is very common and typical in most online instructional settings. In fact, most online instructors who have lasted in online instruction know new faculty administrative duties within the classroom are common every year.

Over 69% of higher education institutions are committed to increasing online enrollment and online education has been steadily increasing by 10% each year (Forte, Schwandt, Swayze, Butler, & Aschcraft, 2016; Welch, Napoleon, Hill, & Roumell, 2014). Two important contributing factors identified in increasing student success, specifically in online classrooms include: (1) the fostering of an increased sense of community with peers and institution, and (2) online instructor support. Online education has experienced an expansion within higher education and studies documenting factors positively influencing student attrition rates have increased as well (Gaševic, Kovanović,

Joksimović, & Siemens, 2014; Kranzow, 2013; Rice, 2014). Online instructor presence, specific and directed instructor retention strategies, student engagement, and sense of community are important factors that must be addressed in faculty training and mentorship programs.

Having taught for many institutions and heavily researching and writing about the challenges students, faculty, and institutions face in online education, I know the role of an online instructor can greatly impact student success and attrition (Portugal, 2015a; Portugal, 2015b; Portugal, 2015c; Portugal, 2015d; Portugal, 2014e; Portugal, 2006f; Portugal, 2006g). Furthermore, having taught for so many institutions for over a decade in an online format, I have experienced many changes, practices, additions to workload, rhetoric, training modules, and professional development efforts seeking to remedy the attrition challenge every institution faces.

Discussion

When the program evaluation of the first-year College 100 course at XYZ University was audited, my internal reaction was "Uh-oh more heads are going to roll and faculty will end up getting more work piled on us." Typically, this is a common reaction when an internal audit, assessment, or program evaluation is conducted in any workplace. To my surprise, when the program evaluation completed, the changes that were implemented not only kept students from dropping-out, it helped direct online faculty in more practical, targeted, instructional practices that directly related to first-year student challenges. The curriculum changes were specifically designed for first-year students with an interactive, intuitive, easy-to-follow, step-by-step, visual and auditory perspective. In addition, assignments were completely revamped and redesigned with a first-year learner sensitivity in mind.

For example, first-year learners had to complete a fully developed academic APA paper including citations, referencing, and synthesis of research throughout the body of their writing. Common right? So you ask, "What's wrong with that?" The program evaluation suggested that first-year learners might benefit from more interactive, instructional methods with differentiated, authentic instructional assignments as well. The final project changed from a fully developed APA research paper to a menu of deliverables students could choose from with an authentic, performance-based, APA or MLA assignment. Although there are more academic instructions with very specific rubric components, the final project is now a multimedia presentation students create with the following components:

- Reference all sources, graphics, and videos in a chosen format style (APA, MLA, or Chicago) at the end of your presentation.
- Create a script, rehearse, record, and properly embed narration for your entire presentation.
- Include a minimum of two media forms that are different to strengthen your presentation that include video, animation, graphics, images, or additional audio.
- Use at least one (1) advance feature of your presentation tool. This may include slide transitions, animation, or automatically playing videos or narration.

Student presentation examples
(used with permission)

Rich Hutnik used YouTube: https://youtu.be/B9oBeuFZPxs

Ryan Toyer used Adobe Voice: https://voice.adobe.com/a/D3XLG/

Malachy Moran used Knovio:
https://view.knowledgevision.com/presentation/52299d42a5fc4719979990a573541325

As an online instructor, I have advocated for the use of use of technology components in education at all levels, K12 through university, for many years. I write about this issue in peer-reviewed journals, I practice using technology in all my classes, and I mentor my student-teacher candidates in this practice as well. I have been a faculty supervisor and mentor to student-teacher candidates for many years at various universities and I always advocate for the inclusion of technology in every lesson I observe my student-teachers delivering when I visit their K12 classrooms.

I have always asked my student-teachers to not only create interactive, differentiated, authentic lesson plans, but to offer a *menu* of authentic deliverables to students so they can develop these skills early in life. I expect to view technology components in the lesson delivery of my student-teacher candidates; and I expect to see student projects assigned that give them an opportunity to be creative in an academic setting as well. Needless to say, I was overwhelmingly excited when the curriculum changed at XYZ University in College 100 and students could use technology in a creative, academic manner in their final project submissions.

The program evaluation was not only effective and non-intrusive to my work environment, but the changes that were made in curriculum enhanced student learning opportunities while addressing engagement strategies in inventive ways. Furthermore, the program evaluation wasn't about looking for what faculty was doing wrong and letting people go, it was about enhancing the curriculum, creating a sense of community, and developing interactive, audio-visual tools to help first-year learners succeed.

Program changes and mentorship

Now, let's talk about how the program changes and the mentorship I received to adopt the new faculty best practices unexpectedly changed my workload for the better and enhanced my instruction. For a veteran online instructor who thought she knew everything that surprised me as well! The new best practices included the following components:

1. Standardized rubrics,
2. Standardized announcements,
3. Standardized probing, Bloom's Taxonomy questions bank,
4. A bank of tools, resources, and videos shared amongst faculty that can be posted in the classroom,
5. Access to peer faculty and management online classrooms to observe best practices in action,
6. Access to monthly meetings or recorded meetings for coaching, mentoring, sharing of ideas, challenges, experiences,
7. Interactive, intuitive audio / visual curriculum,
8. Conversational communication style in the discussion threads with more interaction within each individual discussion thread,
9. Less emphasis on heavy APA instruction and more emphasis on peer-to-peer engagement, faculty-to-peer engagement and interaction in the discussion threads, and
10. Addition of a multimedia final project replacing the typical, APA academic paper.

Since I have taught for over a decade at 15 universities, I have had extensive, and I mean *extensive* faculty training and professional development in systems, practices, theory, strategies, techniques, technology, and administrative duties. I thought I knew it all. In addition, I teach and mentor undergraduate, graduate, and doctoral learners in the art and practice of teaching others. Every institution has very specific ideas about what online faculty should and shouldn't be doing in the online classroom.

Most practices are quite similar and have been standardized in most online educational settings. Moreover, every quarter and every year, faculty have more duties, more responsibilities, and more tasks to check-off and complete within the online classroom. All of this extra work or "pile-on" of faculty duties is in hopes of retaining students and lowering the attrition rates. Now let's compare and contrast. As I was trained, and used to being extraordinarily substantive in my responses to students, I continued this practice at XYZ University as well. The program evaluation changed all that.

Faculty were mentored in responding and connecting with students in a different manner. We were coached on responding in a more conversational manner; less "over-use" of substantive, supporting research-paraphrased and citations throughout the body of our communications. The same practice required everywhere of focused, probing, Socratic questioning was still in place, but with shorter written responses not heavily-laden with extensive supporting theory. This was a big change for me. I was used to creating *extremely* substantive responses with heavy research-focused comments.

The type of responses that are required at the graduate, EdD, and PhD levels of instruction with student-teacher candidates are not necessarily the best way to engage first-year College 100 learners who may be intimidated and even confused by my standard level and type of interaction. The mentorship at XYZ University walked me through the newly designed faculty best practices and the training altered my perception about best practices and communication style with my first-year learners. What works for one group of students doesn't always translate well for first-year learners.

Furthermore, first-year College 100 learners at XYZ University are just getting acquainted with the vast career and educational opportunities ahead of them; they are not necessarily ready for the type of interaction I engage my student-teacher candidates with at other institutions. I was used to over-performing at 15 universities with *very rigid* faculty performance requirements that I put into practice with my first-year learners at XYZ University. This didn't translate well.

Throughout the mentorship process at XYZ University, I learned to communicate with first-year learners in a very different tone, with a very different writing style, and with a stronger sense of community-building in every interaction I made within my classroom. This was a concerted effort to alter my instructional practice in a way that actually minimized my workload. I was no longer creating long, theory-heavy, well researched, substantive responses, but shorter conversational responses relating to students in a personal manner.

Learning strategies to help students interact and engage with one another was a new technique as well. Instead of my focus being on posting substantive research, the focused changed to applied engagement strategies fostering a sense of community and sharing. Instead of posting responses about Transformational Theory, I *applied* the concepts within my classrooms and fostered an intrinsic and extrinsic inspirational, communal environment.

> According to Smith (2004), when the facilitator model is used, questions posed to students can appear to be an invitation to explore something, and students participating will experience "the giving of insight" to their fellow learners (p. 1). This model manages to use students as knowledge creators and allows learners more self-direction and autonomy in their learning experiences. In addition, this model further develops questions, issues, and problems that learners bring to the learning environment. Furthermore, Rogers's notions of meaningful learning, experiential learning, learning through doing, personal involvement, self-initiated learning, learning evaluated by the learner, and essence in meaning can be expanded upon in an online learning modality. For these reasons, Rogers's student-centered learning theory has much strength when developed in a modality designed for online learners. (Portugal, 2015a, p. 20).

More focus was placed on what students were saying to me and to each other with a conversational "volley-back-and forth" type of communication style and less focus was placed on heavily researched, theory-based responses. Students could *feel* I was listening to them and talking to them. They could *feel* I cared about them in a personal manner. Fostering this type of interaction amongst peers was an additional focus. Instead of creating my typically theory-based responses, I focused on getting students to interact with each other, respond to what their peers were saying, and respond to groups of peers with similar or contrasting ideas and views.

This "volley-back-and forth" technique was a key component I started to focus on in my new best practices. This notion helped to foster a higher level of engagement and a sense of community amongst my learners. So, did this lessen my workload in the classroom, yes it did. Why? Because I was no longer having to post substantive, research-heavy responses to every learner. I was able to carry on conversions that focused on a sense of community and engagement with peers in both an individual manner and a selected group manner.

Performance-based technology assignments

Now let's talk about the newly designed assignments. My workload decreased here as well because I was no longer having to instruct about APA writing style and guidelines in every response and announcement as I was used to doing in the past. Since the final project changed to an authentic, performance-based deliverable with a technology component requirement, my instructional focus changed as well.

Naturally, students are still instructed on writing style requirements, but the daily interactions I was having with them didn't have to be so heavily, APA-writing style-based. This gave us more time to interact, share, integrate new ideas and concepts, learn how to apply technology in an educational setting, learn how to critically think in new ways, express oneself with peers, and yes, still learn about writing style along the way.

According to Yilmaz (2011), effective teaching assimilates learning theories that explain and guide various expressions of the learning process. There are three distinct areas encompassing the range of learning theories which include: constructivism, cognitivism, and behaviorism. All aspects of instruction, curriculum, and most educational settings used to be dominated by a teacher-centered instructional framework. Today, the concept of cognitivism, in contrast, is a rather new theory of learning not well known and often times confused with constructivism by teachers (Algozzini, Bessolo, Gabay, Voyles, & Batchelor, 2016; Portugal, 2015a; Portugal, 2015b; Portugal, 2015c; Portugal, 2015d; Portugal, 2014e; Yilmaz, 2011).

The concept of constructivism as applied in modern teaching explains the notion of learner as maker or creator of knowledge and meaning. The components of a classroom incorporating a constructivism model are as follows: (1) active involvement of the learner, (2) a democratic environment, (3) activities are student-centered and interactive, and (4) the educator facilitates a learning process whereby learners are encouraged to be autonomous and responsible. The role of educators in a constructivist classroom is to scaffold information, coach, and model behaviors, best practices, and expectations (Algozzini, Bessolo, Gabay, Voyles, & Batchelor, 2016; Portugal, 2015a; Portugal, 2015b; Portugal, 2015c; Portugal, 2015d; Portugal, 2014e; Yilmaz, 2011).

Before my mentorship at XYZ University, one of my graduate students in a teacher education master's degree program at another university made this comment in email:

> I want to have a conversion with you, I want to be able to pick your brain, learn new facts that way. I want to have an ongoing conversion rather than reading long theory responses with little to no interaction about my conversion and ideas. I want the discussion to be volleyed back and forth within the discussion thread as if I were in a physical classroom

with you. You have a lot of knowledge and that is evident in everything you do and post in the classroom. But, your responses are so intimidating and sometimes I don't know where to start.

That comment is eye-opening right! Now keep in mind, I am *required* to post substantively with well-composed, well researched responses in every interaction I have in the classroom. That is *specifically* stated in every faculty assessment rubric at every university I instruct at. Because I am a high achiever and very driven, I always receive high scores when I am assessed on faculty performance annually for well over a decade. But…do those faculty assessment rubrics and pile-on duties take into account how the students are feeling? Often times, administrators believe more faculty duties, to-do's, and check-list additions will help students succeed, and more importantly, will *retain* students.

But, does it really work that way? Is student retention about giving faculty more quarterly, annual duties, responsibilities, to-do's, and check-list additions or should we be looking at different types of interactions with learners? Is the curriculum interactive? Are our interactions personalized? What types of engagement techniques are we using to help learners tune-in and interact with their peers more often? Are we using technology components that address learning styles, ability levels, and excite, engage, motivate, inspire, and challenge learners to persist? Is the classroom intuitively designed or confusing and difficult to navigate?

Most universities require faculty to post very substantive responses to students and we have a check-list or assessment rubric that must be addressed. Often times, faculty keep getting piled-on with more to-do's and check-list additions that we can forget the students on the other end of our interactions with them. As I went through the XYZ University mentorship for the newly designed faculty best practices for the first-year College 100 course, I remembered that email from my student.

Although I am still required to make sure everything on my to-do, check-list is adhered too at all the universities I work for, I learned an important lesson. Having an extended conservation with my learners in the discussion threads in a more conversational manner goes a long way in retaining students and engaging them at a higher level. The XYZ University mentorship taught me that personalized conversions are key and quite possibly more important than heavy, substantive, theory-laden responses, *especially* when working with first-year College 100 learners.

All learners want to feel that special touch from their instructor. I do this in a variety of ways. Most universities require faculty to respond to a minimum of 25% of the students enrolled in the class in the weekly discussion threads. I have always made it a point to respond to every student's initial post. So for example, if I have 30 students enrolled, I will create 30 researched responses every week in the discussion threads. The XYZ University mentorship trained me to go beyond making only that initial response to students and carry on conversions, ask students to interact with each other's comments that I highlight, and volley conversions more often.

Rather than creating substantive theory or heavy instructional style responses, I changed my tactics and interacted more often with shorter comments and group questions highlighting various comments collected from a grouping of students. With these new techniques, I was engaging more students, more often, with shorter more conversational pieces. So in a way, these strategies altered my interactions with learners and lessened my workload because I didn't have to create heavily, peer-reviewed researched response as I was doing in the past.

Although I may have thought my responses were exceptional, first-year learners were intimidated and viewed my responses as more work for them beyond answering the initial required discussion question each week. That strategy and level of work may be required for master's and PhD level learners who might expect and need the heavy instructional style responses, but for first-year

learners, that's intimidating. Moreover, I learned that a conversational volley is important for all learners at every level of instruction. I still create the heavy, researched responses for other university courses I instruct, but I have adopted the conversational volley style into my best practices everywhere.

Theoretical framework community of practice (COP)

Participatory action research mentoring

Now let's talk about the mentorship process and the interactions with my peers and management "coaches." The following components were very much a part of my own learning process during the coaching and mentoring at XYZ University: (1) Participatory Action Research, (2) journey of change from various perspectives, (3) overcoming resistance to change, and (4) overwhelmingly positive growth as a veteran online instructor (Algozzini, Bessolo, Gabay, Voyles, & Batchelor, 2016; Yilmaz, 2011). Moreover, throughout the mentorship process, I experienced: (1) self-regulated learning techniques and metacognitive processes, (2) applied and discussed coaching and mentoring framework as an agent of change, and (3) shifts in thinking and upgrade in instructional practices (Algozzini, Bessolo, Gabay, Voyles, & Batchelor, 2016; Yilmaz, 2011).

In a study conducted by Portugal (2015a):

> The top six attributes of online instructors were: (a) good organization skills, (b) effective time management, (c) positive work attitude and behavior (e.g., patience, diligence), (d) ability to be comfortable in an online learning environment, (e) flexible and proactive when working with student needs, and (f) technological competence. (p. 37)

In addition to the attributes and skills online faculty should possess listed above, three other important factors are necessary to succeed and stay employed: (1) willingness to continually learn new skills, (2) ability to easily adapt to quarterly, annual changes and adaptations imposed by administration, and (3) ability to accept constant training and updating of new skills, strategies, techniques, and methods. For traditional, ground-based, lecture faculty, these areas might pose a challenge because change, training, and additional administrative to-do's are constant and typical in online education. The pile-on of more faculty duties and requirements is constant and ever-changing in online education. Pleasantly though, my experience in the XYZ University mentorship far exceeded my veteran assumptions and past and current experiences with the check-list and to-do's.

In a study conducted by Christensen and Spackman (2017), instructional designers and curriculum developers should pay particular attention to the redesigning and targeting of course materials, modules, tools, technology, and interactive capabilities. Students in an online setting can lose "momentum at particular points in the course" and course design should be an important factor in addition to faculty interactions within the classroom (Christensen & Spackman, 2017). Over-looking course design challenges can add to the attrition numbers many institutions face.

Course designers should be given the time, resources, tools, and assets necessary to develop interactive, easy-to-understand curriculum modules to increase student persistence. It's not always about what the instructor is and isn't doing in the classroom. It's also about the curriculum design and the ease or difficulty in maneuvering within the online platform. In fact, many students drop before the first day, on the first day, and within the first week. This issue doesn't point to what the instructor is doing wrong, it points to the curriculum module first.

If students believe the module looks too overwhelming, difficult to maneuver, and difficult to find their way around, they may drop. I know when I was working on my bachelor's degree in my early 20s, I would drop classes in the first week just based on the syllabus and the assignments listed. If I felt overwhelmed or felt I couldn't do the work, I dropped and jumped into another class in that

first week. It's worth noting that curriculum design, interactive, technology components, and assignment deliverables should be high priority to any institution dealing with attrition challenges.

Often times, attrition issues are dropped on faculty by way of more administrative to-do's while other important areas of significance are ignored. Moreover, adding more administrative to-do's to faculty requirements merely adds to the alienation students might feel in the classroom because they are not being served in a way that allows for more important types of personal interactions they may need.

In another study conducted by Dickinson (2017):

> Through a two-semester evaluation of online courses, it is evident consideration must be given to teachers establishing a rapport with online students. After evaluating e-mail communication with students and examining student success rates and teaching evaluation data, there is a connection between e-mail tone and student performance in an online class. (p. 1)

I have to agree with this statement 100%! I always use a change-agent, motivational tone with my learners in every interaction I have with them. I make them feel they are leaders within their communities and their decision to pursue their education will help them develop their talents and attributes as change-agents. Sometimes, I feel the personal interactions; personal comments, helpful emails, and personalized feedback I use go a long way in my students' persistence level and my faculty evaluations over the years.

