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HETS ONLINE JOURNAL

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Message from the Chairman

Welcome to the fall issue of the HETS Online Journal,

I am delighted to present the fall issue of the sixth edition of this publication. We are proud because, since its third edition, the journal is being included in EBSCO Publishing's databases. EBSCO Publishing caters to the information needs of researchers at every level by providing the content to bring the latest and best information to researchers.

The HETS journal has been characterized because it addresses relevant topics impacting technology and Hispanic Students; this issue is not an exception. Our readership includes researchers, scholars, students and organizations who are interested in technologies, higher education and the Hispanic population. The journal also highlights the use of technology to improve pedagogy. It is only through publications such as the HETS Online Journal that we can focus a wide spotlight on the good work that is being done by our colleagues.

It is my sincere hope that you share the link to our journal with your colleagues. Should you have an innovative technique or would like share your knowledge and experience in technologies impacting higher education, please **consider submitting an article** for spring edition **on or before March 18, 2016**.

My sincere gratitude to editor in Chief, Pamela Vargas, and members of the Editorial Board: Dr. Naydeen González De Jesús, Prof. Ana Milena Lucumi, Dr. Ernest Gil Clary, Mr. Sunil Gupta, Dr. Manuel Correa, Dr. Carlos Morales, Mr. Carlos Guevara, Dr. Juan "Tito" Meléndez, and Pura Centeno for accepting the challenge of reviewing and selecting the articles among the many exciting submissions received. We would like to recognize the hard work, commitment and dedication of all.

I hope you find our fall issue both informative and interesting.

Manuel J. Fernós, Esq.
HETS Chair
President, Inter American University of Puerto Rico

Message from the Chief Editor

Welcome to the fall 2015 Edition of the HETS Online Journal!

This edition of the Journal offers articles that will inspire and guide educators who are interested in using technology effectively to engage students and help them succeed. Topics include a comparison of student learning in traditional, hybrid and writing intensive courses, a discussion of one institutions exploration of video repository solutions for their campus, engaging students by using technology in an asynchronous learning environment, and access to open educational resources.

We hope that the articles in this edition will spark ideas for your institution, and inspire you to use technology in new ways to facilitate student success, retention, and graduation!

Sincerely,

Pamela A. (Krauser) Vargas
Director
Research and Grant Development
Southeast Missouri State University

Comparison of Student's retention of core concepts in Traditional, Hybrid and Writing-Intensive Allied Health Microbiology and Infection Control Courses".

By: Shazia Khan

Associate Professor, Biological Sciences Department, Bronx Community College, C.U.N.Y.

Comparison of Student's Retention of Core Concepts in Traditional, Hybrid and Writing-Intensive Allied Health Microbiology and Infection Control Courses.

Abstract: The purpose of this study was to probe best course modality for the student population of a community college taking the Microbiology and Infection Control Courses. Students' retention of knowledge base was compared in Traditional, Hybrid and Writing-Intensive Microbiology and Infectious Disease Control courses. Students' final grades achieved in the course and withdrawal rates were used to evaluate the comprehension of knowledge and students' overall performance. Additionally, students' scores for a specific set of twenty five questions in the final lecture exam were utilized as part of the embedded assessment for retention of knowledge base, and general education proficiencies were also compared. All courses used in this study were taught by the same instructor, the difference being the lecture delivery mode. Students in all courses were provided with the same lecture notes via Blackboard. For the Traditional and Writing-Intensive (WI) courses, there were weekly in-class lectures with duration of three hours each; however, there were no in-class lectures for Hybrid courses and face to face component was three hour/week Lab session. WI students were required to do formal and informal writing assignments based on the core topics, though Lab components were exactly same for students in all courses modalities in this study. Data analysis revealed that students in Traditional courses performed much better in most aspects measured in this study, as compared to students in Hybrid and Writing-Intensive courses. Withdrawal rates were same in Hybrid and WI courses, but higher than

Traditional courses. The number of students who received an overall F grade was highest in the WI courses. In terms of correct responses to embedded assessment questions, the difference was significantly higher for students in WI courses as compared to Traditional.

Introduction

Bronx Community College is one of the HSI community colleges in New York City, and, like most other institutions in this category, struggles with student retention and graduation rates. Providing services to help students stay in school and complete their education is a major challenge faced by many public institutions providing postsecondary education (Waller & Tietjen-Smith, 2009). These students struggle at various levels, such as lack of college preparedness, having to work long hours to meet their financial needs, and family issues (Mitchell, 2012). The National Center for Educational Statistics' 6 years data (NCES, 2014) shows that only 59 % of community college students continue in the second year of college; the remaining 41% do not return to pursue their goal of achieving a higher education. This 41% attrition rate highlights a serious concern of wasted resources for community colleges, when those students drop out of academic programs before completing their education. Often, it is due to the lack of learning abilities and various other reasons, such as social and economic attributes (Goldrick-Rab, 2010; Wild & Ebbers, 2002).

High attrition rates among community college students require supportive curriculum to enhance academic learning and increase retention (Rath, Rock, & Laferriere, 2013). One student retention initiative is the introduction of Writing-Intensive (WI) courses to enhance students' ability to advance academically. It has been established time and again that students' learning

and writing capabilities decline between their freshmen year and graduation. With the incorporation of writing into the subjects of their major, the profound effect would be not only in their writing but in their overall performance in that area (Slevin et al., 1990). One part of this WI curriculum was dubbed "micro themes," where the student must read a body of material about core concepts of the course, discuss its'' structure, condense it while retaining its hierarchy, and write a summary. This exercise strengthens both reading comprehension and writing ability. The idea is that WI courses provide a mean of addressing the decline in student writing proficiency. The introduction of writing assignments may help promote deeper understanding of the course content. Additionally, students develop good writing skills by linking their writing proficiency with their desired field of study, which also gets them engaged in emerging issues/questions in their discipline and become active participants in the academic process (Ahlawat, Miller, & Shahid, 2011).

The demand for online learning has been on the rise in the past several years, mostly due to flexibility of scheduling. Hybrid courses add value to online learning, since they offer the valuable student teacher interaction and the ability to complete part of the work online. The flexibility in the number of hours students would have to devote to commuting to campus is also attractive, as it saves time and reduces the cost of traveling (Black, 2002; Wingard, 2004; Ernst, 2008). Hybrid or blended instruction is an ideal combination of face to face classroom format with online instruction, providing the benefits of student to instructor interaction with the convenience and flexibility of online instruction (Lamport and Hill, 2012). At Bronx Community College, a Hybrid course typically involves one-third to three-quarters of course work completed

online. The question, however, is whether online courses are a reliable instructional tool to achieve learning outcomes.