I've had students go on to complete the master's, PhD, and EdD just because they had me in one class and could envision themselves attaining an advanced degree. They were right! They can and they did. Finally, I would like to add that having patience and discretion accepting late work goes a long way with students as well. These various behaviors in my best practices have afforded me many glowing reviews, comments, emails, and high student evaluations for many years.

Thompson, Vogler, and Xiu (2017) posited that a combination of technology tools, social presence, teaching presence, and cognitive presence utilized by faculty in their online classrooms can greatly impact student success and attrition challenges. In my view, when faculty are overloaded with administrative pile-on's and to-do's, we have: (1) less time to create engaging technology tools with our content; (2) less time to engage students in personal, meaningful conversions in the threads; (3) less time to add new research in our interactions; and (4) less patience to afford our learners.

Truthfully, I would rather create engaging technology tools with my content and have enriching, content-related discussions in the threads than post endless, required announcements and attend to all the daily, weekly faculty checklist categories in the faculty assessment rubric required for employment. Regardless of the administrative pile-on's and to-do's I am required to attend too at every institution I instruct for, I still make it a point to use all the personal touches I mentioned in my best practices.

Personalization strategies

As an educator, it is important for me to customize, individualize, and personalize learning opportunities, activities, and my own communication methods for my learners. I do this in a variety of ways using differentiated instructional techniques and personalized, instructional, authentic, menu opportunities.

The concept of personalized learning addresses instruction where the instructional approach and the pace of learning are optimized for the needs of each learner. Adult learners want to know: (a) Where am I going? (b) Where am I now? and (c) How can I close the gap? A personalized learning

program can help learners answer these questions and help them navigate their own learning agenda and progress.

This means changing the approach i.e. differentiation, changing the pace i.e. individualization, and personalization i.e. the combination of both. Student agency means giving learners instructional activities that are relevant and meaningful to the learner. Learners are often times driven by their self-initiated interests. As an educator, understand the interests, learning style, and ability level of the learner and deliver instructional content in a manner that inspires, engages, and motivates the learner.

Merriam, Baumgartner and Caffarella (2007) documented four characteristics that Carl Rogers, a psychologist with a humanist orientation toward adult learning developed regarding his notion of the adult learning process, including self-initiated, pervasive, evaluated by the learner, and essence in meaning (p. 283).

With these adult learning Andragogy concepts in mind, examine strategies you might develop in your instructional style when working with learners in any learning situation.

Components and principles such as: (1) intrinsic and extrinsic motivational factors, (2) learning styles, (3) cultural factors, (4) diversity factors, (5) differentiated instructional strategies, (6) personalized learning, (7) student agency, (8) engagement techniques, (9) technology integration, (10) adult learning theory - Andragogy Theory best practices or Pedagogy Theory, (11) Cognitive Dissonance Theory, and (12) behaviorist, cognitive, and socio-cultural theories can be applied to create appropriate learning environments meeting the needs of diverse adults or youth in a variety of settings.

As an educator, I strive to create and develop on-demand, instructional materials in an individualized, differentiated, personalized manner with individualized instruction and feedback based on the student's needs and interests.

Undertake a plan

Theory of Connectivism and Learning Networks, Personal Learning Networks, and Personal Learning Environments can be strategically used to:

1. Advocate,
2. Educate,
3. Inform,
4. Collect resources,
5. Make connections,
6. Develop partnerships, associations, relationships,
7. Create interactive learning modules and learning tools, and
8. Connect and collaborate with affected populations and stakeholders.
   (Portugal, 2017, p. 45)

Differentiated instructional strategies

According to Portugal (2014):

> Individualized teaching strategies may involve faculty using progressive teaching strategies that address various learning styles with significant, specific feedback to each learner that is unique to each learner's needs. A one-size-fits-all approach to teaching does not address individualized teaching strategies. Faculty should be addressing students on an individual basis, meeting the student where he or she is, and working toward bringing each student to a higher level. This approach requires that faculty respond to each student

according to his or her needs rather than using a cut-and-paste-the-same-information-to-all-students approach. All correspondence to each student should be created uniquely for each student based upon students' comments, assignment submissions, e-mails, questions, and so on. (p. 39)

How might we as educators use the best practices we know about and maintain with our students, but when working with family stakeholders as well? What creative ways do you use to engage families and parents to help your students succeed?

Modeling is an excellent way educators and trainers can help learners understand our high expectations. But with modeling, we must explain what we are doing in a step-by-step procedure so learners understand what we are asking them to do as we model our behaviors and actions in the classroom. We can't expect learners to "get it" and know we are modeling. It's best to specifically tell learners what we are doing and why we do it. This helps them understand the learning process and their own learning development. Give learners the tools to understand the process and become self-centered, independent, knowledge creators. That's always my goal.

Examine some of the problems that might occur if differentiated instructional strategies are not used when planning and implementing learning situations.

According to Kanuka and Garrison (2004), "For this construct, the focus group participants agreed that if online discourse is to be effective, then instructors must take an active role and assist, or guide, the discussions. One example provided for how to achieve this was through posing questions of emerging relevance" (p. 29). I always use the discussion question threads (DQ's) to pose questions of emerging relevance each week based upon the assignments and learning objectives. I know that using differentiated learning strategies with students of any age is a valuable way to help them comprehend course materials and assignments on a deeper level. Differentiated instructional strategies and techniques help educators address various learning styles, diversity, cultural, multigenerational, socio-economic, ability levels, and special needs learners.

I like to use the following strategies in my classrooms: (1) direct instruction, (2) inquiry-based learning, (3) cooperative learning, and (4) information processing strategies. Some of the ways I use these techniques are listed in the differentiated chart below that I refer to often when designing lesson plans and posting probing questions in the discussion threads. I like using technology, Prezi presentations, YouTube presentations, KWL charts, learning logs, reflective learning, questioning, graphic organizers, Internet searches, peer-critiquing, self-assessment, self-reflection, and a menu option of assignment deliverables just to name a few techniques. I try to add these strategies in my probing questions and with the examples I post. Then, I ask my learners to practice what they are learning based on these strategies. In this way, I am modeling best practices, instructional strategies, and engagement techniques.

Special needs learners benefit immensely with differentiated instructional strategies.

Synthesizing the materials and information provided, examine some of the problems that might occur if differentiated instructional strategies are not used when planning and implementing learning situations.

One way to work with learners of all ability levels is via differentiated instruction (matching tasks). As an educator you need to be well-versed in all these instructional methods.

Differentiated instruction

This Prezi presentation is an example of differentiated instruction and addresses visual and auditory learners. I post this in my teacher education classes with a Socratic, Bloom's Taxonomy question such as…

Review the Prezi presentation link I created and explain how you might use technology in your classroom with your specific content area to differentiate instruction for your learners. Describe why this is essential when working with ability levels, learning styles, special needs, and diversity.

Portugal, L. M. (2014, October 14). Differentiated instruction. Retrieved from http://prezi.com/rjmqnc4kqqpo/?utm_campaign=share&

Example probing questions

The following section includes an example of questions faculty can use in their College 100 classes that are provided by the university *questions bank*. Faculty no longer create their own questions, they can, but these questions are pre-made for faculty to use for all eight weeks of class in the discussion threads. The *questions bank* document provided by the university is much longer, these are merely the first several examples in each section of the Bloom's Taxonomy chart. In addition, only examples from Forum 1 and Forum 8 are provided in this list.

Forum 1: Introduce yourself, share, and plan

Analyze

When you see a questionable "fact" being shared on FaceBook or another social media site or in person, examine how you react. Do you research it? Do you share it without checking it out? Why?

Based on our readings this week, summarize in your own words your understanding of what it means to develop information literacy?

What impact can false information have in digital information distribution? Share an example real or hypothetical and describe the implications.

As described in Chapter 4 of our required reading this week (Information skills the personal age), "Everyone will have some major event in their life that requires investigation." Examine a time you have had to use digital information literacy to investigate something. What did you learn from this experience? What do you wish you had known or done differently looking back on it now?

Synthesise

Identify a mentor or role model in your life who has impacted your education and or career choice. What skills make this person a strong role model or mentor? How can you take this positive model for your own success as a student?

Explain a brief plan as to how you will manage your time in this course. How will you divide and conquer your tasks to complete upcoming assignments?

One of our videos this week discussed knowing how to find information we need. What does it mean to you to learn how to learn? Has this changed for you when you reflect on your learning in high school?

Imagine what your life would be like without Google or any search engine. Share three or four areas of impact this would have on you. "

Evaluation

Why is this important when considering real life applications and consequences?

After completing this week's readings and lesson, choose the single most important or surprising thing that you learned. Why is this important or surprising?

How can you use the information from this week's readings outside of school in a personal or professional environment?

What were your initial expectations of the course before you read the syllabus and the Week 1 requirements? How have your expectations changed?

Knowledge

List three new ideas or takeaways from the videos and/or reading material this week. How are these ideas useful for you?

From the video in this week's Lesson, "5 Components of Information Literacy," what are the 5 components?

Can you please list the three main places you get your information from?

Who can you turn to for support when you have questions in this class?

Comprehension

What are some questions you may have about your topic? What question do you want answered the most? Why?

How do you establish the criteria you use to evaluate credibility and truth in digital information?

What expectations do you have for yourself as a college student? How do you plan to overcome challenges you foresee?

What characteristics and skills do you possess that will help you be a successful college student at XYZ University?

Application

How do you define information literacy? Why do you believe this skill is important to your future role as a student?

How can the use of the XYZ University Online Library contribute to scholarly research practices?

Do you have similar concerns to those presented in this week's forum video? What can you do to overcome them?

Based on your previous experiences with finding and evaluating information, how do you plan to change your approach in order to locate and evaluate information clearly in the academic setting? In the workplace? In your personal life? (Choose one when asking a student.)

Week 8 forum: sharing presentations

Analyze

As you reviewed your classmate's presentations, what objective comparisons can you make between yours and theirs? Find a classmate's presentation that you particularly liked. What did they include in theirs that you would consider making a part of your future work?

What peer critique strategy did you find most useful and why?

Synthesis

Knowing what you know now, if you were to start this task over from scratch, how would you reorganize your approach to the task?

What alternative assignment might you suggest for this class? Why?

Your presentation was an analysis of your future career. How could an interviewer verify the information that you presented in your project? What aspect of the project could you make more concise for the reader?

Evaluation

What do you think about the idea of creating a multi-media project as an academic assignment as opposed to providing your findings in a traditional research essay format?

What are the pros and cons to both?

What aspect of the presentation creation process did you learn the most from and how will this impact your approach to similar projects in the future?

Will you continue to use the Big Six question model in research? Why or why not?

Have your degree or career plans changed as a result of what you learned in the research and creation of your presentation?

Knowledge

When you were researching for your topic, where did you locate your most useful sources?

You will need to peer review others' work as you progress on this journey. What are your apprehensions about this process?

Comprehension

In researching and creating your presentation, did you learn more about the topic you chose or how to create an effective multi-media presentation? In what ways do you feel like you learned the most?

Application

(None)

Week 8 forum 2: Reflection

Analyze

What concepts, were not covered in this course, which you recommend for future courses? Why do you believe these concepts to be important?

How will digital and information literacy change in the future? What are some expectations you have for future technology changes?

How does this online experience compare with a previous training course, other online experience, or face-to-face classroom experience you've had?

Having already taken other online courses how would you say this online experience compared with previous training courses, other online experience, or face-to-face classroom experience you have had?

Synthesis

Since an effective student possesses strong information literacy skills, what are some actions you will take to continue to be an effective student in regards to research and acquiring new knowledge?

Share something you learned from a peer or peers that has either changed how you think about something or a practice you have adopted into your own learning practices. Why is this significant for you?

What misconceptions did you have about being a college student at the start of the course you have since realized? What helped to clarify your understanding?

How has your perception of information literacy and your abilities in that regard changed since the start of the course?

Evaluation

What did you learn from this course that you can use again in your career field or in other college classes?

Looking back over your performance over the last 8 weeks, what would you do differently next time?

What information sources (websites, readings, etc.) did you find most useful in this class? Explain.

What criteria would you use to assess research material in future classes?

Knowledge

How has COLL100 prepared you for what is to come in your academic program?

What are three new concepts you learned as a result of this class, and how will you apply them to your education and career path?

When do you share your new learning with your co-workers, fellow students, or management staff? If so, what are their responses?

What course would you choose for your next class? Why?

Comprehension

If you were to explain to a friend what this course was about, how would you describe the course?

If you have future questions about research and information literacy, where can you find the correct information, and how will you continue to seek for new knowledge?

What are some of the ethical and effective learning practices which you have learned from this course?

How will earning a college degree from an accredited university enhance your value where you currently work and/or in the overall job market?

Application

How can you improve upon the concepts from the course that you found challenging to strengthen your information literacy?

How do you think you may react in the future to information on social media (or in person) that doesn't fit the concepts from this class but are being presented as truth?

How you will apply the knowledge from this course in your field of study?

How will you use the knowledge from this course in your daily work and life situations?

Classroom Assessment Techniques (CATs)

I post Classroom Assessment Techniques (CATs) as a model of best instructional practices when working with teacher candidates, future leaders, and change-agents to show them how they might work with their own learners using higher cognitive techniques. When I'm working with non-teacher candidates and 1st year learners, I post these strategies AND explain the learning process to both groups and types of learners. It's always important to explain why we do what we do and how the learning process works to ALL learners.

Classroom Assessment Techniques (CATs) Week 1

I. Assessing prior knowledge, recall, and understanding

Week 1: Empty Outlines:

In a limited amount of time, please complete an empty or partially completed outline of an in-class presentation or homework assignment. Post your response in this thread.

Classroom Assessment Techniques (CATs) Week 2

I. Assessing prior knowledge, recall, and understanding

Week 2: Minute paper:

1. What was the most important thing you learned in this module and how might you apply this new knowledge in your classroom with your content?
2. In addition, what important question remains unanswered? Post your response in this thread.

Classroom Assessment Techniques (CATs) Week 3

I. Assessing Prior Knowledge, Recall, and Understanding

Week 3: Muddiest Point:

In your view, what is the muddiest point in this week's module for you and how might you develop your knowledge and/or skill set in this area? Post your response in this thread.

Classroom Assessment Techniques (CATs) Week 4

II. Assessing Skill in analysis and Critical Thinking

Week 4: Pro and Con Grid:

List pros/cons, costs/benefits, advantages/disadvantages of an issue, question, or value of competing claims based on the course materials thus far. Post your response in this thread.

Classroom Assessment Techniques (CATs) Week 5

II. Assessing Skill in analysis and Critical Thinking

Week 5: Analytic Memo:

Based on the course materials thus far, write a one- or two-page analysis of a specific problem or issue to help inform a decision-maker. Post your response in this thread.

Classroom Assessment Techniques (CATs) Week 6

VI. Assessing Students' Awareness of Their Attitudes and Values

Week 6: Course-related Self-Confidence Surveys:

Please write a summary indicating your level of confidence in mastering the course materials thus far. Post your response in this thread.

Classroom Assessment Techniques (CATs) Week 7

VII. Assessing Students' Self-Awareness as Learners

Week 7: Focused Autobiographical Sketches:

Write a brief description of a successful learning experience you have had relevant to the course material. Post your response in this thread.

Classroom Assessment Techniques (CATs) Week 8

X. Assessing Learner Reactions to Class Activities, Assignments, and Materials

Week 8: RSQC2 (Recall, Summarize, Question, Connect, and Comment):

Write brief statements that recall, summarize, question, connect, and comment on meaningful points from your previous class.

My mentorship experiences

Now let's talk about my experiences with faculty peers and management during the XYZ University mentorship. That wasn't what I expected either! Anyone who has worked in education long enough knows new training, mentorships, coaching, required professional development, and the like can be grueling, time consuming, challenging, and not always a fun experience. Just being honest. Some may say, "I love training, coaching, mentorship, and new learning opportunities." But, they probably aren't telling you the truth. Most often, new training is a challenge and a time management issue as well. In this particular case, I was asked if I wanted to volunteer for the mentorship. I don't know why I said yes, but I did.

The faculty peers and the management coach I was assigned to didn't bully, micromanage, or drive me crazy. It was a great experience and I was able to pop into their classrooms and see how they operate. I was able to stay autonomous, never bullied, rushed, challenged in a negative manner, or treated in a master / slave type of manner. I have to say not only did I learn new skills, but it wasn't grueling, annoying, or frustrating.

Everyone in my group was helpful, kind, respectful, generous, did I say generous…let me say that again…generous with their time, tools, ideas, techniques, and strategies. The process of learning was one of *watch what the others do in their classrooms*, ask questions, and *borrow their tools* type of environment. This wasn't a top-down, do-as-I-say, dictatorship type of learning / training model. Nor was it a jump through the hoops, get this over with, click through the module links to the finish line type of mentorship either. I was assigned a typically College 100 class and learned the new strategies as I taught. Having the ability to pop into other classrooms using the new techniques was a great visual resource and learning tool.

Furthermore, I didn't have to create new questioning responses to each student as I always did. We were given a bank of questions pre-designed for College 100. In addition, I didn't have to create new announcements because all the announcements were preloaded as well. Furthermore, I had access to a bank of tools, resources, and videos I could post in my classroom and I didn't have to create new learning materials. I am used to creating new learning materials, technology components, videos, and resources, but it was nice to see and use what others created. My time was "freed-up" to actually engage in deeper, more meaningful conversations (and volleys) with my learners. The overall experience was easy, informative, and super cool and I don't think I'll ever have to second guess volunteering for new training at XYZ University again.

Finally, the skills I learned are transferable to every university I work for and with every level of learner as well. Now that's cool! I may never lose the endless check-lists and to-do's in this line of work, but I can add more personalized conversions in all my interactions with my learners.

Remembering our students on the other end of our computer screens is the most important factor and often times that's easy to forget when we are working through our administrator pile-on duties.

The XYZ University mentorship process and change initiative take-aways include the following:

1. Develop interactive, intuitive, technology-based curriculum.
2. Standardize administrative tasks, announcements, rubrics, and questions bank for discussion threads by week.
3. Minimize instructor pile-on tasks that may be meaningless and do not help to retain students.
4. Add a menu of technology deliverables.
5. Create well-directed, engaging, community-building conversations in the discussion threads.
6. Incorporate personalized instructional best practices.
7. Incorporate differentiated instructional best practices.
8. Develop metacognitive faculty training that enables faculty proficiency in a timely, easy-to-use, easy-to-share, unencumbered, non-threatening environment.

I forgot to mention…the training took place within two classes I was teaching at the time. I didn't have to enroll in an extra faculty training module in addition to the classes I was teaching that term. That saved me a TON of time with fewer annoyances. That method not only saved me a great deal of time, but I was getting paid to teach while I learned new skills. In addition, I applied what I was learning directly in the classes I was teaching at the time. I met with faculty peers and management as needed via remote conferencing and email. That was another time saver as well. I was able to jump in and out of my peer group's classrooms and see what they were doing and how they did it. Furthermore, I was able to use any of the resources they posted in their classrooms such as videos, links, materials, etc. The sharing aspect was super cool and I really enjoyed the opportunity to check out other teacher's classrooms while they were teaching. All these aspects made the mentorship process beneficial, applicable, easy-to-use, and easy-to-apply in my classrooms immediately.

Conclusion

In addition to sharing the training I talked about during the XYZ University mentorship, I also added many of my own instructional strategies that I use in my classrooms every day. I hope readers found the various strategies, techniques, methods, theories, and ideas presented helpful and useful. I use many, many instructional methods in my own teaching style and I also teach what I know to others. In addition to teaching 1st year learners for XYZ University, I also teach others how to become educators, managers, trainers, change-agents, and leaders in their communities. My educational journey is a model for others and I do my best to help people become autonomous, independent, life-long learners. Part of doing that involves teaching people *how* they learn and techniques they can use to foster their own growth as well as the growth of others.

Results

Student Comments from XYZ University
(The Best Part!)

These student comments were placed in the grade book for me after they uploaded the final presentation. I taught two classes that term and below are all the comments students gave me at the end of the eight week course. Wow! So cool! When people ask me how do I know what I'm doing works…this is how I know. I also know because students contact me and tell me they have enrolled in advanced degrees and I was their inspiration. Before meeting me, they never considered moving forward with advanced degrees. That's super cool too! Another suggestion I have for educators is to keep a document with every nice comment you receive from your learners over the years. When you've had a tough day or administration isn't appreciating you…open that document. Mine is well over 100 pages now and I started doing this in 2009. I should have started doing this when I began teaching online in 2006. Trust me, you won't regret it!

7/23/2017:

> It feels good to be back in school and graduating from high school so many years ago and just returning to a class room. Over all I have learned a lot taking this class, from how to properly do a research to verifying how credible the information researched is and the sources of the information. As for my final presentation, I won't say I am fully pleased with all the work I have done, but I did well base on my circumstances. I tried as much as possible to use the BIG6 method while doing this presentation but I must admit I am not as good at it as I would want to be. It seems to be a very good method as if u follow each step it will make putting your presentation together much easier. Finding scholarly information using the APSU Library on my presentation was not as easy as I thought it would have been. I used Microsoft PowerPoint for my final presentation, this is a program I have not used since high school so it took me some time getting used to it. In the end I added pictures, a video, and animations to my slides to keep my audience focused.

7/23/2017:

> Dr. Portugal,
>
> The Big 6 model was extremely crucial to the completion of my presentation. The model broke down the research project into appropriate steps, which made it easy to follow. Overall, the model flowed well and each step built upon the next. What I liked most about the Big 6, is that it helped me stay organized and retain relevant information for this project. Additionally, the model introduced me to new methods, tools, and resources that were extremely useful. However, for me the most difficult part was experimenting with a tool I wasn't familiar with (Prezi). At first it took time to get familiar with all the features and utilize them as best possible. In the end, the overall project was successful and I was able to utilize everything provided to complete the presentation.

7/23/2017:

> I've learned a lot of things from the presentation. I learned that I need a clear understanding of physics and math. I learned how to do the research process of finding true information about what I need especially my career path. I need to work on my organizing skills and my notes. I need better applications just specifically for school.

7/22/2017:

I think this presentation gave me a lot of new ways to present information. I've never made a slideshow before, so it was actually challenging and fun at the same time. I hope it comes across well enough, but nonetheless I had fun with it in the end. It took a lot of going over it to get it right, and to make sure I adhered to all the Big 6 Model's rules. These helped me a lot in order to make sure I wasn't leaving any important information out. Thank you!

7/22/2017:

Overall, I feel confident on the result of my career interest project, the last few weeks I have been working hard on adding all the bells and whistles and feel it keeps my audience interested throughout the presentation. I am glad I started working on this presentation a little early because I didn't' realize how much information I had and how in depth I should go on each topic. The Big 6 model helped me through this project by determining what my main goal and concern was. It helped me gather what the most relevant and important information is and configure it all onto each slide. Before working on this project, I was a little overwhelmed with where to start, so then I resulted to the Big 6 model to help me out. I pinpointed what my career interest was in the beginning of classes but I did not know exactly where to dive in. The model allowed me to efficiently problem solve and integrate all my information I had gathered from my sources and applied it into my presentation.

7/23/2017:

The process of the final project was very easy. And doing the presentation went well since we had already been working on this over the past 7 week. All of the information was already embedding into my mind.

7/23/2017:

The creation of this presentation was a learning experience. Prior to beginning the presentation, I had limited experience in PowerPoint and learned how to insert videos and animation into the slides. I started out being way too in depth and had to tone it back for the audience to be able to get a proper entry level grasp of my career field without having any background knowledge of it. The big 6 method I used to create the presentation was helpful because it gave me a good outline of how to complete it. It helped me find information that was appropriate for my topic, understand the tasks involved with creating each slide, categorize and synthesize the information that I ultimately decided to use and I went through a review process that involved myself and a peer. I have uploaded my presentation to YouTube because that was the only way that I could share it due to the file size being so large. I have posted the link below. I hope you enjoy my presentation.

7/23/2017:

I used PowerPoint for my presentation. I have not used the program in a while so a lot is new and different, but overall I think I was able to display my presentation well and clearly. It shows the basics as to what it entails to become a Marshal to the duties and responsibilities and breaks down the chain of command and the different divisions and offices within the Marshals Service.

7/23/2017:

This project was a little more difficult than expected. The instruction from Dr. Portugal, the forums, and other course material did prepare me for this final assignment. What I found to be difficult was the topic I selected and the subject matter. I chose a topic that I

have been working for 28 years of my life. However, experienced in the intelligence field, it was very difficult to put into words that were not sensitive in nature. Providing narration to my presentation was also somewhat challenging and required many takes to ensure the product was genuine. All in all, this course and the process of completing the presentation has surely prepared me for future course as I continue to further my education.

7/24/2017:

My finished product has created more opportunity for future assignments. Putting the information together into a presentation leads me to believe that I will be able to accomplish tasks such as this in the future, with a better ability to fully input the knowledge I have learned. Informing others on what I have learned about my own personal career interest is important because it opens the minds of many who strive to work in the same fields. The process of completing the presentation has created certain barriers in the aspect of adding or subtracting information. The most important part of the Big Six process, I would say, is researching and picking out what is relevant. In the future, I will use this same process to help me with presenting important topics and improve on these new set of skills.

7/22/2017:

In regards to the big 6 process, it puts into words, what I have routinely done for many research topics. You must first have an idea, do the research, organize and store your information, create the product and review and reflect upon your final product. For this particular project, I found it fairly easy to decide what topic to pick, as I am pursuing a degree in my current field of work. I am used to using school libraries, so it was fairly easy to find sources, including scholarly ones. I have had to cite work before, as well as create Power Points in the past. I wanted to make it as easy to comprehend, for someone who is not familiar with Emergency Management, and I believe I have accomplished that. All in all I found the process useful and easy enough to follow.

7/24/2017:

For my presentation I used PP and it was extremely easy to use because I've used it before. It took all week to finish my presentation and I review the grading rubric to make sure I meet all the expectations. I additionally researched one more credible source in the XYZ University library to present in my PP. Creating my presentation was fairly easy since bulk of research was done through my first 6 weeks of class. The evaluation of my resources is very good because I'm able to retrieve from past scholarly sources. I made my presentation as creative and unbarring as possible.

7/23/2017:

I believe that my final presentation came out pretty well. The was not a lot of public information for that was much in depth about Special Agent. The big 6 model helped me eliminate unnecessary information and get the important information. I browsed dozens of sites and eliminated those that were unreliable. The most difficult thing I had to find was the FBI salary chart that was accurate .I believe that the viewers of my presentation would find it very informative.

7/25/2017:

With the finished presentation, thinking back I would have never imagined completing it. The reason being is since I've been in a time crunch it has made it more difficult to accomplish the assignment with a lot going on. It also has been a challenge since it is the first time I actually created a presentation in over 4 years. At first, I did not know how to

properly cite and reference but in the process, I actually learned to, in accordance with the APA citation format. Which was one of the research steps towards gathering the credible sources I needed to have the efficient information listed and give credit where it's due. Using the BIG 6 Model process taught me the importance of plagiarism and ways to avoid it, also how to properly read the scholarly material. I am honestly glad I took this course, it gave me the knowledge of properly researching efficiently, citing the information correctly and also to narrowing down my findings. In all, I have become organized when collecting my research data. It has been a pleasure taking this class and soon hope to take another in AMU. With all the lessons learned from the mistakes I've made, I will improve and use it towards the courses I will be taking in the future. Thank you.

7/23/2017:

My presentation was a very challenging power point creation. This overall was a very rewarding experience and am very pleased with my presentation. I learned a lot about technology and the benefits of living in a modern world with modern technology. I feel like I still have a lot to learn before I chose what direction I want to take my life in. Thank you so much for this opportunity.

7/23/2017:

THE BIG 6 APPROACH

After learning the cyclic nature of research in this class, I made it a priority to frequently refer back to the week 7 assignment tab so as to ensure my project meets all requirements ("task definition"). This also helped me to formulate solid queries ("information-seeking strategies") in my search through databases and the open web as well as question the authenticity of my sources and their possible contribution to my presentation ("location and access"). When overwhelmed with information, I simply referred back to my outline so that I could regroup and refocus, which better helped me parse data; any information that directly answered the questions in my outline or supported the bullets was immediately noted, stored in an organized manner and added to my resource page ("use of information" and "synthesis"). Because my notes were organized in accordance to my outline, it made the process of building the presentation very easy. However, my initial tool was not as user-friendly as I remembered. So I took a chance and transferred what I had to a tool I'd never used before, but thought was worth trying. It was a life-saver, to say the least. As organized as I was through the research, collection and analysis of data, I don't think my presentation would have been as effective had I stuck to the original platform. It also helped to have a second set of eyes peer in from time-to-time ("Evaluation").

I would gladly choose Prezi again. ☺

7/23/2017:

I could get the audio for the narrations or the video on my last slide to play. The research I was able to do covered everything I had wanted. It made organizing and using the information in my presentation very easy. I found myself going back and looking at my outline assignment and bibliography assignment often when making my presentation. As far as the "Big 6 Model", thought I had used it pretty proficiently over the time of the course slowly building towards my final presentation. I started with a broad sense of where I wanted to go, slowly refining the ideas I wanted to cover as I did my research. After each step I evaluated where I was and made notes to go back and look what I had did. My final evaluation of project as a whole, was that I did okay, given my current situation I'd have liked to have done more. After refining some of the points I felt I had

made my presentation kind of short at the same time I didn't want to over kill thought process.

7/23/2017:

I am ultimately pretty satisfied with my presentation. I found Apple's Keynote app relatively easy to use for creating a full multimedia presentation, and I was able to export my presentation as a movie file for maximum interoperability. As far as the research process goes, in retrospect my biggest problem was at the very beginning in Task Definition. I wasn't entirely clear on the assignment, so I included way too much stuff in my outline. I collected information to answer both the question I wanted to focus on and a bunch of other stuff that I thought I might be required to include, which forced me to revise my outline as I was starting to assemble the presentation. Of course, too much content is a way better problem to have than the opposite.

7/27/2017:

I initially began with the idea of using PowerPoint for my project because I am comfortable with the program. I then decide to use Prezi, but in the process discovered it did not have voice over or additional audio for music. I then ran into to the problem of trying to use my government computer with firewalls that didn't allow me to work on my project. I went back through the examples you provided for presentations and identified Adobe Spark as the right program. I do briefings on a regular basis in front of large audiences but I found very difficult to narrate my own project. I did find Adobe Spark to be very user friendly and compatible with my government laptop. I have attached the link because the file is to large.

7/23/2017:

Throughout the entire process of the presentation I have learned quite a bit. I was not very knowledgeable about digital literacy before taking this course, except for knowing some methods of determining whether a source was credible or not. I really enjoyed the fact that in this course it teaches you proper citation techniques, research tips, knowing whether or not a source is credible, and how to use new technologies that I have not used before in research articles of a scholarly nature. I must say that the overall layout of the class helped me in my efforts to complete this project. I enjoyed how it started out with research basics and ended with how to synthesize all of the information that I've researched in order to put it into the presentation. The actual process of putting the presentation together was not difficult because of the fact I had all of the research and multimedia tools that I was planning to use so I simply had to plug it into a PowerPoint. While initially nervous about the narrating portion of the presentation, I found that it was quite self-explanatory and easy to use. Overall, the way that the course was presented and how it progressed from week to week made this final presentation a lot easier, and I will continue to take things I've learned throughout this process with me as I continue my academic career.

7/30/2017:

I was very pleased to share something I am so passionate about with my classmates. Many people do not know what occupational therapy is, let alone hippotherapy! Although I was not able to embed the video and had to share a link instead, the process of building this presentation was much simpler than those I had created in the past due to the preparation that I learned while in this class. The concept map helped to keep me on track, so that it was clear the subject matter I was addressing. Building the reference page before completing the paper, ensured my references were relevant and also eliminated the

possibility to plagiarism. I hope that I was able to impart knowledge that could maybe help someone that may have been touched by ASD.

7/30/2017:

For my presentation I used PP and it was extremely easy to use because I've used it before. It took all week to finish my presentation and I review the grading rubric to make sure I meet all the expectations. I additionally researched one more credible source in the XYZ University library to present in my PP. Creating my presentation was fairly easy since bulk of research was done through my first 6 weeks of class. The evaluation of my resources is very good because I'm able to retrieve from past scholarly sources. I made my presentation as creative and unbarring as possible.

References

Algozzini, L., Bessolo, K., Gabay, V., Voyles, S., & Batchelor, G. (2016, Fall). Applying a group coaching mentoring framework to shift organizational culture. *International Handbook of Academic Research and Teaching (IHART), 48*. 247-258.

Algozzini, L., Voyles, S., Batchelor, G., Bessoloand, K., & Gabay, V. (2016, December 16). Applying a group coaching and mentoring framework to shift organizational culture. Presented at IntellectBase.org Las Vegas, NV.

Antonietti, A., Colombo, B., & Di Nuzzo, C. (2015). Metacognition in Self-Regulated Multimedia Learning: Integrating Behavioural, Psychophysiological and Introspective Measures. *Learning, Media and Technology, 40*(2), 187-209.

Azevedo, R., Mudrick, N., Taub, M., & Wortha, F. (2017). Coupling between Metacognition and Emotions during STEM Learning with Advanced Learning Technologies: A Critical Analysis, Implications for Future Research, and Design of Learning Systems. *Teachers College Record, 119*(13)

Bloom, B.S. (Ed.). Engelhart, M.D., Furst, E.J., Hill, W.H., Krathwohl, D.R. (1956). Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain. New York: David McKay Co Inc.

Bloom's Taxonomy and the Different Levels of Questions. (n.d.). Retrieved from http://www.mandela.ac.za/cyberhunts/bloom.htm

Chekwa, E., McFadden, M., Divine, A., & Dorius, T. (2015). Metacognition: Transforming the Learning Experience. *Journal of Learning In Higher Education, 11*(1), 109-112.

Christensen, S. S., & Spackman, J. S. (2017). Dropout rates, student momentum, and course walls: A new tool for distance education designers. *Journal of Educators Online (JEO), 14*(2). Retrieved from https://www.thejeo.com/archive/2017_14_2/christensen_spackman

Clark, D. (2015, January 12). Bloom's Taxonomy of Learning Domains. Retrieved from http://www.nwlink.com/~donclark/hrd/bloom.html

Dalton, J. & Smith, D., (1986). Extending Children's Special Abilities: Strategies for primary classrooms (pp. 36-37).

Dickinson, A. (2017). Communicating with the online student: The impact of e-mail tone on student performance and teacher evaluations. *Journal of Educators Online (JEO), 14*(2). Retrieved from https://www.thejeo.com/archive/2017_14_2/dickinson

Efklides, A. (2017). Affect, Epistemic Emotions, Metacognition, and Self-Regulated Learning. *Teachers College Record, 119*(13).

EWTN.news (n.d.). How To Pray the Rosary. Retrieved from https://www.ewtn.com/Devotionals/prayers/rosary/how_to.htm

Forte, G., Schwandt, D., Swayze, S., Butler, J., & Ashcraft, M. (2016). Distance education in the U.S.: A paradox. *Turkish Online Journal of Distance Education-TOJDE, 17*(3), 16-30.

Gaševic, D., Kovanović, V., Joksimović, S., & Siemens, G. (2014). Where is research on
massive open online courses headed? A data analysis of the MOOC Research Initiative.
International Review of Research in Open & Distance Learning, 15(5). 134 176.

Huang, Y., & Chang, C. (2013). A Study of the Metacognition Performance in Online Inquiry Learning.
IADIS International Conference e-Learning. Retrieved from
http://files.eric.ed.gov/fulltext/ED562285.pdf

Kranzow, J. (2013). Faculty leadership in online education: Structuring courses to impact student
satisfaction and persistence. *Journal of Online Learning & Teaching, 9*(1), 131-139.

Laskey, M. L., & Hetzel, C. J. (2010). Self-Regulated Learning, Metacognition, and Soft Skills: The 21st
Century Learner. Retrieved from http://files.eric.ed.gov/fulltext/ED511589.pdf

Lee, S. C., Irving, K., Pape, S., & Owens, D. (2015). Teachers' Use of Interactive Technology to Enhance
Students' Metacognition: Awareness of Student Learning and Feedback. *Journal of Computers In
Mathematics And Science Teaching, 34*(2), 175-198.

Merriam, S., Baumgartner, L., & Caffarella, R. (2007). *Learning in Adulthood: A comprehensive guide*. San
Francisco: Jossey-Bass.

Millis, B. J., & IDEA, C. (2016). Using Metacognition to Promote Learning. IDEA Paper #63. Retrieved
from
https://www.ideaedu.org/Portals/0/Uploads/Documents/IDEA%20Papers/IDEA%20Papers/PaperI
DEA_63.pdf

Mytkowicz, P., Goss, D., & Steinberg, B. (2014). Assessing Metacognition as a Learning Outcome in a
Postsecondary Strategic Learning Course. *Journal of Postsecondary Education And Disability,
27*(1), 51-62.

Özcan, Z. Ç. (2016). The Relationship between Mathematical Problem-Solving Skills and Self-Regulated
Learning through Homework Behaviours, Motivation, and Metacognition. *International Journal of
Mathematical Education In Science And Technology, 47*(3), 408-420.