The purpose of the present study was to compare the role of various course modalities (Traditional, Hybrid, and Writing-Intensive) in promoting students' understanding and knowledge retention. The hybrid courses involved completing the lecture part of the course work online, while labs were done in class three hours per week. A WI course at BCC is characterized by 25% of the grade based on informal and formal writing. Both WI and Traditional courses have three hour lectures, face to face. WI, Traditional and Hybrid courses all have three hour face to face Lab time.

In BCC's Microbiology and Infectious Disease Control course, most of the students are either nursing majors or Biology majors in the Medical Laboratory and Technology program. CUNY is a major contributor to the nursing workforce in New York City, and thus it is important that CUNY continues to increase the number of nursing graduates who pass their licensing exams (CUNY Master Plan 2008-2012). This course is offered as a part of the nursing program (Associate of Arts and Science degree) courses' sequence, though some students take it while waiting to be accepted into the nursing programs at BCC or transferring elsewhere. This is the only Microbiology course students in this AAS degree program take, and with it they are expected to develop a good understanding of concepts, including microorganisms, infectious diseases and their control. These skills will enable them to maintain patient care environments that are free of infectious agents' contamination and thus lead to prevention of disease transmission. The knowledge these nursing students gain during this course will potentially help them interact with patients in a variety of settings; for example, they develop skills to administer and analyze gram

staining smears for the bacterial identification. These students must understand the significance of proper patient sample collection as well as the handling and disposal of biohazard waste. They are required to master the universal precautions and aseptic techniques to prevent disease transmission and cross contamination. The concepts of microbiology taught in this course help future nurses to see beyond their common knowledge of healthcare and to take all necessary precautions.

This study's results are anticipated to help decide which modality works best for our students, in terms of their performance in the course and retention of core concepts. Students' performance was assessed via their responses to 25 core concept questions, used as part of embedded assessment, along with overall course grades and withdrawal rates.

The specific considerations for the present study were:

1. Retention of knowledge base evaluated through their responses to core concept questions.

2. Final grade distribution for students enrolled in the three different types of courses.

3. Which courses had the highest withdrawal rates?

Methodology

Based upon the core concepts taught in this course, a set of questions was used to assess students' retention of the core content knowledge base in Traditional, Hybrid and Writing-Intensive (WI) courses. These questions are administered as part of the Lecture Final Exam in all sections of this course offered in the department.

In Traditional and WI courses students had three hours in face to face lectures each week, and a three hour weekly laboratory session throughout the semester. They were provided with PowerPoint notes through Blackboard prior to the class. Writing, often used as a mean of evaluating students' understanding of a certain topic, is also a powerful tool for engaging students in the act of learning itself. WI classes gave students two formal writing assignments with a series of weekly short essay (micro-theme) assignments, based on core topics covered in this course; several short essay questions used made up 35% of the Final Lecture Exam Preparation Journal. The remaining 65% was based on multiple choice questions, including the aforementioned 25 assessment questions. Students were provided with clear instructions regarding the writing component, and had the opportunity to respond to the feedback in a second draft of both formal writing assignments. Each student was asked to select two topics for the two formal writing assignments that addressed a specific, significant recent epidemic. They were provided with clear rubrics that were to be used for grading their assignments, along with check sheets to be attached to the final draft for submission.

As stated previously, the benefit of hybrid or blended instruction led to an ideal schedule for many students, with the combination of face to face classroom format and online mode of instruction that allowed student to instructor interaction, but at the same time, the convenience and flexibility of an online instruction characteristic of these type of courses (Lamport and Hill, 2012). Due to the fact that the microbiology laboratory, especially classical microbiological techniques, can't be simulated on-line, all the labs were done in person. Blackboard Course Management System was used for the delivery of course material and communication; the weekly lecture notes that were posted on Blackboard for the students in Hybrid courses were

used for face to face lectures in Traditional and WI sections. All sections met on campus for weekly laboratory sessions. The engagement of Hybrid course students was accomplished with mandatory timed weekly online quizzes that could be taken any time during the week. However, only one attempt was allowed for these quizzes. Students in all courses were provided with weekly practice quizzes with unlimited attempts, which were not graded.

Data was analyzed using Excel2013. The ANOVA and Bonferroni corrected T-test was performed to test the statistical significance of differences in data for overall course grade, responses to common assessment questions, and withdrawal rates.

Results

<u>Student Population demographics</u>

Table1 below shows that the majority of students in these courses were female and nursing students, since, as described earlier, this course is especially designed for the Allied health programs at BCC. More recently, this course was added to Medical Laboratory Technology program curriculum as a prerequisite for Diagnostic Microbiology (BIO44), so some of the students in these classes were BIO majors in MLT program.

Table1. *Student population demographics (* Transfer or non-matriculated students)*

Total N	Traditional total N=77	Hybrid=62	Writing-Intensive=40
Gender	M= 12%	M=16	M=12
	F= 88	F=84	F=88
Ethnicity	Black= 68	Black=70	Black=75
	Hispanic=30	Hispanic=28	Hispanic=23
	Other=2%	Other=2	Other=2
Majors			
Nursing	87	87	90
MLT	10	10	8
Other*	3	3	2

Comparison of Traditional, Hybrid and Writing-Intensive students' overall Final grade

An overall ANOVA was performed at 95% confidence interval (p-0.05) and results for overall course grades showed that 23 % students in Traditional and 20% in WI earned grades in A- to A range, while only 13 % students in Hybrid. The number of students with B- to B+ range was also highest in Traditional courses (almost 45 %), followed by 43% in Hybrid and 40 % WI courses. 22 % of students received grades in the C range (C- to C+) in Traditional courses, 18% in Hybrid and 16 % in WI. The number of students receiving an F was highest in WI courses (8%), and 2.5and 4 % in Traditional and Hybrid courses respectively. Course Withdrawal rates were found to be almost same in Hybrid and WI courses (16%) and only 5% in Traditional courses.

Table 2. *Percentage Data for overall course grades in different courses*

Completed Course Grade Total % of Students with Grade

Traditional	% of students
A	23.08
B	44.87
C	21.79
D	2.56
F	2.56
W	5.13

Hybrid	
A	12.99
B	42.86
C	18.18
D	6.49
F	3.90
W	15.58

Writing-Intensive

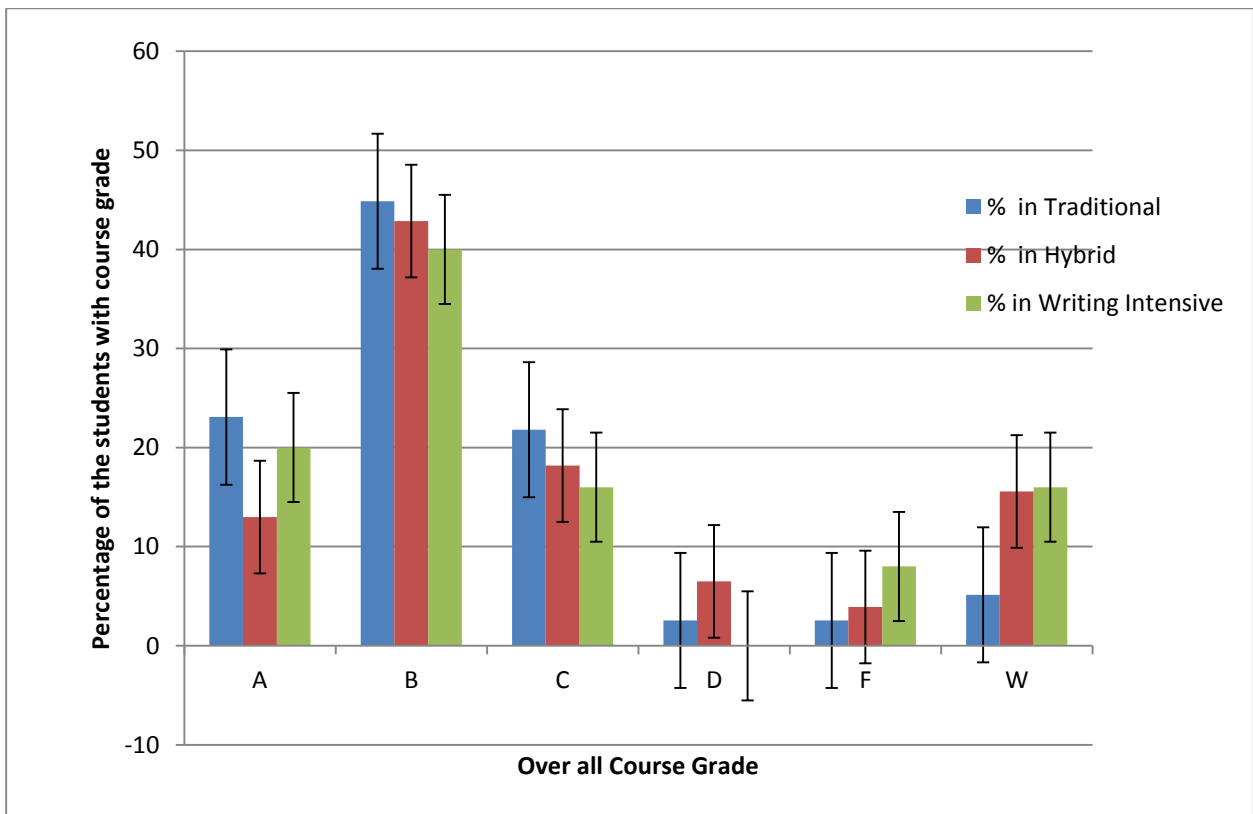|	
A	20
B	40
C	16
D	0
F	8
W	16

Figure1.*Percentage course grades in three types of courses*

The results of ANOVA revealed that the differences in overall grades were not statistically significant (p-value=1). This was confirmed by Bonferroni corrected T-test. Results of ANOVA for overall course grades (%) are shown in Table 3 below.

Table 3. *ANOVA for overall course grades*

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.00001	2	0.00001	0.00000003	1	3.682320344
Within Groups	3272.863417	15	218.1908944			
Total	3272.863428	17				

Table 4. *The results for percentage correct responses to assessment questions.*

	Traditional % correct answer	Hybrid % correct answer	Writing-Intensive% correct answer
Q1	66.22	78.81	80.00
Q2	38.40	64.14	55.00
Q3	62.25	64.14	50.00
Q4	40.39	47.84	55.00
Q5	32.44	28.28	35.00
Q6	36.42	72.29	55.00
Q7	6.61	34.80	40.00
Q8	78.14	83.70	85.00
Q9	38.40	62.51	70.00
Q10	42.38	41.32	55.00
Q11	54.30	67.40	80.00
Q12	36.42	54.36	50.00
Q13	58.27	75.55	70.00
Q14	28.47	57.62	45.00
Q15	34.43	67.40	60.00
Q16	96.03	95.11	100.00
Q17	20.52	33.17	60.00
Q18	56.29	73.92	65.00
Q19	46.35	49.47	55.00
Q20	84.10	54.36	95.00
Q21	8.60	41.32	65.00
Q22	76.16	93.48	90.00
Q23	74.17	70.66	70.00
Q24	74.17	69.03	50.00
Q25	14.56	75.55	60.00

Comparison of Traditional, Hybrid and Writing-Intensive students' responses to core concepts assessment questions

The results from responses to assessment questions (Table 4) were compared using bar graphs (Fig. 2-6) and statistically analyzed by ANOVA (shown in Table 5). Responses of students in Traditional courses were almost always lower than the ones in Hybrid or WI courses, although over all grades were higher (statistically non-significant) for students in Traditional courses, with lowest withdrawal rates.
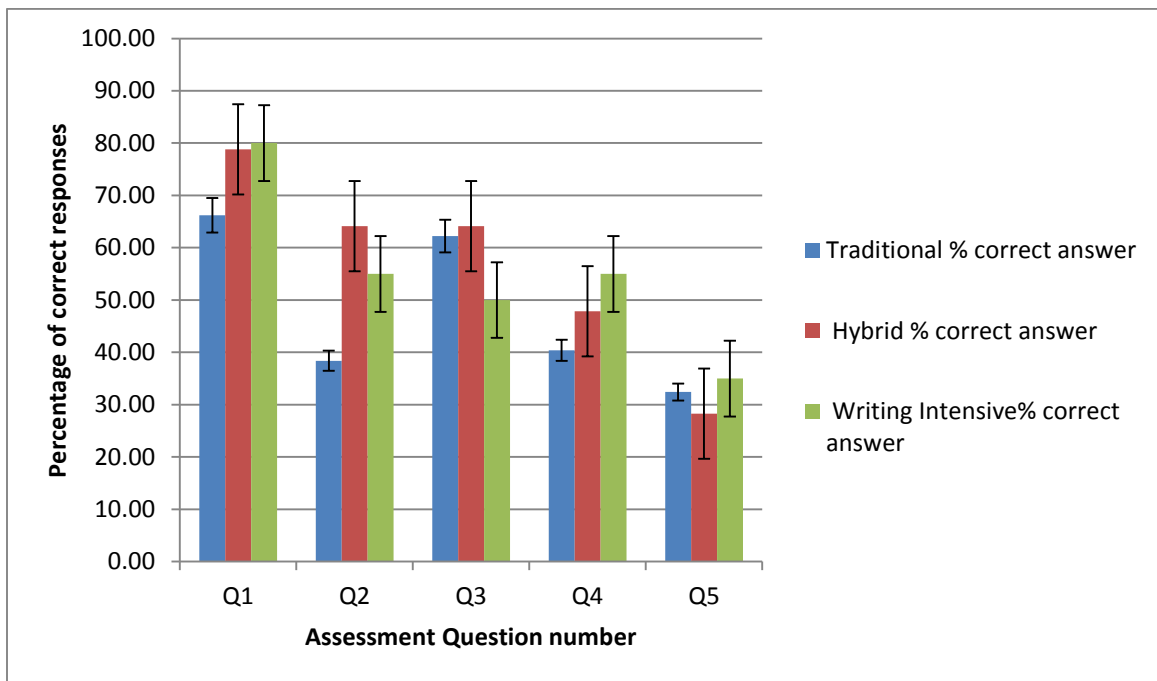