Portugal, L. M. (2014, October 14). Differentiated instruction. Retrieved from
http://prezi.com/rjmqnc4kqqpo/?utm_campaign=share&

Portugal, L. M. (2017, July). Educating type 2 diabetes adults about naturopathy, alternative medicine
benefits. *Diabetes Management, 7*(3). Retrieved from
http://www.openaccessjournals.com/articles/educating-type-2-diabetes-adults-about-naturopathy-
alternative-medicine-benefits-12094.html

Portugal, L. M. (2015a, June). Findings identifying how administrative leaders might recruit, select, train,
motivate, and support online faculty. *International Journal of Online Pedagogy and Course Design
(IJOPCD), 5*(4). DOI: 10.4018/IJOPCD.2015100103|.

Portugal, L. M. (2015b, August). Hiring, training, and supporting online faculty for higher student retention
efforts. *Journal of Instructional Research (JIR), 4.* Retrieved from
https://cirt.gcu.edu/jir/documents/2014_v3/volume_4_2015/jir2015portugalpdf

Portugal, L. M. (2014, December). Online faculty burn out, best practices, and student engagement
strategies. *International Journal of Instructional Technology and Distance Learning (ITDL),
11*(12). Retrieved from http://www.itdl.org/Journal/Dec_14/Dec14.pdf#page=35

Portugal, L. M. (2015c). *Successful online faculty principles and best practices: Identifiable criteria for
employment practices, hiring standards, training, and leadership decisions*. Scholars' Press is a
trademark of OmniScriptum GmbH & Co. KG. Saarbrücken, Germany.

Portugal, L. M. (2015d, Spring). Work ethic, characteristics, attributes, and traits of successful online
faculty. *Online Journal of Distance Learning Administration (OJDLA), 18*(1). Retrieved from
http://www.westga.edu/~distance/ojdla/spring181/portugal181.html

Portugal, L. M. (2014e, December). Online faculty burn out, best practices, and student engagement strategies. *International Journal of Instructional Technology and Distance Learning (ITDL), 11*(12). Retrieved from http://www.itdl.org/Journal/Dec_14/Dec14.pdf#page=35

Portugal, L. M. (2006f, Summer). Diversity leadership in higher education. *Advancing Women in Leadership Online Journal, 21.* Retrieved from http://www.advancingwomen.com/awl/summer2007/portugal.htm

Portugal, L. M. (2006g, Fall). Emerging leadership roles in distance education: Current state of affairs and forecasting future trends. *Online Journal of Distance Learning Administration (OJDLA), 9*(3). Retrieved from http://www.westga.edu/~distance/ojdla/fall93/portugal93.htm

Prytula, M. P. (2012). Teacher Metacognition within the Professional Learning Community. *International Education Studies, 5*(4), 112-121.

Rice, M. (2014). Ethical challenges of studying online learning curriculum. *Curriculum and Teaching Dialogue, 16*(1), 131-134.

Teachnology, Inc. (n.d.). Cooperative Learning Instruction Strategies. The Online Teacher Resource. Retrieved from http://www.teach-nology.com/currenttrends/cooperative_learning/

Teachnology, Inc. (n.d.). How Does the Brain Process Information? The Online Teacher Resource. Retrieved from http://www.teach-nology.com/teachers/methods/info_processing/

Teachnology, Inc. (n.d.). Instruction Models. The Online Teacher Resource. Retrieved from http://www.teach-nology.com/teachers/methods/models/

Teachnology, Inc. (n.d.). What is Inquiry Based Learning? The Online Teacher Resource. Retrieved from http://www.teach-nology.com/currenttrends/inquiry/

The Six Types of Socratic Questions. (n.d.). Retrieved from http://www.umich.edu/~elements/probsolv/strategy/cthinking.htm

Thomas, G. P., & Anderson, D. (2014). Changing the Metacognitive Orientation of a Classroom Environment to Enhance Students' Metacognition Regarding Chemistry Learning. *Learning Environments Research, 17*(1), 139-155.

Thompson, P., Vogler, J. S., & Xiu, Y. (2017). Strategic tooling: technology for constructing a community of inquiry. *Journal of Educators Online (JEO), 14*(2). Retrieved from https://www.thejeo.com/archive/archive/2017_142/thompson_vogler_xiupdf

Welch, A. G., Napoleon, L., Hill, B., & Roumell, E. (2014). Virtual Teaching Dispositions Scale (VTDS): A multi-dimensional instrument to assess teaching dispositions in virtual classrooms. *Journal of Online Learning & Teaching, 10*(3), 446-467.

Yilmaz, K. (2011). The cognitive perspective on learning: Its theoretical underpinnings and implications for classroom practices. *Clearing House: A Journal of Educational Strategies, Issues, and Ideas, 84*(5), 204-212.

Zepeda, C. D., Richey, J. E., Ronevich, P., & Nokes-Malach, T. J. (2015). Direct Instruction of Metacognition Benefits Adolescent Science Learning, Transfer, and Motivation: An In Vivo Study. *Journal of Educational Psychology, 107*(4), 954-970.

About the author

Dr. Lisa Marie Portugal holds a PhD in Leadership, a Master of Education in Health and Wellness, a Master of Arts in Education, and a Bachelor of Fine Arts. She is a personal and professional life coach, author, university professor, PhD chair, committee member, and a faculty supervisor / mentor to teacher candidates. She currently instructs coursework at the undergraduate, graduate, EdD, and PhD levels for various universities and abroad. She is a researcher, peer-reviewed scholar, educator, and has authored several books. Dr. Portugal is on the review board for various academic journals. Her expertise and research interests include health and wellness, cancer, diabetes, child and adult vaccines, Big Pharma prescription drugs, allopathic, naturopathic, homeopathic medicine, Traditional Chinese Medicine, GMO foods, pesticides, government over-reach legislation, student engagement and success, student retention, adult learning theory, adult, nontraditional, and at-risk learners, faculty retention, hiring practices, faculty burn-out, best practices in online learning, emerging technology in course design and instruction, online education, learning styles, diversity leadership, transformational leadership, and the Community of Inquiry Framework. She integrates theory into practice through conducting research in these areas.

Throughout her career as an educator and mentor, she has taught at 15 universities and abroad.

Dr. Portugal has written various books and multiple peer-reviewed articles. She continues to mentor others on how to reach their personal and professional goals, teach online coursework world-wide, research, write, and publish. She is published in peer-reviewed academic journals such as Diabetes Management, Academic Leadership the Online Journal, Advancing Women in Leadership Online Journal, Distance Learning Administration (OJDLA), Higher Education Perspectives, the Journal of Instructional Research (JIR), The International Journal of Instructional Technology and Distance Learning, and The International Journal of Online Pedagogy and Course Design (IJOPCD).

She is on the Review Board for: Open Learning: The Journal of Open and Distance Learning published by Routledge Taylor & Francis Group, The International Review of Research in Open and Distributed Learning (IRRODL) published by Athabasca University, The Annals of Medical and Health Sciences Research published by Enugu State NMA, The Clinical Investigation Journal published by Open Access Journals, Virology Research Journal published by Open Access Journals, Asian Journal of Plant Science & Research published by Open Access Journals, Journal of Diabetes & Metabolic Disorders published by Open Access Journals, European Journal of Experimental Biology published by Open Access Journals, Interventional Cardiology published by Open Access Journals, Advances in Applied Science Research published by Open Access Journals, Health Economics & Outcome Research published by Open Access Journals, European Journal of Experimental Biology published by Open Access Journals, Neuropsychiatry published by Open Access Journals, Journal of Food and Nutritional Disorders published by Open Access Journals, Diabetes Management published by Open Access Journals, SciTechnol, The Journal of Instructional Research (JIR) published by Grand Canyon University, The Journal of Education and Training Studies published by Redfame, and The World Journal of Educational Research (WJER) published by Scholink, Inc.

Email:

lisamarieportugal@msn.com

WikiEducator:

http://wikieducator.org/User:Dr_Lisa_Marie_Portugal

Website:

http://drlisamarieportugal.weebly.com

Doctoral students' use of technology to support group projects in online courses

Herbert R. Fiester, Jamie Workman, Tim D. Green, Meghan McBride, Maureen Redington
USA

Abstract

This article shares the results of a longitudinal study conducted of a doctoral-level curriculum and instruction class taught in a hybrid format at a Mid-Size Public Southern University. The purpose of this study was to determine which technologies doctoral students used to facilitate group projects in an online curriculum and instruction course, how the technologies were used, and their effectiveness in meeting student needs. From the data collected, the research team was able make determinations, as well as suggest implications for best practice.

Keywords: doctoral students, instructional technology, virtual teamwork

Introduction

In today's global, technology-driven society, educational institutions must constantly evolve in order to deliver instruction in a way that meets the ever-changing needs of students who may be geographically and demographically diverse. A variety of technologies exist that allow students to work collaboratively to complete project-based assignments online. Course management systems (CMS) such as Blackboard and D2L Brightspace (D2L) are designed to promote that collaboration. However, researchers have found that students tend to gravitate towards technologies that are familiar, rich, and synchronous (Albayrak & Yildirim, 2015; Karim & Heckman, 2005; Rowe, Bozalek, & Frantz, 2013; Wang, Woo, Quek, Yang, & Liu, M, 2012). Many of these technologies are not designed with a specific educational purpose in mind.

Specifically, in online and hybrid programs, technology use is critical for effective course completion. In many such programs, students are distant from the course instructor and each other. Given that, face-to-face collaboration may not be an option, students must make decisions on how they can best complete work both individually and in teams. Regardless of technology used, student learning must continue to be the primary focus.

Virtual teams have become a common way to promote student learning and project completion in online courses (Cheung & Vogel, 2013; Du, Ge, & Xu, 2015; Kam & Katerattanakul, 2014; Yang, Cho, Mathew & Worth, S, 2011). Given this practice, the research team began to question which technologies students were using and how were they being used. The purpose of this study was to determine which technologies doctoral students used to facilitate group projects in an online curriculum-and-instruction course, how the technologies were used, and their effectiveness in meeting student needs.

Definition of terms

The following terms are used throughout this article and are important to overall understanding.

Cloud-based storage: cloud-based storage is defined as a "cloud computing model in which data is stored on remote servers accessed from the internet, or 'cloud'. It is maintained, operated and managed by a cloud storage service provider on storage servers that are built on virtualization

techniques" (What is cloud storage?, n.d., para. 1). Google Drive and Dropbox were cloud-based storage programs used by participants in this study.

Course management systems (CMS): a collection of software tools that provide an online environment for course interactions. A CMS includes a variety of online tools and environments, such as an area for class materials, course syllabi and handouts, an area for students to submit assignments, a threaded discussion board that allows for asynchronous communication among students, and an integrated email system, among others (McDaniel, n.d.). The researched university uses D2L Brightspace as its CMS.

Social media: websites and applications that allow users to create content and share information or to engage in social networking. Participants in this study used the social media platform Facebook for virtual teamwork.

Video conference: software or applications used for video conferencing. In this study, participants used Skype and Google Hangouts for video conferencing.

Virtual classroom: a virtual classroom is defined as "an online classroom that allows participants to communicate with one another, view presentations or videos, interact with other participants, and engage with resources in work groups" (Ferriman, 2017, para. 4). Wimba and Adobe Connect were the virtual classrooms utilized in this study.

Review of literature

Technology for virtual teams

Higher education institutions typically employ CMS as repositories for work and places for interaction, which can either supplement instruction for a face-to-face course or be the vehicle through which all instruction is delivered, as is the case with fully online courses. Although higher education institutions provide students with a platform through which they can complete collaborative assignments, these are not always the first or only choice for students who work in virtual teams. Instead, students may turn to social media networks, such as Facebook and Twitter, instead of the university CMS because they are more accustomed to the interfaces and interactive capabilities from regular, sustained use of these systems (Albayrak & Yildirim, 2015). Although the potential benefits of using a site like Facebook for collaboration are many, researchers have uncovered a number of student-identified limitations, including privacy concerns, the lack of threaded discussion capabilities, and the inability to upload certain types of files (Wang, Woo, Quek, Yang, & Liu, 2012).

College students also show a preference for using technologies that provide audio-visual capabilities, especially those that are familiar to them from regular use. Ladyshewsky and Pettapiece (2015) found that students preferred using Skype to work in virtual teams over BlackBoard Collaborate because of Skypes ability to allow them to communicate in real time and its simplicity of use. While BlackBoard Collaborate did provide audio-visual technology, students were displeased with the technical difficulties they encountered in using it (Ladyshewsky & Pettapiece, 2015).

In addition to choosing technology for its familiarity and ease of use, students also select technology that allows for synchronous communication and real-time changes. These include cloud-based technologies, such as Google Drive and virtual worlds (Cheung & Vogel, 2013; Kam & Katerattanakul, 2014; Rowe, Bozalek, & Frantz, 2013). Cheung and Vogel (2013) found that students opted to use Google Drive because it was easy to use, compatible with their project goals, and allowed for safe collaboration, although some students only used it because their peers influenced them to do so. Although their study investigated the effects of using Google Drive rather than students' choice of technology, Rowe, Bozalek, and Frantz's (2013) findings echo that

of Cheung and Vogel (2013) in that students found Google Drive to be a safe, effective, and useful way to complete virtual team projects. Kam and Katterattanakul (2014) reached a similar conclusion when they found that the high synchronicity afforded by cloud-based technologies promoted the quality and richness of team-based online projects.

Consumerization

It should come as no surprise that students gravitate towards technologies that feel comfortable (Slattery, 2013). Although not a new trend, this type of behavior has implications for the way institutions of higher education should approach how students use technology to interact with the products and services they provide (Fernanedes, 2014; Kolko, 2014). Although the concept of consumerization has been around for decades, it was only in the early 2000s that experts recognized the increase in use of personally owned hardware and software for professional purposes (Moschella, Neal, Taylor, & Opperman, 2004). This trend, known as the consumerization of IT, has significantly changed the way the IT functions of organizations manage equipment, processes, and policies (Harris, Ives, & Junglas, 2012). With employees of organizations now driving many IT department decisions, alternative ways to be productive have increased (Slattery, 2013). Consumerization is also impacting institutions of higher education (Fernandes, 2014, Kolko, 2014), as the findings in this current study demonstrate.

In fact, many higher education leaders are advocating for changes based on consumerization (Fernandes, 2014; Kolko, 2014). With more choices than ever, students are demanding a voice in determining the characteristics of the learning product that they consume (Fernandes, 2014; Kolko, 2014). To that end, higher education institutions must have systems in place to capture that voice (Fernandes, 2014; Kolko, 2014). Digitization of the entire student experience can decrease costs and increase quality by bringing faster, customized solutions to higher education institutions and their consumers when marketing, retention, student life, and academics are all connected (Fernandes, 2014). Consumers are driving these changes and technology can effectively support them.

Effectiveness of technology use for virtual teams

Despite the perceived effectiveness for using technology in higher education, educators must be aware of the limitations, especially that seemingly expert everyday use does not always translate into effective educational use. Ladyshewsky and Pettapiece (2015) indicated that students, despite being accustomed to technology use in their day-to-day communications, are not necessarily able to use it effectively in learning experiences, which means that instructors must provide guided support to students in the use of technology for educational purposes. These findings echo those of Rowe, Bozalek, and Frantz (2013) who suggested that although using collaborative online learning tools is effective, students still need guidance from their instructors for maximum effectiveness. In addition, Kam and Katerattanakul's (2014) findings support the effectiveness of collaborative learning in team-based projects. Other research supports the evolution of tools based on the length of time for group projects; namely, that groups working for a long period of time tended to focus on more of a combination of face-to-face and web-based with a preference of in-person communications (Karim & Heckman, 2005).

Methodology

Data collection

Data collection was incorporated into a doctoral-level curriculum and instruction class taught in a hybrid format at a Mid-Size Public Southern University. The course, *Curriculum Design,*

Implementation, and Evaluation, is a required course for students. The data was collected over seven consecutive semesters, beginning summer 2014 and concluding summer 2016.

As part of the course requirements, students worked in assigned groups on curriculum planning projects that focused on K-12 academics in the state of Georgia. The project was divided into multiple parts, each requiring virtual team activities. The instructor selected the teams and students rotated for each section of the project based on feedback from the students and the insight of the instructor.

Near completion of the course, students received an email from the instructor with a questionnaire survey that inquired about student technology use. Students were given extra credit for providing their responses. In total, 115 students received the email, and 74 self-selected to participate in the in the survey. The questionnaire included the following:

> The name of the technology;
>
> How you used it;
>
> Discuss its effectiveness, was it a good experience, why or why not?
> Would you use it again, why or why not?

Research questions

The questionnaire survey sought to attain information that would enable the researchers to answer the following research questions:

- ▪ Which technologies do students on virtual teams in a graduate-level online course use to complete the project-based assignments?

- ▪ Which technologies are perceived to be more effective and less effective?

- ▪ How are technologies used by virtual teams to complete projects in a graduate-level, online course?
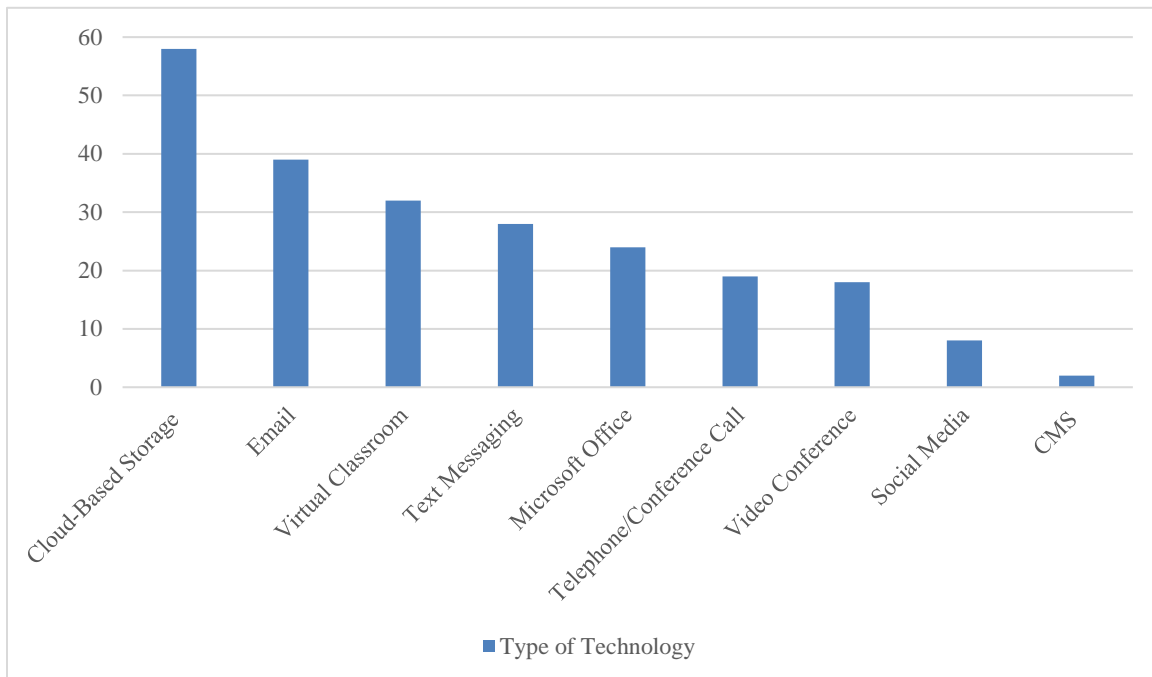
Results

Upon the completion of data collection, the research team reviewed questionnaire responses and then coded those responses. The team examined information provided for each of the research questions and determined the frequency of utilized technologies and how those technologies were being used. Additionally, the research team explored student perceptions of the technology effectiveness and determined whether the technology aided or impeded student learning.