Figure 2.*Percentage of correct responses to embedded assessment questions1-5.*
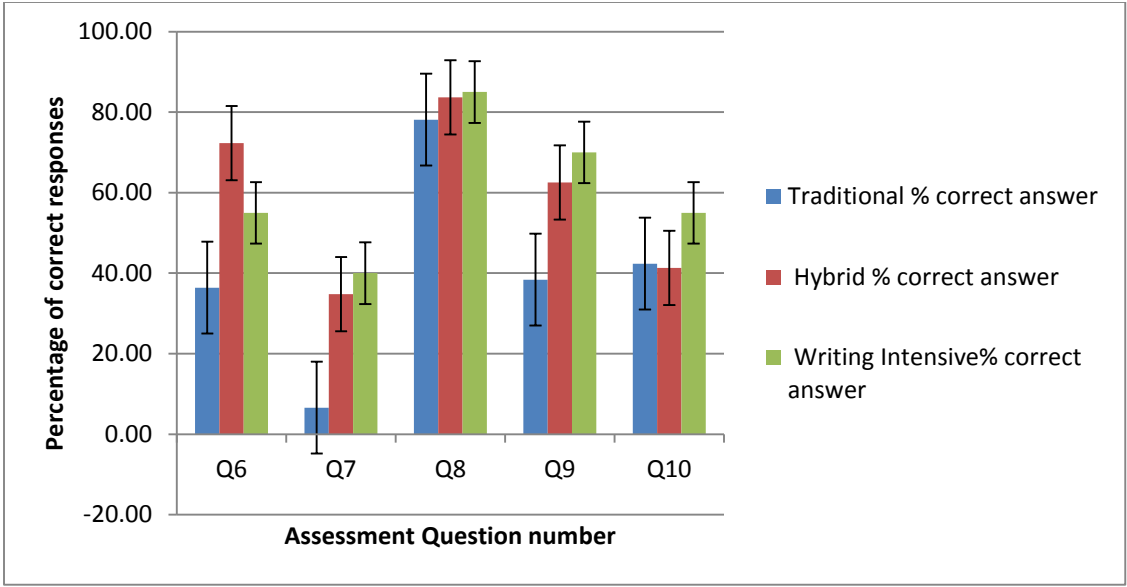
Figure 3.*Percentage of correct responses to embedded assessment questions 6-10.*
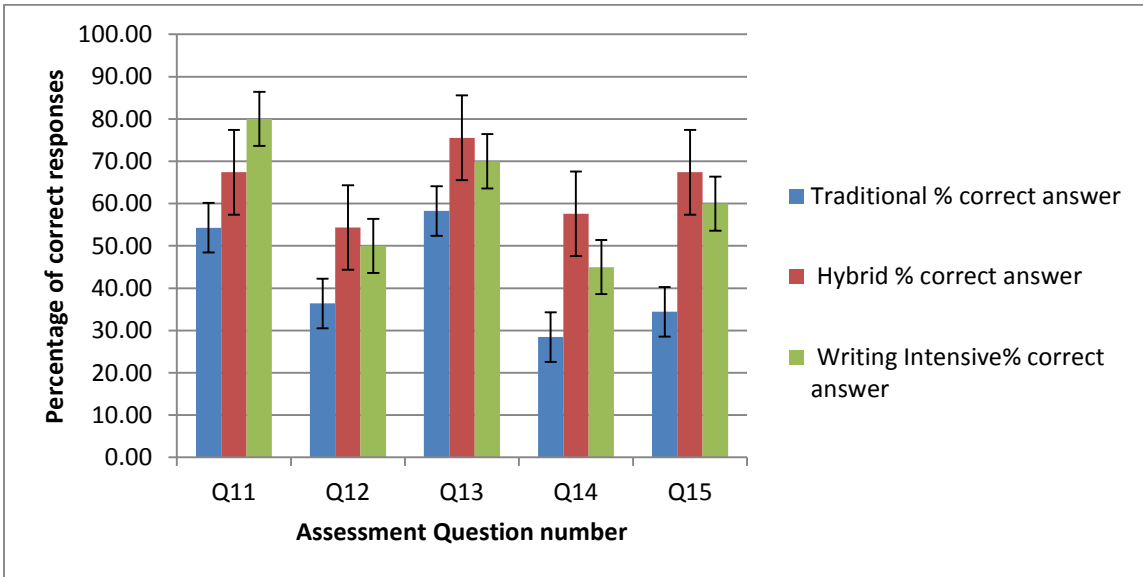

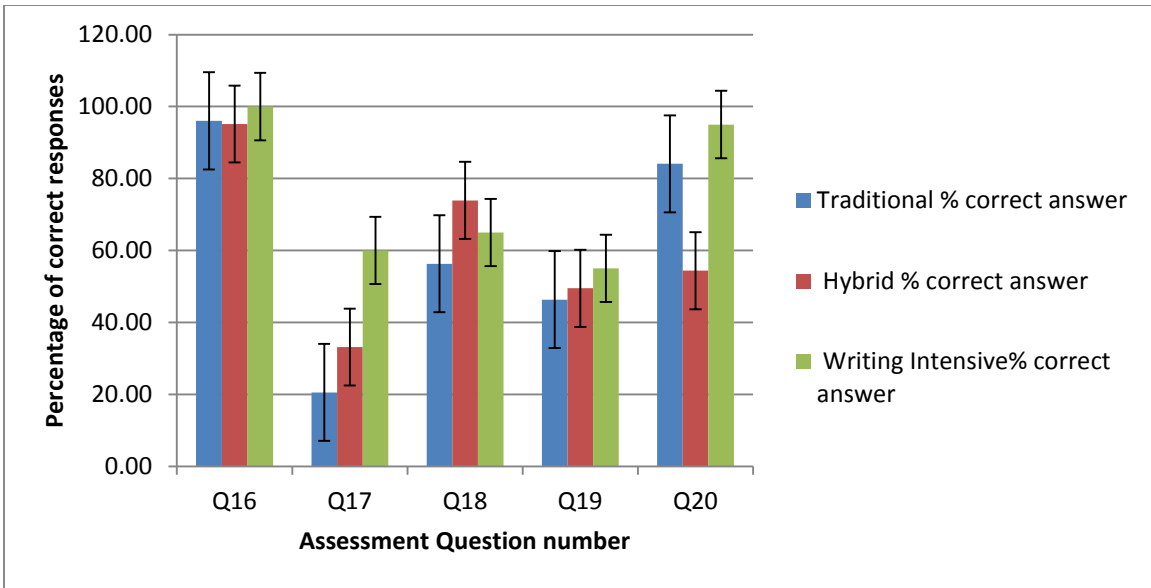Figure 4. *% of correct responses to embedded assessment questions 11-15.*

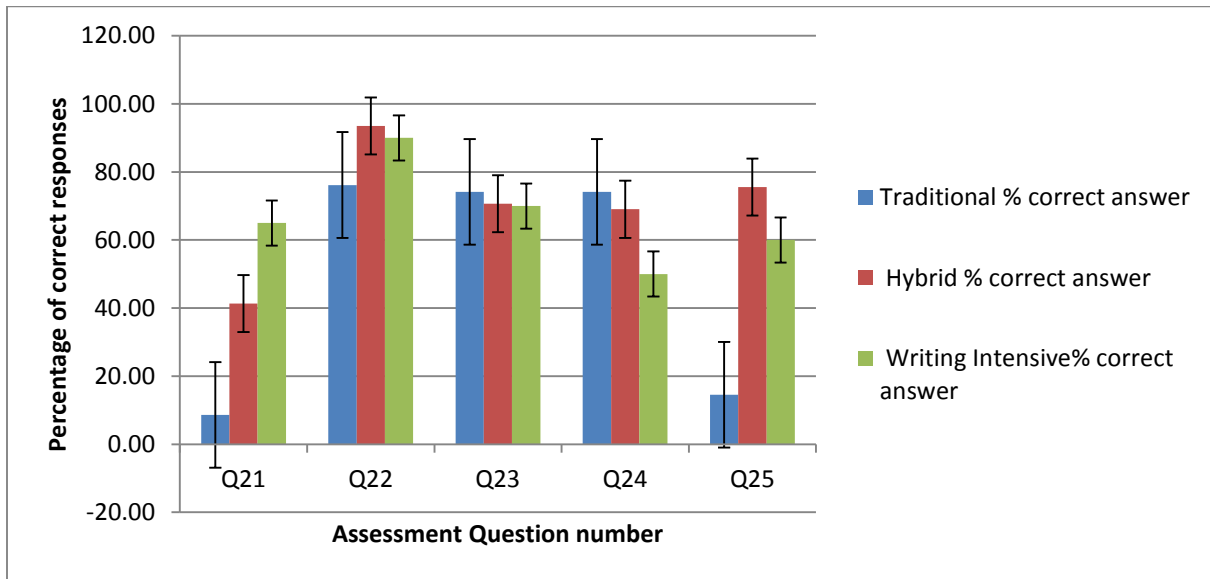Figure5.*Percentage of correct responses to embedded assessment questions 16-20.*

Figure 6.*Percentage of correct responses to embedded assessment questions 21-25.*

ANOVA (Table 5 below) showed that scores for at least one of the groups were significantly different from the others (p-value = 0.012). Bonferroni corrected T-test analysis revealed that there was no significant difference in responses to assessment questions for students enrolled in Traditional vs. Hybrid courses as well as Hybrid vs. Writing -Intensive. However, the difference was statistically significant for students in Traditional (mean=48) Vs WI courses (mean 64).

Table 5. *ANOVA for % of correct responses to embedded assessment questions.*

ANOVA Results for Assessment questions

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	3703.240	2.000	1851.620	4.688	0.012	3.124
Within Groups	28437.922	72.000	394.971			
Total	32141.162	74.000				

Discussion

A number of studies have highlighted the advantages and challenges of Traditional, Hybrid and Online courses (Black, 2002; Ernst, 2008; Wingard, 2004). This study compared Hybrid courses with Traditional and Writing-Intensive courses to help us decide what modality will work best for our students and help make recommendations to adjust the number of courses offered in each of these modalities in our department. There are varying reports regarding student learning online. Some studies suggest no statistical differences in student academic performance in Online and Traditional courses (Kraweice, Salter and Kay, 2005; Melton etal. 2009). On the other hand, a large number of studies show higher student achievement in Hybrid courses compared to Traditional (Tardai etal. 2005). According to one study, mere use of Blackboard to

access course information and notes led to better grades (DeNoui and Dodge, 2006). Another study demonstrated that students performed much better in a Hybrid course than a completely online one (Collopy and Arnold, 2009).

The present study compared student success in terms of overall course grades, percentage of correct responses to a set of assessment questions based on core concepts and General Education proficiencies and withdrawal rates, in three different types of Microbiology and Infectious Diseases courses, Traditional, Hybrid and Writing-Intensive. Although there has been much interest in the use of writing in disciplinary courses, there has actually been relatively little formal inquiry into what happens in such courses once writing has been incorporated. It is a well- known phenomenon that Hybrid instruction is becoming more and more popular, due to the added advantages of being more efficient in use of space, offering flexible schedules for working adults, and reducing the time as well as the cost of commuting to and from campus. In addition to several published reports of student's success, these benefits provide some of the strongest reasons for city colleges in urban settings, such as Bronx Community College, to offer more Hybrid courses across the disciplines. Between 2002 and 2011, the online enrollment share of total enrollment in postsecondary institutions rose from 9.2% to 32% (Allen & Seaman, 2013). A recent U.S. Department of Education Survey (Means, Toyoma, Murphy, Bakia, & Jones, 2010) concluded that hybrid and online modalities are more effective than traditional instruction. However, this study found no statistically significant difference in withdrawal rates or over all course grades for students in Hybrid versus Traditional sections. A breakdown of results for overall course grades showed that students in Traditional sections earned the highest percentage of A-to A grade range(23 %), followed by WI (20%), while only 13 % students in Hybrid