What technologies were used?

Each of the responses was coded to include the technologies used. Most participants stated that they used more than one technology. There were 26 technologies identified in the participants' responses. These have been grouped into nine categories. On average, 3.26 technologies were reported per participant.

The most frequently reported technologies used were cloud-based storage (58 respondents), email (39 respondents), and virtual classrooms (32 respondents). One participant noted the effectiveness of a virtual classroom, "It is a valuable resource in hybrid and distant learning programs where student interaction [is] limited." Conversely, another participant noted that in order to see the shared screen feature in the virtual classroom, she would have to repeatedly reenter the chat room. Cloud-based storage was favored among students because as many noted, the real-time ability to edit documents without having numerous drafts of the document. Participants noted the convenience of using texting as a form of communication because as one participant stated, "It helped us stress to each other about progress or the lack thereof in a safe way/environment."

Table 1
Frequency of technologies used

How were technologies used?

Technologies were coded into four different categories, procedural planning, document editing, group conceptualization, and document sharing. Many technologies fit into more than one category. After reviewing all the participants' responses, several methods to code these responses were considered. However, the majority of responses seemed to fit into the four categories. For the purpose of coding these categories were defined in the following manner:

Procedural Planning: Group communication to strategize about aspects of the project. This included discussion of the next chat session or who would complete a certain task.
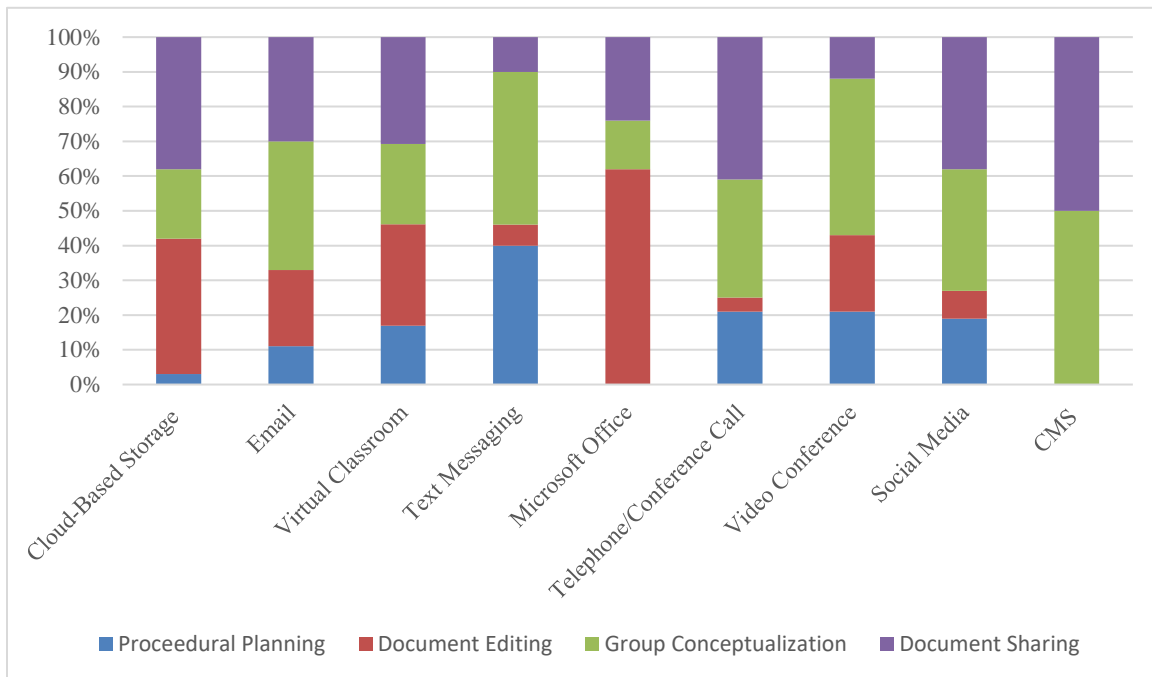
Document Editing: The alternation of the project or documents that virtual teams collaborate on together. Editing amongst virtual team members to complete a project was completed in a variety of ways.

Group Conceptualization: Participants' notations of interacting with group members to accomplish a task. This included discussion of ideas for a project, initial contact between group members, or methods of communication between members.

Document Sharing: Sending documents or content between group members such as drafts of projects, the use of synchronous technology to view updates to documents, or to discuss aspects of the projects. For example, participants who used email frequently shared updates to the projects with other members of the virtual team. Another example is the use of a virtual classroom and the interface's ability to view others' screens in order to convey a message. As one participant stated, "We could see our document while we talked." By sharing information, teams were able to interact with each other in an effective manner.

The table below represents how technologies were used.

Table 2
Use of technologies

Procedural planning

Text messaging (20 respondents), cloud-based storage (16 respondents), and virtual classrooms (8 respondents) were the top three responses by participant for planning. As one respondent noted, text messaging fostered quick responses from other team members but lacked effectiveness for lengthy communication. More specifically, one educator noted the effectiveness of texting and stated, "Text messaging was an effective tool to use during the day as we were working. It did not disrupt the classroom, and it was almost instantaneous.

Document editing

The top three technologies used for document editing were cloud-based storage (38 respondents), email (22 respondents) and virtual classrooms (11 respondents). The two synchronous technologies, cloud-based storage and virtual classrooms, allowed teams to edit documents and projects in a meaningful manner. The ability to make automatic and instantaneous changes to projects was a positive aspect noted by participants. Additionally, one participant noted that cloud-based storage allowed for the use of one document rather than cutting and pasting as often. This allowed for a more effective group experience. While most respondents thought cloud-based storage was effective one student noted, "…since we had trouble with format and pagination, we usually saved each revision as a Microsoft Word document, then printed it out to see the format." While cloud-based storage allows for synchronous editing, formatting, critical to most documents submitted at a doctoral level, it lacks precision in formatting.

Group conceptualization

The top three forms of group conceptualization as noted by the participants included virtual classrooms (30 respondents), cloud-based storage (22 respondents), and text messaging (19 respondents). According to one of the participants in the study, virtual classrooms allowed the group to divide work up amongst its members. Reported overwhelmingly by the participants, virtual classrooms allowed for the teams to communicate effectively for major components of the

project. For example, one participant noted, "…members in our group would meet synchronously to upload our presentation where the entire class viewed and participated in our presentation."
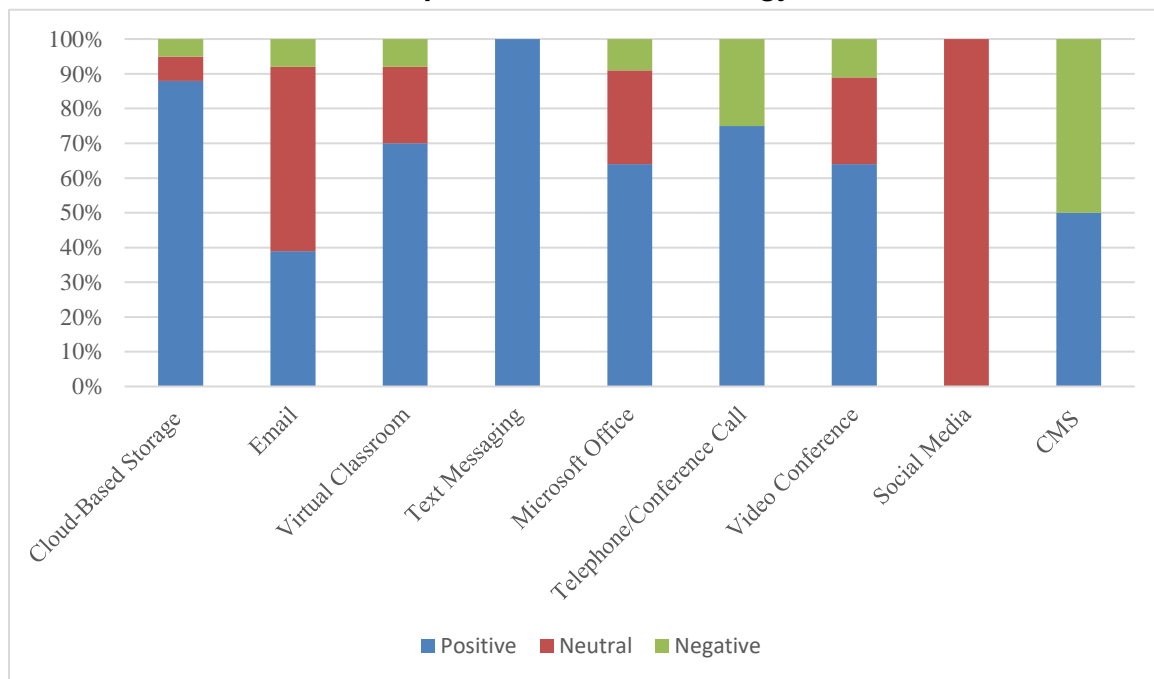
Document sharing

The top technologies used for document sharing were participants included cloud-based storage (34 respondents), virtual (12 respondents), and email (17 respondents). Document sharing via cloud-based storage allowed for flexibility. For example, one participant noted, "Having access from any computer allowed me to have flexibility in regards to when and where I wanted to work."

Technology effectiveness

Participant responses were coded into three categories, positive, negative, or neutral. Below is a table of these responses. Some technologies were perceived better than others. Most of the technologies were perceived as positive. Students who used the CMS indicated the highest level of negative experiences. While the use of email had a high percentage of neutral experiences, one participant noted that because email was asynchronous, it became confusing as to which draft was the most current.

Table 3
Experiences with technology

Discussion

While students used a variety of technology and communication tools, four categories of tools, cloud-based storage, virtual classrooms, email, and text messaging were used at the highest frequency for a variety of purposes. Students appreciated the synchronous nature of virtual classrooms, cloud-based storage, and text messaging. Email was used for planning purposes and items that did not need immediate action. While the CMS was available to all students and was designed as the primary method of course facilitation and communication, it was used minimally by students for completing their virtual teams' projects.

Students understood the challenges of distance learning and utilized technology that would enable effective virtual team work. Students needed tools that would simplify collaboration and communication amongst team members. According to one student, "Since we are all so far apart, meeting face-to-face isn't always an option. [Cloud-based storage and conference calls] allowed us to work on one document and then talk about our projects". Another student provided similar perspective, "We stayed in constant contact, though we were miles apart".

In addition to simplicity, several students expressed the frequency of communication and their appreciation of on-going discussion. Text messaging was common among students, and was particularly notable in the two most recent semesters studied. One student noted, "texting [was] used on a regular basis, with texting occurring several times within a day." This is interesting given that the majority of the students in the study were full-time K-12 teachers or administrators. Despite work-related commitments and other obligations, students appreciated on-going communication about class-related work.

Limitations

There are several limitations to this study. First, it was conducted only with doctoral students enrolled in the same course of a hybrid program at one university. Although the consistency of the researched program and course was helpful in data analysis, the results may not be consistent with other courses and programs. The study was conducted over a period of seven semesters. With rapid advances in technology, it is possible that utilized technologies updated over the period of the study. Those advances could cause a student to gravitate towards or away from a particular technology. Finally, one of the research questions related to student perception of effectiveness. Perceptions were taken as truth, meaning the instructor and researchers did not explore what constituted effectiveness. This area is one of interpretation and readers should determine whether they agree the utilized technology was effective.

Implications and conclusions

Virtual teams collaborate differently based on their familiarity with technology tools and the level of synchronicity the tools provide. CMS that are facilitated by colleges and universities are but one tool that students use when collaborating on online projects. Because of a lack of familiarity with and higher incidences of technical difficulties in using CMS, students tend to prefer those technologies that they typically use for personal communications, such as social media, video conferencing, and text messaging/cell phone usage. Students also prefer technologies that allow for high synchronicity, such as cloud-based storage, when completing online collaborative projects. Based on a variety of factors, students in graduate level online learning courses select the tools they consider a best match for achievement.

Online course instructors must be aware of the variety of ways students are communicating, collaborating, and ultimately learning. Given the results of this study, the following are recommendations for online courses incorporating virtual teamwork:

- Instructors should be cognizant of technologies students use, and how they are using those technologies;

- Virtual team projects and other online class assignments should be designed to allow for student flexibility;

- Instructors should provide support to students through the CMS and other technology platforms;

- Higher education Information Technology Departments and instructors should embrace the concept of consumerization understanding its potential to enhance student productivity.

- In online environments, which can cause student feelings of disconnectedness and detachment, familiar technologies can bridge those feelings and provide a comfortable space where students can engage and learn.

Challenges exist in the fact that technology is ever changing, and that students gravitate toward what they are familiar with. Technologies utilized varied from programs designed to support education to those designed for social networking. While no one technology met the needs of every student, an awareness of the types of technology students use can be beneficial to those designing and working in virtual teams.

References

Albayrak, D., & Yildirim, Z. (2015). Using social networking sites for teaching and learning: Students' involvement in and acceptance of Facebook as a course management system. *Journal of Educational Computing Research*, *52*(2), 155-179. doi: 10.1177/0735633115571299

Cheung, R., & Vogel, D. (2013). Predicting user acceptance of collaborative technologies: An extension of the technology acceptance model for e-learning. *Computers & Education*, *63*, 160-175. doi:10.1016/j.compedu.2012.12.003

Consumerization. (n.d.). In *Gartner IT Glossary*. Retrieved from https://www.gartner.com/it-glossary/consumerization

Consumerization. (2017). In *Wikipedia*. Retrieved August 1, 2017, from https://en.wikipedia.org/wiki/Consumerization

Du, J., Ge, X., & Xu, J. (2015). Online collaborative learning activities: The perspectives of African American female students. *Computers & Education*, *82*, 152-161. doi:10.1016/j.compedu.2014.11.014

Fernandes, S. (2014). The consumerization of education. *CIO Review*, 112-113. Retrieved from https://magazine.cioreview.com/october-2014/Education/index.php?page=5

Ferriman, J. (n.d.). Characteristics of a virtual classroom. Retrieved from https://www.learndash.com/characteristics-of-a-virtual-classroom/

Fogg, L., Carlson-Sabelli, L., Carlson, K., & Giddens, J. (2013). The perceived benefits of a virtual learning community: Effects of learning style, race, ethnicity, and frequent use on nursing students. *Nursing Education Perspectives*. doi:10.5480/11-526.1

Harris, J., Ives, B., & Junglas, I. (2012). IT consumerization: When gadgets turn into enterprise IT tools. *MIS Quarterly Executive*, *11*(3), 99-112.

Kam, H., & Katerattanakul, P. (2014). Structural model of team-based learning using Web 2.0 collaborative software. *Computers & Education*, *76*, 1-12. doi:10.1016/j.compedu.2014.03.003

Karim, N. S. A., & Heckman, R. (2005). Group communication media choice and the use of information and communication technology to support learning: A case study. *Campus-Wide Information Systems*, *22*(1), 28-42. doi:10.1108/10650740510574401

Kolko, J. (2014, May 1). The consumerization of higher education [Web log post]. Retrieved from http://blog.blackboard.com/the-consumerization-of-higher-education/

Ladyshewsky, R., & Pettapiece, R. G. (2015). Exploring adult learners' usage of information communication technology during a virtual peer coaching experience. *Online Learning*, *19*(2). Retrieved from ERIC.

McDaniel, R. (n.d.) Course management systems. Retrieved from
https://cft.vanderbilt.edu/guides-sub-pages/course-management-systems/

Moschella, D., Neal, D., Taylor, J., Opperman, P. (2004). The consumerization of information technology [White paper]. Retrieved September 13, 2017 from Leading Edge Forum:
https://d1xjoskxl9g04.cloudfront.net/media/assets/Comsumerization.pdf

Rouse, M. (2011, November). IT consumerization (information technology consumerization) [Web log post]. Retrieved from http://searchmobilecomputing.techtarget.com/definition/IT-consumerization-information-technology-consumerization

Rowe, M., Bozalek, V., & Frantz, J. (2013). Using Google Drive to facilitate a blended approach to authentic learning. *British Journal of Educational Technology*, *44*(4), 594-606. doi:10.1111/bjet.12063

Slattery, M. (2013, March 7). How consumer technology is remaking the workplace [Web log Post]. Retrieved from
https://www.wired.com/insights/2013/03/how-consumer-technology-is-remaking-the-workplace/

Wang, Q., Woo, H. L., Quek, C. L., Yang, Y., & Liu, M. (2012). Using the Facebook group as a learning management system: An exploratory study. *British Journal of Educational Technology*, *43*(3), 428-438. doi:10.1111/j.1467-8535.2011.01195.x

What is Cloud Storage?. (n.d.). Retrieved from
https://www.techopedia.com/definition/26535/cloud-storage

Yang, Y., Cho, Y., Mathew, S., & Worth, S. (2011). College student effort expenditure in online versus face-to-face courses: The role of gender, team learning orientation, and sense of classroom community. *Journal of Advanced Academics*, *22*(4), 619-638. doi:10.1177/1932202X11415003

About the authors

Dr. Herbert Fiester is an Associate Professor of Curriculum, Leadership and Technology, at Valdosta State University. He earned his Ph.D. in Instructional Systems and Technology from Indiana University. His contact information is: hrfiester@valdosta.edu

Dr. Jamie Workman is an Assistant Professor of Curriculum, Leadership and Technology at Valdosta State University. She earned her Ph.D. in Higher Education from Ohio University. Her contact information is: jworkman@valdosta.edu

Dr. Tim Green is a Professor of Elementary and Bilingual Education at California State University, Fullerton. He earned his Ph.D. in Instructional Systems Technology and Curriculum and Instruction from Indiana University. Her contact information is: tgreen@fullerton.edu

Megan McBride and **Maureen Redington** are Ed.D. students in Curriculum and Instruction in the department of Curriculum, Leadership and Technology at Valdosta State University. They can be reached via the following email addresses: mrmcbride@valdosta.edu and mredington@valdosta.edu

Using instructor-generated short videos in an undergraduate accounting information system course

Javed Yusuf and Deepak Prasad
Fiji

Abstract

The University of the South Pacific (USP) is a regional university, established in 1968, serves twelve independent island nations of the South, Central and North Pacific. In Semester 1 of 2017, an undergraduate introductory accounting information systems course at the University was offered using face-to-face delivery mode. This course was supplemented by an online presence via the University's learning management system and utilised several tools for its delivery of learning and teaching. One such tool was the use of instructor-generated short videos. At the end of the Semester, data was collected on the student viewership of the videos and a survey was carried out to evaluate the effectiveness and usefulness of the instructor-generated short videos in the course, and to gauge student satisfaction on the overall quality and general appeal of these videos.

This paper reports the findings from the student viewership data and the survey. It also briefly reviews literature on the use of videos in education; in particular, short instructor-generated videos for delivery of learning and teaching experiences in the Accounting discipline, followed by the methodology adopted for the survey. The paper concludes by noting limitations of the study and recommending areas for further investigation and improvement.

Keywords: instructor-generated short videos, effectiveness of videos, general appeal of videos, viewership, accounting information system

Introduction

The University of the South Pacific (USP) is a regional university, established in 1968, initially in face-to-face mode. It is now a multi-mode institution. Print-based distance education started in 1971 and online in 2000. It serves twelve independent island nations of the South, Central and North Pacific (Cook Is., Fiji, Kiribati, Marshall Is., Nauru, Niue, Solomon Is., Tokelau, Tonga, Tuvalu, Vanuatu and Samoa) through 14 regional campuses. The main campus is located in Suva, Fiji. USP offers more than 400 courses per semester through four delivery modes; face-to-face, print, online and blended. USP is moving towards providing more of its programmes and courses using online and blended modes. The University has during the past four decades moved ahead with various combinations of educational technologies and delivery strategies. One such strategy is the use of educational videos to either supplement or enhance educational delivery.

The course used for this study (herein referred to as "the course") is an undergraduate introductory accounting information systems course offered by the University's School of Accounting and Finance. The course exposes and explores in-depth using of 'Mind Your Own Business' (MYOB) accounting software currently adopted by many businesses for recording, analysing and interpreting accounting data in modern business environments. It is specially designed to analyse and report financial accounting data to users such as management and stakeholders. In Semester 2017, the course was offered in face-to-face delivery mode supplemented with an online course shell on Moodle, USP's Learning Management System. The course had 11 units/topics of study

throughout the semester. There were 286 students enrolled in the course for Semester 2017 out of which 118 (41%) were male and 168 (59%) were female. Working with the learning designer and media producers, the course instructor developed several short pre-recorded videos for each unit/topic and these were made available to the course students via the online course shell on Moodle. These videos either explained or reinforced key concepts or summarised key points in a particular unit/topic.

At the end of the Semester, data was collected on the student viewership of the videos and a survey was carried out to evaluate the effectiveness and usefulness of the instructor-generated short videos, and to gauge student satisfaction on the overall quality and general appeal of these videos. This paper reports on the findings from the student viewership data and the survey results. It also briefly reviews literature on the use of videos in education; in particular, short instructor-generated videos for delivery of learning and teaching experiences in the Accounting discipline, followed by the methodology adopted for the survey. The paper concludes by noting limitations of the study and recommending areas for further investigation and improvement.

Literature review

In the delivery of learning and teaching experiences, multimedia can be used to supplement course content and activities in innovative or interactive ways (McFarland, 1996), and research in educational psychology suggests that "learning is affected positively by presenting text and illustrations together" (Mayer & Sims, 1994, pp. 389-401). Research has also demonstrated that the use of multimedia, either alone or in conjunction with other instructional aids, is effective for promoting knowledge (Gormley & Ruhl, 2007; Thomas & Rieth, 2011). Video is one such medium, albeit, not new in its use for learning and teaching.

Several recent studies (such as Hsin & Cigas, 2013; Kay, 2012; Moore & Smith, 2012) have shown that videos can be a highly effective tool for the delivery of teaching and learning experiences. The advances and easet in usingvideo recording technology and growing enthusiasm for the "flipped classroom" model have seen increased momentum on the use of pre-recorded lecture videos as a learning and teaching strategy across the education sector (Pardo et al., 2015). Learning for acquisition of cognitive, affective and psychomotor skills can be also be successfully aided by the use of instructional videos (Cooper & Higgins, 2015).

Instructor-generated educational videos are pre-recorded course video segments developed by the instructor, either by himself/herself self or in conjunction with a video production crew. Draus, Curran and Trempus (2014) concluded that the literature on the use of instructor-generated video represented generally consistent themes, noting students reported greater satisfaction and perceived value in the instructor generated video content. Furthermore, Draus, Curran & Trempus study findings indicated that instructor-generated videos had positive and moderate influence on learner satisfaction. Miller and Redman (2010) in their study concluded that instructional video content improved learner attitudes towards the content, increased their student mastery of learning material and improved student satisfaction. The use of instructor-generated video content also improves social and teaching presence of the instructor in an online environment (Borup, West, & Graham, 2012; Hegeman, 2015). Griffiths and Graham (2009) in their study concluded the use of asynchronous videos had the capacity to develop positive levels of immediacy and social presence that can be motivational to students and offered the benefits of time and location flexibility.

Short instructor generated videos popularized by Khan Academy and MOOCs are optimally between five to ten minutes in duration, and succinct in nature (Yusuf, Prasad, & Bhartu, 2017). Guo, Kim and Rubin (2014) noted that this style of video allows instructors to situate themselves on the same level as the learner offering more learner engagement. Davis (2012) also highlighted

that the short duration of this style of video enables reinforcement of key learning concepts and promoting mastery of learning.

The use of videos in teaching accounting has been comprehensively explored in studies by Hornik and Thornburg (2010), Rich (2012) and Fessler (2012). Watters and Paul (2009) in their findings highlighted that the majority of students in an undergraduate accounting course indicated that pre-recorded video lectures were more effective than live classroom lectures. Philips and Trainor (2014) found a similar thing, particularly with millennials, noting that millennial accounting students in their study valued video lectures as a source for content delivery. Lu and Song (2013) pointed out that because a lot of operational difficulties were encountered in teaching accounting information systems, the use of the video clips for an accounting information systems class was necessary. Furthermore, Lu and Song (2013) noted that in their case, the use of video clips expanded the range of ways that accounting teachers can disseminate knowledge to accounting students and enabled accounting students to learn accounting information systems through a multi-layered approach that included a combination of traditional face-to-face lectures and video clips.

Methodology

This study was conducted during Semester 1 of 2017. For this study, two instruments were used. Data was collected on the student viewership of the videos and a student survey. Data from student viewership i.e. the total number of times (frequency) a video was viewed or downloaded by the course students throughout the Semester. This data was collected after the completion of the Semester using the 'logs' tool of Moodle

The other method utilized was a student survey. The survey was created and conducted online using Google Forms (https://www.google.com/forms) and a link to the survey was placed on the course's Moodle site in the last teaching week of Semester 1, 2017. Students were given 4 weeks to complete the survey. The survey was optional for students to take and their responses were voluntary and completely anonymous. Survey data were collected over that period.

The survey questions were developed by the authors after reviewing several studies on instructional videos and instructor-generated videos. Some of the questions were adopted from the survey instrument developed and used by Draus, Curran and Trempus (2014). The questions were specifically developed/adopted to evaluate the effectiveness and usefulness of the instructor-generated short videos in the course, and to gauge student satisfaction on the overall quality and general appeal of these videos.

The survey consisted of nine Likert scale statements in order to measure student agreement to these statements. The five-point Likert scale consisted of the following components: strongly agree, agree, not sure, disagree and strongly disagree. The authors had categorised these statements into two categories, although the students were not made aware of this. The two categories were: (a) effectiveness and usefulness of the instructor-generated short videos (statements 1 to 6, mentioned below) and (b) student satisfaction of the overall quality and general appeal of the instructor-generated short videos (statements 7 to 9, mentioned below). The nine survey statements were:

Category A: Effectiveness and usefulness of the instructor-generated short videos

- The videos helped me better understand this course.

- The videos helped me develop a stronger understanding of the instructor.

- The videos contributed to my satisfaction with the overall course.

- The videos helped to improve my marks in this course.

- I have gone back to re-watch the videos when I needed further understanding on a topic.
- I was able to learn more from the videos since I was able view at my own pace.

Category B: Student satisfaction of the overall quality and general appeal of the instructor-generated short videos

I was satisfied with the audio and video quality of the videos used in the course.

The duration of the videos used in the course were just enough to keep me engaged.

I would like to see more courses at USP use similar style videos in their courses.

Results – student viewership

By the end of Semester, the total number of views for Unit videos ranged between 353 to 47 views and the total number of students that had viewed these videos at least once ranged from 163 (57%) to 40 (14%). The highest views per Unit video was for Unit 1, the first video for the course. The total number of views for Unit Summary videos ranged between 272 to 19 views and the total number of students that had viewed these videos at least once ranged from 148 (52%) to 23 (8%). The highest views per Unit Summary video was for Unit 1, the first summary video for the course.

These results are summarised in Table 1, and Figures 1 and 2.

Table 1
Breakdown of student viewership per unit videos and unit summary videos, and the variance/difference between each in the source for Semester 1, 2017

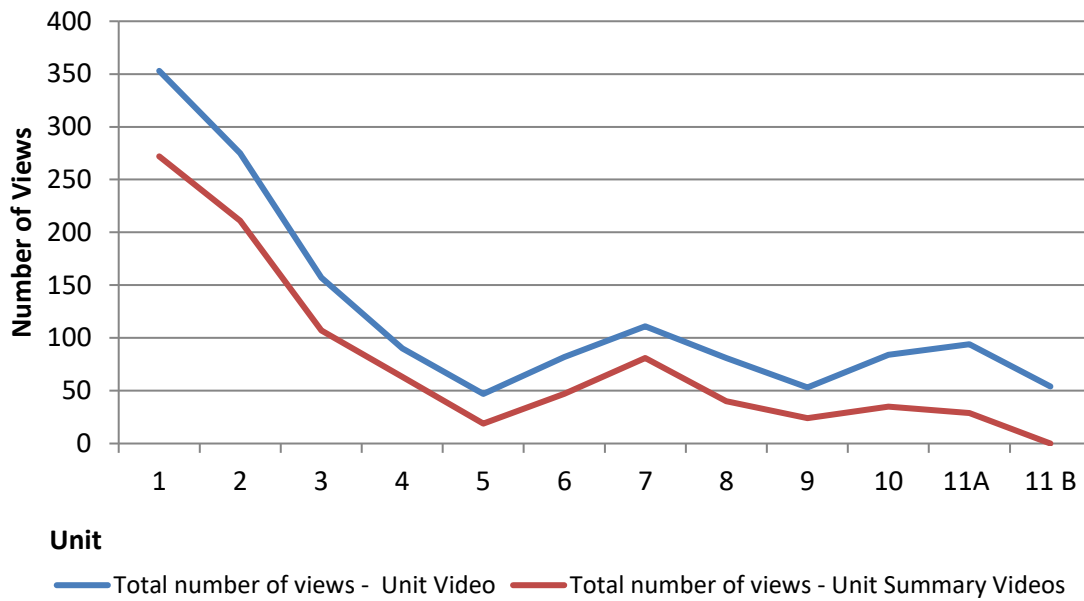| Unit	Unit Video		Unit Summary Video		Variance between Unit Video & Unit Summary Video Viewership	
	Total number of views (a)	*Total number of students that had viewed the video at least once (b)*	*Total number of views (c)*	*Total number of students that had viewed the video at least once (d)*	*Difference – Total number of views (a) – (c)*	*Difference – Total number of viewers (b) – (d)*
1	353	163 (57%)	272	148 (52%)	81	15 (5%)
2	275	133 (47%)	211	118 (41%)	64	15 (5%)
3	157	96 (34%)	107	71 (25%)	50	25 (9%)
4	90	66 (23%)	63	45 (16%)	27	21 (7%)
5	47	35 (12%)	19	28 (10%)	28	7 (2%)
6	82	45 (16%)	47	40 (14%)	35	5 (2%)
7	111	63 (22%)	81	61 (21%)	30	2 (1%)
8	81	57 (20%)	40	34 (12%)	41	23 (8%)
9	53	42 (15%)	24	23 (8%)	29	19 (7%)
10	84	55 (19%)	35	28 (10%)	49	27 (9%)
11 A	94	59 (21%)	29	29 (10%)	65	30 (10%)
11 B	54	40 (14%)	-	-	-	-

Figure 1: Total number of views per unit videos and unit summary videos in the course for Semester 1, 2017
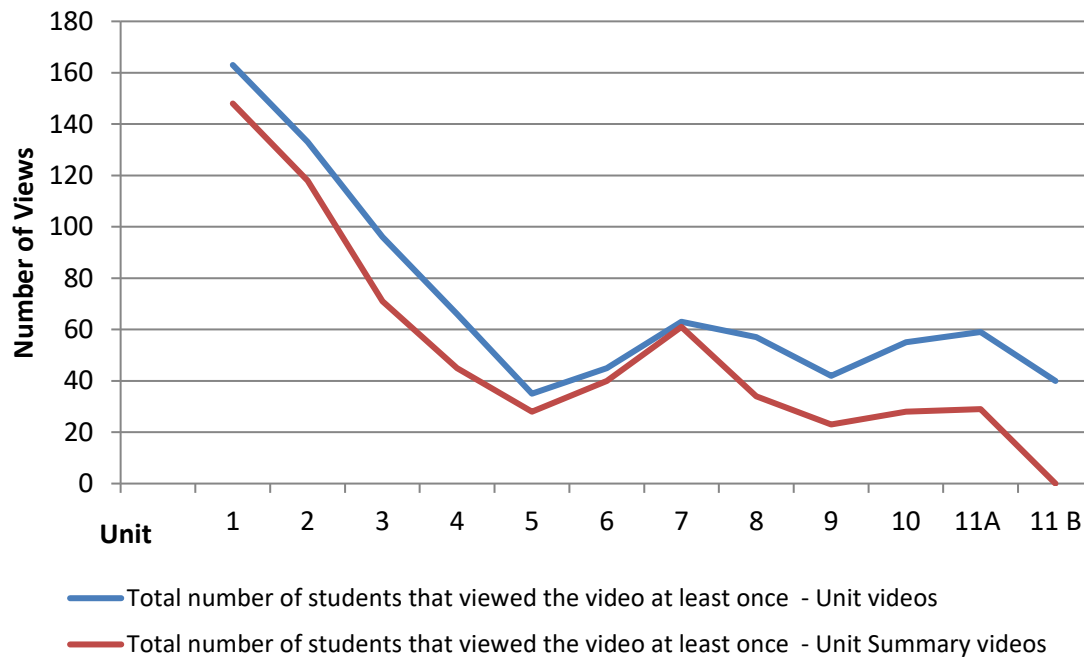

Figure 2: Total number of students that viewed the unit videos and the unit summary videos at least once in the course for Semester 1, 2017.

Survey results

From the 286 enrolled students for the course in Semester 1 of 2017, only 70 students completed the survey successfully, yielding a response rate of approximately 25%. Of the surveyed students, approximately 45% were male and 55% were female.

Generally, the majority of surveyed students (85%) indicated that the instructor-generated short videos used in the course were effective and useful in better understanding the course and the instructor, and contributed to their overall satisfaction with the course. However, the results also showed that on average 7% of surveyed students thought otherwise. About 80% of the surveyed students agreed/strongly agreed that they watched and re-watched the instructor-generated short videos to further their understanding of the course topics. An overwhelming majority of surveyed students (94%) agreed/strongly agreed that they were able to learn more as the instructor-generated short videos enabled them to learn at their own pace. About 70% of the surveyed students agreed/strongly agreed instructor-generated short videos helped in improving their marks in this course; however, few of them (24%) were not sure about this.

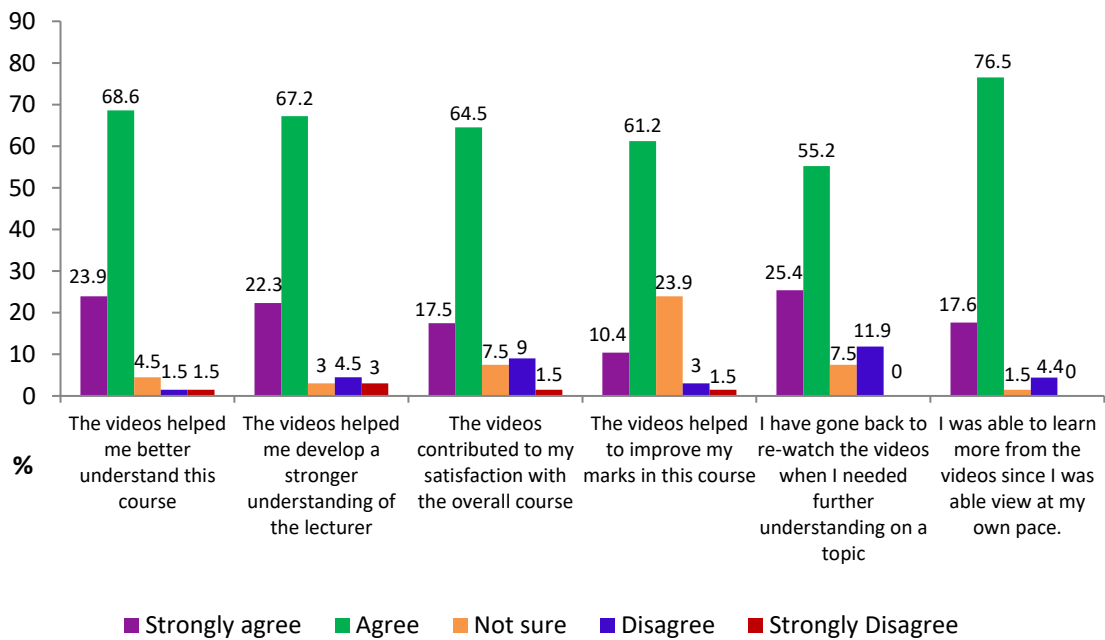These results are summarised in Figures 3 and 4.

Figure 3: Student responses (%) to all the survey statements of the effectiveness and usefulness of the instructor-generated short videos used in the course for Semester 1, 2017.

Figure 4: Average student responses (%) to all the survey statements on the effectiveness and usefulness of the instructor-generated short videos used in the course for Semester 1, 2017

A majority of surveyed students (86%) showed satisfaction of the overall quality and general appeal of the instructor-generated short videos used in the course. However, the results also showed that on average 7% of surveyed thought otherwise. About 82% of the surveyed students were satisfied with the audio and video quality instructor-generated short videos used in the course and found the duration of these videos engaging. An overwhelming majority of surveyed students (94%) indicated that they would like more courses at the University utilise similar style of videos (instructor-generated short videos).

These results are summarised in Figures 5 and 6.