earned A- to A grades, although the differences were found not to be statistically significant. A study done by Alison etal. (2015) in an introductory course in Microbiology reached the same conclusion while comparing student outcomes in Traditional versus Hybrid courses. With the continuing development of online instructional applications, many colleges and universities have begun to offer online courses as an alternative to traditional face-to-face instruction. Sixty-seven percent of colleges and universities agree that online education is the most logical long-term strategy for their institution (Hillstock, 2005). However, there are reports that question the quality and student responsiveness to online education and reflect on the reluctance to adopt this mode of education (Yang and Cornelius, 2004). It is safe to say that just like most things in life just as there are advantages, there are also disadvantages to the online instruction delivery method. Various studies from the initial era of online instruction history reported the sense of disconnect among students in online courses due to lack of face to face instruction (Guhu, 2001; Graham, 2001), while other reports indicate large successes (Hoffman, 2002; Meyer, 2002; Kaczynski and Kelly, 2004).

Keeping in mind such issues as "What are the objectives?" and "How are the objectives to be met?" will also facilitate the decision regarding the best medium to use. Different instructional strategies may or may not result in the achievement of course learning objectives. Once the decision as to which delivery mode is most appropriate has been made, the material must be organized in such a way as to enhance learning. This may mean throwing away some current practices and replacing them with new approaches to teaching that will meet the needs of a particular student population. Evaluation and rebuilding of the course is essential, this remodeling of the courses should be based on the assessment results. (Black, G. Spring, 2002).

Writing has often been characterized as having special powers as a tool for promoting learning, as evidenced by the belief that "writing across the curriculum" should be established as a means of promoting thinking in all disciplines, "even those in which a written product is not historically valued or useful" (Peter Smagorinsky, 1995).The Writing across the Curriculum (WAC) program was initiated at BCC a couple of decades ago, and there is a great deal of interest in incorporating writing across the curriculum at BCC since taking WI courses is a graduation requirement. However, research on the effectiveness of WAC courses has been limited. It has been reported that research on WAC often can be conducted to investigate of the effectiveness of WAC on student learning (Applebee Newell, 1981). One of the goals of this study was a responsible attempt at assessment to make links between students' measured proficiencies and what has or has not happened to them in the full context of this WI course, compared to other modalities, especially if, as we hope, assessment is to lead to reform in curriculum design. Writing-Intensive courses provide a means of addressing declining student writing proficiency. These courses use various types of writing assignments to promote deeper understanding of the course content. The goals are to develop students as good writers by linking their writing proficiency with their desire to learn more about the field of study, engage in emerging issues/questions in the discipline, and have students become participants in academic discourse (Ahlawat, Miller, & Shahid, 2011). The results of the study can add to our understanding about how a writing-intensive course should be linked to overall learning goals for a course, what elements should be included in a writing-intensive course to accomplish learning goals and student learning outcomes, what assessment measures can be used to evaluate student performance, and how they can be linked to overall learning goals.

The present study compared the student outcomes in Traditional and Hybrid courses with Writing-Intensive courses. Data analysis revealed that there was no statistically significant difference in the withdrawal rates and over all course grades for the students in all three modalities. Comparison of the answers to 25 assessment questions revealed that although there was no significant difference in responses to assessment questions for students enrolled in Traditional Vs Hybrid courses as well as Hybrid vs. WI, the difference was statistically significant for students in Traditional (mean= 48) Vs WI courses (mean = 64). This difference may be due to the fact that students were given microtheme, essay-type weekly writing assignments based on the core concepts used to develop the common assessment questions. These essay-type questions were used as preparatory Journal for the WI part of the Final Lecture Exam, which perhaps led to the retention of knowledge base. Similar findings were reported in discipline-specific writing to learn studies by Susan Peck MacDonald and Charles Cooper (1992) and Robert Cannon (1990).

The students in Hybrid courses had to take weekly graded lecture quizzes, which might have contributed to increased retention of core concepts as compared to students in Traditional sections. So a modality that combines the writing with the resources that a hybrid course offers may lead to a synergistic positive effect. The fact that students' overall grades were higher and withdrawal rates were lower in Traditional as compared to Hybrid and Writing-Intensive sections is also noteworthy. There is enough research supporting the potential advantages of hybrid course delivery system. Especially in this era when technology is an essential part of everyday life, there is a need to redesign traditional courses using a Hybrid model. Hybrid instructional method is a perfect integration of the conveniences of online learning and traditional face to face

instruction in the learning process (Humphries 2009, Rovai and Jordan 2004, Colis and Moonen 2001). Although integrating technology into the classroom in small steps is part of a natural evolution of teaching and learning, a blended learning system includes a committed, sustained, and well thought-out implementation plan, combining appropriate technology with traditional classroom interaction, so that it leads to better outcomes for students (Garrison and Vaughan 2008; Mayers etal., 2006; Bonk and Graham, 2006). A study conducted by Riffell and Merrill (2005) also found that the hybrid course format appeared to help all minority groups in their student population perform better in the laboratory. While completely online learning might create a sense of isolation among students, blended learning provides the effectiveness and socialization opportunities of the classroom.

It is critical that the determination of delivery mode for course material rest upon the question: "Will this enhance student learning?" A careful analysis of the course material must include determining what content can be used effectively online. Such items as syllabi, lecture notes and assignments can be made conveniently available to the student when placed online; additionally, analysis of course material should be founded on the question of what will actually be learned. This study suggests that identification and inclusion of the core concepts and themes hardest to grasp, incorporated through writing based on these core concepts and themes and integrated with Hybrid course modality, could provide a new tool to further promote the educational benefits of Hybrid instruction, rather than just providing a convenience to students.

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Engaging Students with Technology in an Asynchronous Learning Environment

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Engaging Students with Technology in an Asynchronous Learning Environment

Abstract

Millennial students are driving change in learning environments around the world. Unlike previous generations, Millennials' constant exposure to the Internet and other digital media has shaped how they receive information and learn. In order to adapt to Millennials' learning preferences, educators are adapting to using different technology to engage with today's students. This paper discusses how to flip hybrid classes and use free technology that is independent of the learning management system to build, manage and deliver content to students, while keeping them engaged inside and outside of the classroom.