Figure 5: Student responses (%) to all the survey statements on the student satisfaction of the overall quality and general appeal of the instructor-generated short videos in the course for Semester 1, 2017

Figure 6: Average student responses (%) to all the survey statements on the student satisfaction of the overall quality and general appeal of the instructor-generated short videos in the course for Semester 1, 2017
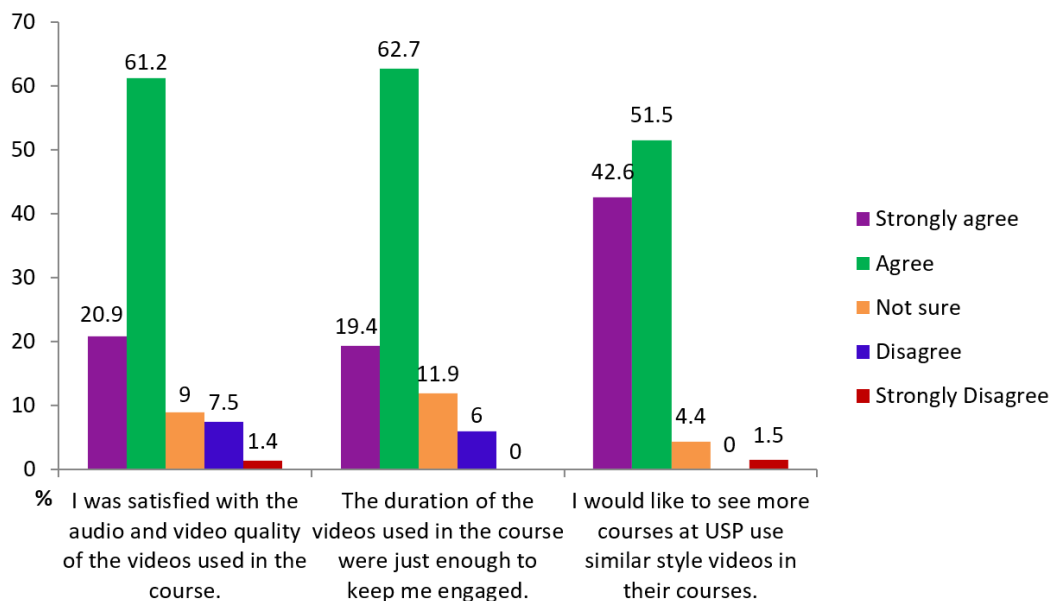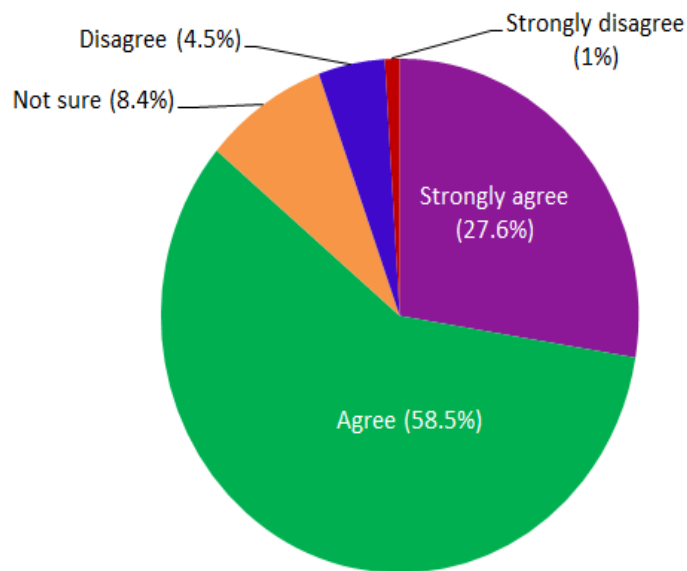
Findings

The results of this study provide some interesting insights in the use of instructor-generated short videos. The major findings included: (i) students viewed more Unit videos compared to the Unit summary videos; (ii) students considered the instructor-generated short videos used in the course to be effective and useful in their learning; and (iii) students were satisfied with the overall quality and general appeal of the instructor-generated short videos used in the course.

Finding #1: Course students viewed more Unit videos compared to the Unit summary videos

The student viewership data (in Table 1 and, Figures 1 and 2) shows that throughout the semester, students were consistently viewing more Unit videos compared to the Unit summary videos with the difference in total average viewership being approx. 45 views per Unit. This difference/variance ranged from 81 to 27 views per Unit. Similarly, more students had viewed the Unit videos at least once in comparison to viewing Unit Summary videos at least once. This difference/variance ranged from 30 to 2 students with the total average of this being approx. 17 viewers per Unit. However, number of views of the both the videos were consistently decreasing from the beginning of the semester till the end, except for Unit 7 videos, where student viewership slightly increased.

Finding #2: Course students considered the instructor-generated short videos used in the course to be effective and useful in their learning

The student survey results (Figures 3 and 4) shows the majority of surveyed students considered the instructor-generated short videos used in the course were effective and useful in their learning and contributed to their overall satisfaction with the course. On statements "the videos helped me better understand this course", "the videos helped me develop a stronger understanding of the instructor" and "the videos contributed to my satisfaction with the overall course", about 88% of the surveyed students either agreed or strongly agreed.

The non-linear and self-paced nature of video technology allows students to interact with instructional video and this may enhance learner engagement, and so improve learning effectiveness (Zhang, Zhou, Briggs, & Nunamaker, 2006). This was evident from the student survey result as about 87% - 94% of the surveyed students either agreed or strongly agreed with statements "I have gone back to re-watch the videos when I needed further understanding on a topic" and "I was able to learn more from the videos since I was able view at my own pace"

Finding #3: Student were satisfied with the overall quality and general appeal of the instructor-generated short videos

Student satisfaction with the quality and general appeal of the instructor-generated short videos were determined using the student survey. Figures 5 and 6 provide results regarding this. Khan (2012) had pointed out that short videos complement the optimal attention span of students, and this was true for this study as about 82% of the surveyed students were satisfied with the audio and video quality of instructor-generated short videos used in the course and found the duration of these videos engaging. An overwhelming majority of surveyed students (94%) indicated that they would like more courses at the University to utilise a similar style of videos (instructor-generated short videos).

Conclusion

Findings from this study indicate that instructor-generated short videos were effective and useful to student learning experiences. Moreover, students had general satisfaction with the quality and appeal of these types of videos. However, the findings of this study must also be viewed within its limitations. The sample size used was relatively small (25%). Except for gender, there were no other demographic data available on any of the surveyed students. The survey instruments were not tested for reliability and validity prior to the survey. These factors could also have influenced the results.

Future research should include a bigger sample size to consolidate and affirm the results from this study and should also consider other demographic data such as age and familiarity with instructor-generated short videos. A qualitative approach should be utilised to augment this study. Additionally, future work in this area should also focus on the impact of instructor-generated short videos on students overall experiences and achievements.

References

Borup, J., West, R. E., & Graham, C. R. (2012). Improving online social presence through asynchronous video. The Internet and Higher Education, 15(3), 195-203

Cooper, D., & Higgins, S. (2015). The effectiveness of online instructional videos in the acquisition and demonstration of cognitive, affective and psychomotor rehabilitation skills. British Journal of Educational Technology, 46(4), 768-779.

Davies, M. (2012). Can universities survive the digital revolution? Quadrant, 56(12), 58.

Draus, P. J., Curran, M. J., & Trempus, M. S. (2014). The Influence of instructor-generated video content on student satisfaction with and engagement in asynchronous online classes. Journal of Online Learning and Teaching, 10(2), 240.

Fessler, N.J. (2012). YouTube, iTunes U and You. Accounting Education, 21(1), 43-45.

Gormley, S., & Ruhl, K. L. (2007). Language structure knowledge of preservice teachers: Connecting speech to print. Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children, 30(2), 83-92.

Griffiths, M. E., & Graham, C. R. (2009). The potential of asynchronous video in online education. Distance Learning, 6(2), 13-22.

Guo, P. J., Kim, J., & Rubin, R. (2014, March). How video production affects student engagement: An empirical study of MOOC videos. In Proceedings of the first ACM conference on Learning@ scale conference (pp. 41-50). ACM.

Hegeman, J. (2015). Using instructor-generated video lectures in online mathematics courses improves student learning. Online Learning, 19(3).

Hornik, S., & Thornburg. S. (2010). Really engaging accounting: Second Life as a learning platform. Issues in Accounting Education, 25(3).

Hsin, W. J., & Cigas, J. (2013). Short videos improve student learning in online education. Journal of Computing Sciences in Colleges, 28(5), 253-259.

Kay, R. H. (2012). Exploring the use of video podcasts in education: A comprehensive review of the literature. Computers in Human Behavior, 28(3), 820-831. Retrieved from http://faculty.uoit.ca/kay/coursefiles/educ5003g/lessonplans/lesson4/Kay_2012_LitRev.pdf

Khan, S. (2012). The one world schoolhouse: Education reimagined. London: Hodder and Stoughton

Lu, B., & Song, L. (2013). Use of video clips in a virtual learning environment of accounting information systems class - A case study. Open Journal of Accounting, 2(4), 107-109.

Mayer, R. E., & Sims, V. K. (1994). For whom is a picture worth a thousand words? Extensions of a dual-coding theory of multimedia learning. Journal of educational psychology, 86(3), 389.

McFarland, D. (1996). Multimedia in higher education. Katharine Sharp Review; no. 003, Summer, 1996. Retrieved from http://hdl.handle.net/2142/78246

Miller, S. T., & Redman, S. L. (2010). Improving instructor presence in an online introductory astronomy course through video demonstrations. Astronomy Education Review, 9(1).

Moore, W., A., & Smith, A., R. (2012). Effects of video podcasting on psychomotor and cognitive performance, attitudes and study behaviour of student physical therapists. Innovations in Education and Teaching International, 49(4), 401-414.

Pardo, A., Mirriahi, N., Dawson, S., Zhao, Y., Zhao, A., & Gašević, D. (2015, March). Identifying learning strategies associated with active use of video annotation software. In Proceedings of the Fifth International Conference on Learning Analytics and Knowledge (pp. 255-259). ACM.

Phillips, C. R., & Trainor, J. E. (2014). Millennial students and the flipped classroom. Journal of Business and Educational Leadership, 5(1), 102.

Rich, K.T. (2012). Exercise-Based Video Podcasts as a Learning Aid for Introductory Financial Accounting Students, in Dorothy Feldmann, Timothy J. Rupert (ed.) Advances in Accounting Education: Teaching and Curriculum Innovations, 13, 185-211. Emerald Group Publishing Limited. http://dx.doi.org/10.1108/S1085-4622(2012)0000013013

Thomas, C. N., & Rieth, H. J. (2011). A research synthesis of the literature on multimedia anchored instruction in preservice teacher education. Journal of Special Education Technology, 26(2), 1-22.

Watters, M. P., & Paul, J. (2009). Online delivery of accounting courses: Student perceptions. Academy of Educational Leadership Journal, 13(3), 51.

Yusuf, J., Prasad, D., & Bhartu, D., (2017). Blending media for flexible delivery at a regional university, International Journal of Instructional Technology & Distance Learning, pp. 33 – 42, 14(1), ISSN 1550-6908.

Zhang, D., Zhou, L., Briggs, R. O., & Nunamaker, J. F. (2006). Instructional video in e-learning: Assessing the impact of interactive video on learning effectiveness. Information & Management, 43(1), 15-27.

About the authors

Javed Yusuf, The University of the South Pacific, Fiji. Email: javed.yusuf@usp.ac.fj

Deepak Prasad, The University of the South Pacific, Fiji: Email: deepak.prasad@usp.ac.fj

Editor's Note: Distance learning has economic advantages for programs that do not have high overhead costs for facilities and equipment, such as medicine, science, technology and engineering. This paper breaks new ground by quantifying and comparing costs from different institutions.

An international review of unit costs of distance learning compared to campus-based higher education courses

Chris Garbett
UK

Abstract

The escalating costs of Higher Education are a problem worldwide. This paper considers the cost implications of Distance Learning (DL). DL courses and institutions have a cost advantage over traditional campus-based courses and institutions. The occupancy costs for distance learning are negligible compared to campus-based learning. This paper examines whether or not this cost advantage exists and attempts to quantify that cost advantage.

The published accounts of DL institutions are examined, over time and in different locations. Total costs as shown in the income and expenditure accounts are divided by total student headcount to arrive at a unit cost.

Comparing unit costs the study finds that there is a significant saving in overall cost per student for DL institutions compared to campus-based institutions. This could have major implications for the way that Higher Education is delivered in the future.

Keywords: Distance Learning, Costs, Accounts.

Introduction

> "*The question of how to pay for education, and in particular how to pay for Higher Education, is everywhere one of the key issues of the twenty-first century*"
> (Piketty, 2014).

This is an especial problem in England. An International comparison of University costs, published by the BBC, shows that English students face higher costs in terms of fees than comparable countries.
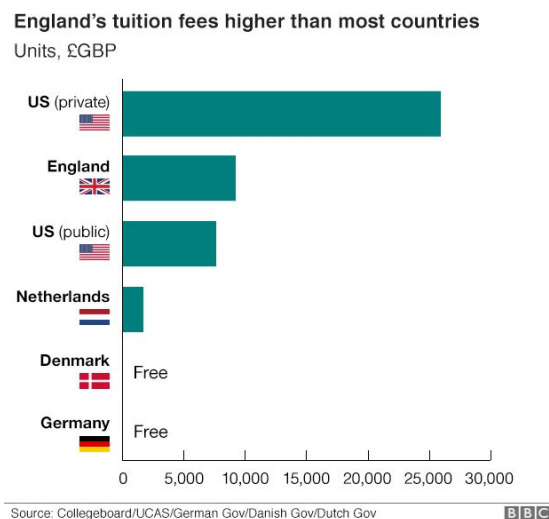

Fig 1 International Comparison of student Fees

There has been relatively little research into the costs of Distance Learning.

Dr Greville Rumble considered the costs of distance learning and identified cost structures. (Rumble G. , 2001) and further considered financial management (Rumble, 2012)

(Sharma, 2011) considered the financial implications of e-Learning. Ilic and Jovanovic (2012) considered e-learning costs and Return on Investment (ROI). However, these papers are largely concerned with high-level strategies, rather than actual costs at the level of the course or the module.

The Commonwealth of Learning (Perraton H, 2004) produced a handbook of the costs of Distance Learning. This contains some very useful principles and case studies, though as the study was published in 2004 using data prior to that date;with advances in technology the costs are now somewhat dated.

The relative costs of face-to-face and online instruction were considered by (Bartlett, 2004). This was largely concerned with instruction, rather than an HE programme and, again, detailed costs were missing.

There has, however, been comparatively little research into the comparative costs of courses to Higher Education Institutions (HEIs), or on attempting to equate the fees charged to the costs incurred.

Cost identification

This paper compares operational costs of Distance Learning institutions with the operational costs of campus-based institutions.

Operational Expenses (OPEX)

Operational Expenses (OPEX) is defined as: "… the costs generated from the general day-to-day running of a business, organisation or product. This is also known as running costs, operating costs or general expenses."
 (Financial Times, n.d.).

Occupancy Costs

Occupancy Costs are a subset and major component of OPEX. Occupancy costs are defined as:

"The total of costs incurred by a tenant to provide space for operations. It includes net rent, operating costs (outgoings), capital costs, taxes, insurance and depreciation allowances."
(Property Institute, n.d.)

The operating costs incurred by property occupation include: utilities, repairs, maintenance, and insurance.

The costs of real estate are the second or third largest cost factor in most companies after staff costs (Stoy C, 2006). Estimates of occupancy costs as a % of total costs as shown on the Income and Expenditure Account vary according to the type of business. For example, a hospital with high-tech equipment would have a high occupancy cost, as a proportion of total outgoings. A home-based online business would have very low occupancy costs. In retailing, the cost advantage of online retailing which comes from reduced occupancy costs, has been a major factor in the rise of online retailing and the decline of the High Street.

University occupancy costs, in aggregate, were considered by the Association of University Directors of Estates. Their findings are reproduced below.

Note: 2003/04=100 for all series. Property costs adjusted for inflation. Total property costs do not include the Rateable Value (RV).
Source: London Economics based on EMR data (Association of University Directors of Estates, 2015)

Fig 2 University Occupancy Costs

Adjusting for the effects of the financial crisis, the trend has been for an overall rise in property costs, both in total, and per FTE. The significant fall in total maintenance costs can be assumed to be due to a reduction in maintenance budgets due to the financial crisis. Any reduction in Planned Preventative Maintenance (PPM) will likely result in higher deferred and backlog maintenance costs at a later stage.

Given the importance of occupancy costs in the overall cost profile of organisations; a reduction in occupancy costs will have an impact on the overall costs. In Higher Education, distance learning (DL) programmes have no requirement for classrooms, tutorial rooms or other student space. Given this lower space requirement, DL programmes should have a lower cost profile than traditional campus-based face-to-face programmes.

This paper will examine the costs to identify if there is, in fact, a cost advantage in delivering DL programmes compared to delivering traditional campus-based programmes. If there is such a cost advantage, can it be quantified?

Methodology

Data Sources

Using the published accounts of a number of different Universities, total expenditure, as expressed in the Income and Expenditure account was divided by the total student headcount to arrive at a cost per student, or unit cost. The unit costs of distance learning (DL) institutions were compared with the unit costs of more traditional campus-based Universities. As students on DL courses are predominantly part-time students, the use of total headcount, rather than Full Time Equivalent (FTE) numbers was felt to give a more realistic picture of unit costs, on a like for like basis.

Data selection

As far as possible, data was drawn from three consecutive accounting years, 2013, 2014, 2015. This was to increase the overall data drawn from the sample Universities; and to provide some element of time series and overcome any short-term anomalies in the accounts.

To broaden the sample range, data was selected from three different countries/regions. Again, this was intended to avoid any anomalies from using a limited data source, for example for only comparing the accounts of the UK Open University as representative of DL institutions.

Echoing the findings of the Commonwealth of Learning (Garrett, 2016) there is a surprising lack of transparency from some of the Universities. As a notable example, the world's largest DL institution, the Indira Gandhi National Open University (IGNOU) does not publish any accounts. For other Universities, it was not possible within an institution to distinguish between data for DL courses and for campus-based courses.

It was further decided to restrict the samples to public Universities only, in order to compare like for like. Private Universities, therefore, have been excluded from the samples.

The selected DL institutions are: The UK Open University (UKOU), The Open University of Sri Lanka, and the University of South Africa (UNISA).

The accounts of UKOU and UNISA are readily available on the University websites and data from the years 2013-2015 has been used. Data from the Open University of Sri Lanka is not readily available, though a financial analysis for 2011 was found. This provided seven points of data for DL institutions.

In selecting campus-based universities, known high-cost courses were excluded from the samples. Universities with courses in medicine, veterinary science, aeronautical engineering, etc. were excluded from the analysis. The high capital costs of such courses would skew the data and would not provide a like for like comparison with DL courses.

Only two Sri Lankan Universities either had published accounts, or were not excluded. UNISA was compared with six other South African Universities. UKOU was compared with six other UK Universities.

Data on student numbers comes either from published national statistics such as HESA returns, or from the University's websites. In the case of the South African Universities, 2015 headcount figures are not all currently available. In those cases, 2014 figures were used again as likely to be the closest estimate.

Financial data

As far as possible, financial data was drawn from the published Income and Expenditure (Profit & Loss) accounts. In the case of the Sri Lankan Universities, published extracts from the accounts were used.

OPEX figures only were used. Capital Expenditure (CAPEX) items were excluded, as was financial costs interest on loans, charges, etc.) and depreciation. An argument could be made for including CAPEX and depreciation into the analysis on the grounds that most CAPEX items are likely to be occupancy-based. For example, new buildings are major rebuilds/refits. The depreciation is similarly likely to relate to property-based CAPEX. However, CAPEX could also include new items of capital equipment, such as computers and IT systems. Without details of CAPEX items, it was felt that excluding CAPEX would give a clearer picture. If CAPEX and depreciation are included, the cost difference between DL and campus-based Universities is even more marked.

All costs are quoted in local currency..

Data Analysis

UK Data

Open University UK	2013	2014	2015
Total no students	168,215	123,490	107,110
Total Expenditure	£428,700,000	£421,100,000	£428,800,000
Depreciation	£1,000,000	£9,600,000	£9,100,000
Financial Costs		£4,000,000	£2,000,000
Total Expenditure (Excluding finance costs, depreciation etc.)	£427,700,000	£411,100,000	£417,700,000
Cost per student	£2,543	£3,329	£3,900
University 1	2013	2014	2015
Total no students	32465	32160	31355
Total Expenditure	£220,916,000	£234,615,000	£255,707,000
Depreciation	£5,814,000	£7,369,000	£1,748,600
Financial Costs	4671000	£2,195,000	£1,891,000
Total Expenditure (Excluding finance costs, depreciation etc.)	£210,431,000	£225,051,000	£252,067,400
Cost p student	£6,482	£6,998	£8,039
OU cost/f2f cost as %	39%	48%	49%
University 2	2013	2014	2015
Total no students	34720	33100	31530
Total expenditure	£236,672,000	£242,721,000	£249,080,000
Depreciation	£14,043,000	£13,050,000	£14,670,000
Finance Costs	£1,924,000	£744,000	£1,776,000
Total Expenditure (Excluding finance costs, depreciation etc.)	£220,705,000	£228,927,000	£232,634,000
Cost per student	£6,357	£6,916	£7,378
OU cost/f2f cost as %	40%	48%	53%
University 3	2013	2014	2015
Total no students	25805	20935	26025
Total expenditure	£167,009,000	£175,468,000	£189,685,000
Depreciation	£9,397,000	£9,670,000	£11,082,000
Finance Costs	£5,537,000	£4,738,000	£4,115,000
Total Expenditure (Excluding finance costs, depreciation etc.)	£152,075,000	£161,060,000	£174,488,000
Cost per student	£5,893	£7,693	£6,705
OU cost/f2f cost as %	43%	43%	58%

Data Analysis

UK Data

University 4	2013	2014	2015
Total no students	27430	27050	20895
Total expenditure	£212,300,000	£220,000,000	£255,707,000
Depreciation	£6,400,000	£7,400,000	£17,486,000
Finance Costs	£1,900,000	£1,000,000	£1,891,000
Total Expenditure (Excluding finance costs, depreciation etc.)	£204,000,000	£211,600,000	£236,330,000
Cost per student	£7,437	£7,823	£11,310
OU cost/f2f cost as %	34%	43%	34%
University 5	2013	2014	2015
Total no students	27270	25635	27600
Total expenditure	£199,718,000	£220,059,000	£257,177,000
Depreciation	£14,134,000	£14,149,000	£16,176,000
Finance Costs	£6,047,000	£5,971,000	£5,643,000
Total Expenditure (Excluding finance costs, depreciation etc.)	£179,537,000	£199,939,000	£235,358,000
Cost per student	£6,584	£7,799	£8,527
OU cost/f2f cost as %	39%	43%	46%
University 6	2013	2014	2015
Total no students	27270	27565	27075
Total expenditure	£210,173,000	£221,532,000	240173000
Depreciation	£1,371,600	£1,287,000	16325000
Finance Costs	£4,551,000	£3,905	£3,690,000
Total Expenditure (Excluding finance costs, depreciation etc.)	£204,250,400	£220,241,095	£236,483,000
Cost per student	£7,490	£7,990	£8,734
OU cost/f2f cost as %	34%	42%	45%
Median Costs per student non-open University	£6,419	£7,693	£7,709
OU Costs as %	39.61%	43.27%	50.59%

Data Analysis

South African Data

UNISA	2013	2014	2015
Total no students (headcount)	352,823	328,492	337,612
Total Expenditure	R5,008,858,000	R5,626,073,000	R6,212,577,000
Depreciation	R208,019,000	R233,387,000	R275,575,000
Financial Costs	R4,394,000	R11,209,000	R7,652,000
Total Expenditure (Excluding finance costs, depreciation etc.)	R4,796,445,000	R5,381,477,000	R5,929,350,000
Cost p student	R13,594	R16,382	R17,563
University 1	2013	2014	2015
Total no students	13303	14352	14,352
Total Expenditure	R589,124,000	R753,130,000	R743,259,000
Depreciation	R33,596,000	R33,973,000	R33,973,000
Financial Costs	R425,000	R494,000	R569,000
Total Expenditure (Excluding finance costs, depreciation etc.)	R555,103,000	R718,663,000	R708,717,000
Cost p student	R41,728	R50,074	R49,381
UNISA cost/f2f cost as %	33%	33%	
University 2	2013	2014	2015
Total no students	33477	33186	33,186
Total Expenditure	R1,733,383,978	R1,895,493,506	R2,159,006,174
Depreciation	R55,866,261	R56,429,737	R66,617,050
Financial Costs	R23,106,979	R28,536,579	R31,985,007
Total Expenditure (Excluding finance costs, depreciation etc.)	R1,654,410,738	R1,810,527,190	R2,060,404,117
Cost p student	R49,419	R54,557	R62,087
UNISA cost/f2f cost as %	28%	30%	
University 3	2013	2014	2015
Total no students	26059	26472	0
Total Expenditure	R1,120,618,000	R1,198,382,000	R0
Depreciation	R34,410,000	R43,712,000	R0
Financial Costs	R3,962,000	R3,824,000	R0
Total Expenditure (Excluding finance costs, depreciation etc.)	R1,082,246,000	R1,150,846,000	R0
Cost p student	R41,531	R43,474	Not available
UNISA cost/f2f cost as %	33%	38%	

Data Analysis

South African Data

University 4	2013	2014	2015
Total no students	26361	26510	26,510
Total Expenditure	R1,640,516,000	R1,741,223,000	R1,871,400,000
Depreciation	R76,978,000	R84,705,000	R98,623,000
Financial Costs	R889,000	R4,684,000	R6,270,000
Total Expenditure (Excluding finance costs, depreciation etc.)	R1,562,649,000	R1,651,834,000	R1,766,507,000
Cost p student	R59,279	R62,310	R66,635
UNISA cost/f2f cost as %	23%	26%	

University 5	2013	2014	2015
Total no students	11818	13497	13,497
Total Expenditure	R1,625,937,000	R763,348,000	R940,390,000
Depreciation	R76,978,000	R34,279,000	R38,081,000
Financial Costs	R889,000	R2,699,000	R5,758,000
Total Expenditure (Excluding finance costs, depreciation etc.)	R1,548,070,000	R726,370,000	R896,551,000
Cost p student	R130,993	R53,817	£66,426
UNISA cost/f2f cost as %	10%	30%	

University 6	2013	2014	2015
Total no students	11818	13497	13,497
Total Expenditure	R1,640,516,000	R3,237,855,000	R3,607,281,000
Depreciation	R76,978,000	R88,017,000	R89,974,000
Amortisation of CAPEX (software)	R889,000	R8,664,000	R4,922,000
Financial Costs	R18,364,000	R18,024,000	R200,600
Total Expenditure (Excluding finance costs, depreciation etc.)	R1,545,174,000	R3,131,814,000	R3,517,106,400
Cost p student	R130,748	R232,038	R260,584
UNISA cost/f2f cost as %	10%	7%	

	2013	2014	2015
Median Costs per student, Campus University	R54,349	R54,187	R66,426
DL Costs as % of campus costs	25.01%	30.23%	26.44%

Data Analysis

Sri Lankan Data

Open University of Sri Lanka	2011	2013	
Cost p ug student	Rs. 24,455		
Cost p pgstudent	Rs. 54,428		
Avge Cost p student	Rs. 39,442	Rs. 37,468	
University 1	2012	2013	
Cost p student	Rs. 125,392	Rs. 139,942	
OUSL cost/f2f cost as %	30%	27%	
University 2		2013	2014
Total no students		5,705	6,175
Total Expenditure (Excluding finance costs, depreciation etc.)		Rs. 561,016,641	Rs. 670,825,613
Cost p student		Rs. 98,338	Rs. 108,636
OUSL cost/f2f cost as %		38%	34%
Median cost p student OUSL	Rs. 38,455		
Median Costs per student, Campus University	Rs. 117,014		
DL Costs as % of campus costs	32.86%		

Graphical analysis of data

The financial data can be graphed as follows:

UK Costs per student 2013-2015

	1	2	3	4	5	6	7
2013	£2,543	£6,482	£6,357	£5,893	£7,437	£6,584	£7,490
2014	£3,329	£6,998	£6,916	£7,693	£7,823	£7,799	£7,990
2015	£3,900	£8,039	£7,378	£6,705	£11,310	£8,527	£8,734

Fig 3 UK University cost comparisons. Series 1 represents the Open University

South Africa Costs per student 2013-2014

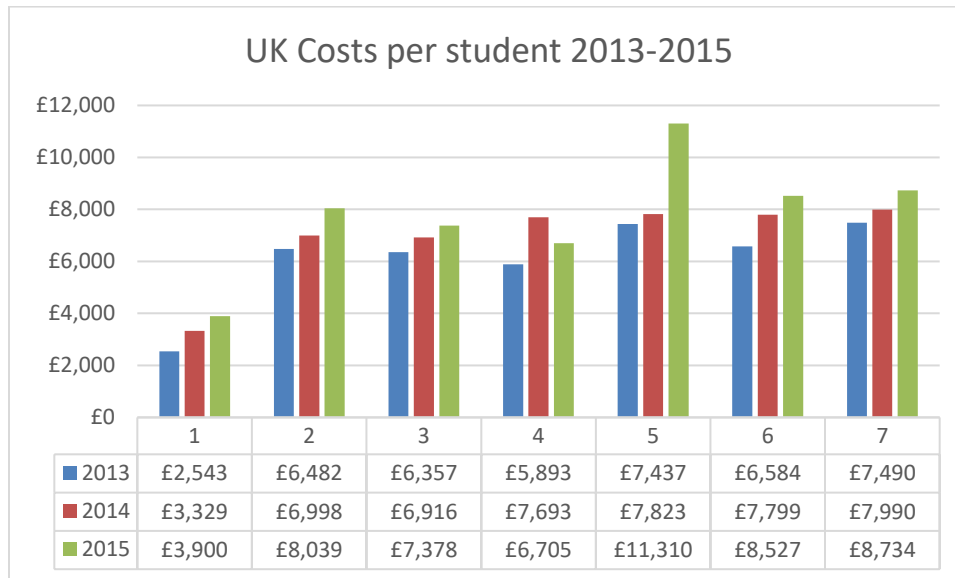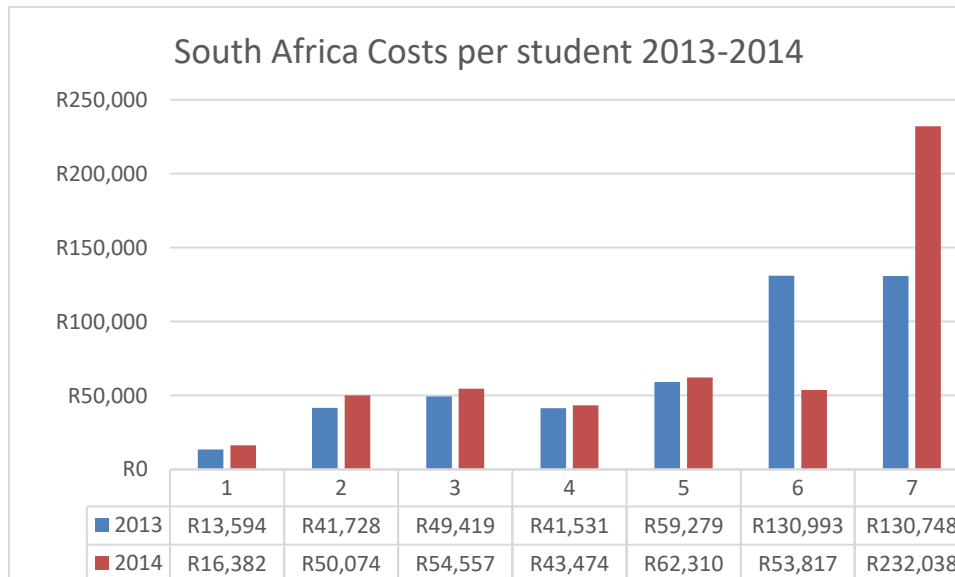|	1	2	3	4	5	6	7
2013	R13,594	R41,728	R49,419	R41,531	R59,279	R130,993	R130,748
2014	R16,382	R50,074	R54,557	R43,474	R62,310	R53,817	R232,038

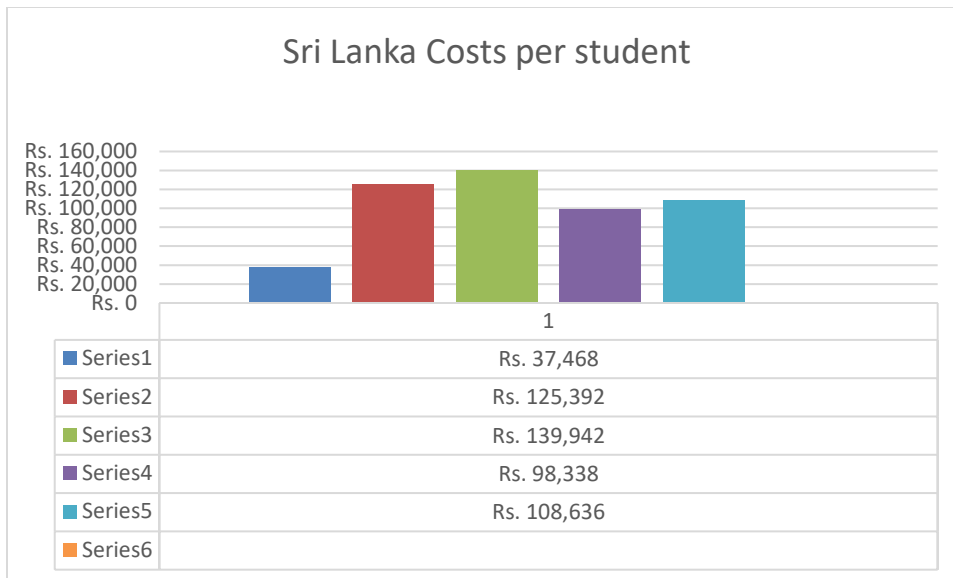**Fig 4 South African University cost comparisons. Series 1 represents the UNISA**

Fig 5 Sri Lankan University cost comparisons. Series 1 represents the Open University of Sri Lanka

Conclusion

Taking the time series, data samples of 8 DL institutions have been compared with data samples from 38 campus-based institutions.

The cost per student of each of the data sets has been considered. Consistently, the costs for DL delivery are lower than the costs for campus-based delivery. DL costs range between 25% and 50% of the costs of campus-based delivery.

It should be noted that the analysis and finding relate to DL institutions and not to individual DL programmes.

Further research

The next stage of the research will be to further identify cost differences between campus-based and DL courses.

Further research is also being undertaken into course pricing. Is the cost advantage being translated into lower prices for DL programmes?

References

Association of University Directors of Estates. (2015). *Delivering Value form the HE Estate.* Loughborough.

Association of University Directors of Estates. (2015). *Delivering Value from the Higher Education Estate.* Loughborough: AUDE.

Bartlett, G. (2004). Evaluating the Cost effectiveness of Online and Face-to-Face Instruction. *Educational Technology & Society, 7*(4), 167-175.

BBC News. (2017). *10 Charts that Show the Effect of Tution Fees*. Retrieved July 9, 2017, from http://www.bbc.co.uk/news/education-40511184

Byrd, J. M. (2012). Revenues and e-learning: do universities need an online presence? *Journal of Higher Education Policy and Management, 34*(6).

Financial Times. (n.d.). *Financial Times ft.com/lexicon*. Retrieved July 11, 2017, from http://lexicon.ft.com/Term?term=opex&mhq5j=e3

Garrett, R. (2016). *The State of Open Universities in the Commonwealth. A Perspective on Performance Competition and Innovation.* Burnaby, B.C.: Commonwealth of Learning.

JLL. (2015). *Optimising Real Estate:.* London: JLL.

Perraton H. (2004). *Costs and Economics of Distance Learning.* Vancouver: The Commonwealth of Learning.

Piketty, T. (2014). *Capital in the Twenty-First Century.* Cambridge, Mass: Harvard University Press.

Property Institute. (n.d.). *Glossary of Property Terms*. Retrieved July 11, 2017, from http://www.propertyelearning.co.nz/mod/glossary/view.php?id=436&mode=cat&hook=-1&sortkey=&sortorder=asc&fullsearch=0&page=72

Rumble. (2012). Financial Management of Distance Learning in Dual Mode Institutions. *Open Learning: The Journal of Open, Distance and E-Learning, 27*(1), 37-51.

Rumble, G. (2001). The Costs and Costing of Networked Learning. *Journal of Asynchronous Learning Networks, 5*(2), 75-96.

Sharma, K. (2011). Financial implications of implementing an e-learning project. *Journal of European Industrial Training, 35*(7), 658-686.

Stoy C, K. S. (2006). Occupancy costs: a method for their estimation. *Facilities, 24*(13/14), 476-489.

About the author

Chris Garbett MSc BSc (Hons) FRICS FHEA
is now retired.

He is a former Principal Lecturer and Teacher Fellow in the School of the Built Environment and Engineering at Leeds Beckett University in the UK. He is also a former Associate Lecturer with the UK Open University.

He has written and lectured extensively on aspects of Distance Learning. He can contacted on chrisgarbett@hotmail.com