Introduction

Our society is extending from the Information Age to the Interaction Age, (Milne, 2007). In the Information Age, the focus was on delivering and accessing digital content. In the Interaction Age, the role of digital content has broadened to something around which people engage and interact. Twenty-first century teaching practices have been influenced to a large degree by the Interaction Age. Learning has evolved from traditional face-to-face lectures and textbooks in a brick and mortar classroom to online lecture delivery methods, use of mobile digital devices, augmented reality, virtual reality, and use of wiki, blogs and various collaborative websites. In conjunction with this movement, teaching and learning practices have also evolved.

All of this has led to a movement towards a self-directed, contextualized, engaged learning environment.

Research has demonstrated that engaging students in the learning process increases their attention and focus, motivates them to practice higher-level critical thinking skills, and promotes meaningful learning experiences, (Kuh, Cruce, Shoup, Kinzie & Gonyea, 2008). Instructors who adopt a student-centered approach to instruction increase opportunities for student engagement which helps everyone more successfully achieve the course's learning objectives.

Further, researchers have demonstrated that today's students have a penchant for highly active and participatory experiences inside and outside of their classroom, (Oblinger, 2006). This has offered an opportunity for teachers to design their instruction and delivery methods to suit the needs of today's students in the Interaction Age. More and more, instructors are adopting engaged learning in different ways and using different learning technologies to enhance the learning experience. However, there are some challenges that instructors face in this regard. First, technology is expensive and often instructors are restricted to using technology that is compatible with the learning management system used in their institutions. Second, there is a learning curve for instructors as they adopt new and varying technology to use in their classrooms. Finally, instructors need to apply the new technologies as a means to improve learning and understanding rather than as an end in and of itself.

This study was conducted with three instructors who taught three unique hybrid courses which were previously taught through the traditional face-to-face modality. The individual hybrid courses were flipped by adopting an engaged learning environment which was enhanced through the use of technological innovations. The purpose of this paper is to discuss how the

researchers flipped their classes, incorporated the specific indicators of an engaged learning environment and incorporated technology that is cost effective and independent of any learning management system.

Motivation for Adjusting Teaching Modality

The courses assessed through this study were considered as "difficult" by students. Even though these courses are required for graduation, based on data maintained by the instructors over several semesters, typically 1% to 2% of the students withdraw from the courses. Of those who remain, 10% to 20% are unable to successfully complete the courses. Historically, there are many more students that earn a 70% to 75% (a letter grade of C) rather than 90% to 100% (a letter grade of A) in the traditional face-to-face classes.

This study was conducted in a community college located in Queens, NY. The challenges faced by the students of this institution are as follows: 1) students commute to campus, 2) students have multiple jobs, 3) students have, among other commitments, family responsibilities. The day to day demands placed on this student population have continued to increase. Many students report the requirements of family, work, and school often seems overwhelming. Sometimes, due to external circumstances, they are unable to attend class, and when they do attend, they come unprepared. Further, the college has a very diverse group of students from varied ethnic and cultural backgrounds. Some of them are first generation immigrants and many are first generation college students. The American Association of Community Colleges (AACC

2015) reports that 36% of students are the first generation in their family to attend college. The vast majority of these community college students are not native English speakers, and despite the language proficiency that they have to demonstrate, they have difficulty following lectures in English. Students frequently are disinterested and disengaged in the classroom. They appear to be distracted during lecture sessions, and seem to have no interest in the subject matter. The researchers addressed these issues in two ways. First, by making instructional materials available for students when they were unable to attend class and second, by providing access to the instructional materials using a self-paced delivery mode. The self-paced mode allowed students to review the instructional materials at their own pace and as frequently as they felt necessary. The intention was to foster student engagement in the learning process both inside and outside the classroom, to encourage students to take responsibility for their own learning, and to help students become life-long learners.

These issues were addressed by transforming the three face-to-face courses into asynchronous or hybrid courses. Lecture capture methods, like Camtasia, were used to create instructional videos that were placed on the learning management system and were available to students when they needed them. Furthermore, YouTube videos and other online resources were incorporated into the learning management system. These elements allowed the face-to-face portion of the hybrid classes to become more learning centered rather than teaching centered. Since lecture notes, reading assignments and instructional videos were already available to students, the in-class sessions were repurposed for more knowledge application, which included problem solving, performing analysis, and holding discussions in class. The students were more engaged and they were eager to participate in discussions and collaborative

activities. These modality changes allowed for the observation of peer to peer knowledge transfer during the face-to-face hybrid sessions.

Technology Enhanced Hybrid Flipped Classroom

The flipped classroom is a pedagogical model where students are exposed to new material outside of the classroom via lecture videos, assigned readings, or other online multimedia resources, while the traditional face-to-face classroom sessions are repurposed for assimilating and applying the knowledge gained, through discussions, hand-on activities, and problem-solving. The students gain *first-exposure learning* prior to class and focus on the *processing* part of learning (synthesizing, analyzing, and problem-solving) in class. In terms of Bloom's revised taxonomy (Prensky, 2001), this means that students are doing lower levels of cognitive work, such as gaining knowledge and comprehension, outside of the classroom, and focusing on higher level cognitive activities like application, analysis and synthesis and problem-solving in class, where they have the support of their peers and are guided by their instructor. This approach contrasts with the traditional model where the first-exposure to new material occurs in the classroom and students assimilate and apply knowledge through homework. Hence the term "flipped classroom."

Hybrid classes can facilitate the flipped model very effectively. The instructional videos and other online resources are already available on the learning management system. Consequently, class time is used, not for teaching and lecturing, but rather for learning.

In the flipped classes for this study, prior to a face-to-face session, students were required to complete a reading assignment from the textbook, review the lecture slide/video or the micro lecture and watch any relevant videos that were assigned by the instructor. If the students encountered any learning issues or had questions, they could contact their peers or the instructor via a Discussion Forum available in the learning management system. Prior to coming to class the students were also required to complete a short online quiz and/or a low level skills worksheet that helped the instructor assess student understanding of the material. The students were given credit for accomplishing this task. Consequently, it was noted that all students participated in this activity and they were coming to class prepared to participate effectively during in-class activities.

The face-to-face session began with the instructor highlighting and/or reviewing the important issues related to the topics covered online. Students were then given a case study, a short writing assignment or problems to solve, as deemed appropriate by the instructor. Sometimes the students were divided into smaller groups that allowed them to work collaboratively and facilitate peer to peer knowledge transfer. The instructor is available in the classroom to guide and provide assistance as needed. Thus, the role of the instructor in the classroom is one of "guide on side" rather than one of "sage on stage." The role of the students is one of cognitive apprentice (Baker, 2000).

In the flipped classes in this study, the researchers implemented an engaged learning environment based on some specific indicators of engaged learning (Angelino, Williams & Natvig, 2007). Engaged learning embodies the principles of active learning and collaborative learning. Active learners are self-regulated, self-directed, motivated learners who take responsibility for

their own learning and are able to transfer knowledge to solve problems creatively. Active learning requires students to participate in class, as opposed to sitting and listening quietly. Engaged learning also involves being collaborative, i.e., valuing and having the skills to work with others. In the engaged learning environments in this study, students were required to reference and integrate resources from beyond the boundaries of the classroom, work in collaborative groups and work towards a deliverable.

Varying degrees of technology were incorporated to enhance the engaged classroom environment. Apart from using technology that is already available within the learning management system, functional technologies were used to build engaging course content, efficiently manage course content, and, to interact with students, both inside and outside of the classroom. The benefits of the tools employed in this study is that they are cost effective (i.e., free) and they are independent of any learning management system. These tools have the potential for supporting student learning in creative and innovative ways, while keeping them engaged and interested.

Content Creation

There are several tools available for course content creation that are independent of a learning management system. This study employed PowToon, ScreenChomp and Educreation, depending upon the situation and needs.

PowToon is a web based application that is used for creating engaging presentations and animated videos with a cartoon like feel. It lets the instructor incorporate humor and visual

appeal into the presentation of lecture slides or micro lectures, which can be used as a creative and engaging alternative to PowerPoint slides. PowToon provides the instructor with prerecorded music, characters and props, several that are animated, which can be used in preparing lessons. It is also possible to upload music to add to the presentation. Each frame/slide in PowToon is preset to 10 seconds and an additional 10 seconds can be added to each. PowToon also provides ready-made templates that can be modified for the instructor's specific needs. The free version is limited to five minutes per presentation, an unlimited number of presentations can be created, and they can all be shared and viewed online through the PowToon site.

The researchers in this study created PowToon micro lectures to explain concepts and provided students with a link to the PowToon site in the learning management system. For example, in an accounting class, PowToon was used to create animated videos and slide shows to explain accounting concepts such as debits and credits, and financial statements. PowToon videos were also used to explain the three legal forms of a business. The use of the animated characters to represent a sole proprietor and a partnership brought to life each form of business. In a finance class, PowToon was used to explain the functions of the Federal Reserve System and to explain monetary policy. PowToon is able to bring concepts alive for students, hold their attention and help them retain information.

The free ScreenChomp app can be used to create video lectures with an iPad and post them on the ScreenChomp website, where students can then download the recordings as MPEG-4 files. The app has the appearance of a whiteboard and allows the instructor to mark it up, post images or scroll through. This takes place in the form of a video, in which the instructor can record

one's voice while writing on the whiteboard. Students can watch the video as many times as needed.

In this study, ScreenChomp was used to explain how to work through a problem, specifically when students need further instruction on a specific topic. ScreenChomp is good for shorter lessons, for providing students with quick detailed responses to homework problems, or reinforcing topics that they did not grasp in class. For instance, ScreenChomp was used to demonstrate statistics problems and accounting problems. Using the voice recorder personalizes the instruction and the student feels that the instructor is providing individualized guidance.

Educreation is a free presentation, teaching and storytelling tool for the classroom. It is a recordable interactive whiteboard that captures the instructors' voice and handwriting as they explain a concept or work through a problem. It can be used to produce short video lessons that can be saved as a public or private file and it can be shared with the classroom as a whole or with an individual student. Educreation is different from ScreenChomp in that it allows the instructor to create a video of several pages of slides. This tool was used to create micro-lectures on specific topics that would be beneficial for students to access.

Creating lessons in Educreation and ScreenChomp is similar to presenting to an actual class of students. The choice of different color markers allows instructors to highlight and emphasize certain aspects of the lesson just as the instructor would on the whiteboard in a face-to-face classroom. The ability to upload backgrounds is an excellent feature for creating accounting lessons on journalizing and posting to ledgers. With Educreation, one can create several pages with different backgrounds then record a lesson in which the background content is animated. Educreation has been particularly helpful in the flipped Statistics class where it has

been used to demonstrate how to solve problems. Students have the added advantage of referring to the video repeatedly when needed.

Content Management and Content Delivery

Blendspace is a free web tool for instructors to collect, annotate and organize digital resources in one place to form a bundled, interactive lesson for students in an e-learning environment. With a free account one can create a "canvas" and easily pull in other material like videos, web links, documents and images either from the web or from one's own computer. Then the instructor can make this multimedia canvas available to students by using one URL link. Blendspace also gives the instructor the ability to add multiple choice quizzes into lessons. Consequently, Blendspace is more than just a tool for sharing information, it can be used to assess a student's understanding of material right that is presented in the canvas. Blendspace can even autograde the assessments if the correct answer choices are made available.

Blendspace has been used in this study in two ways to support engaged learning: for content management and for content delivery. For example, in a Computer Applications course, Blendspace was used to create a canvas which contained instructional material in the form of Educreation videos, PowToon videos, ScreenChomp videos, PowerPoint lecture slides, YouTube videos, and other documents simply by dragging-and-dropping these elements onto the canvas. Since all of this content is managed using one URL, this is very convenient for students, as all of their material is contained within one space.

Blendspace facilitates an engaged e-learning environment by enabling self-paced student content engagement, in which students can absorb the content at their own pace and can customize their learning experience through self-directed knowledge acquisition. This creates a beneficial scenario for both faculty and students. Faculty can efficiently and seamlessly manage their digital content and students can experience unfettered access to a montage of learning material that satisfies their personal and individualized learning needs.

Student Interaction

Blackboard Collaborate is a collaborative tool that is available in the Blackboard learning management system. While Blackboard Collaborate is not independent of the learning management system, almost all learning management systems include a collaborative tool. In this study the instructors used Blackboard Collaborate for online discussions with students. The electronic whiteboard within the system is particularly helpful for providing a digital space for instructors to explain solutions to problems in an interactive online session. Students are able to record these learning sessions for repeated viewing at their convenience, even after the session is over.

Poll Everywhere is a free application that promotes student participation in class. It can be used directly from the web or can be embedded in a PowerPoint slide. Instructors can create a poll for a specific class and students can vote by using their cell phone to text message their answer. The polls update seconds after students enter their votes, and the results can be displayed on the presenting screen.

In a face-to-face session of a hybrid flipped class, Poll Everywhere was used to immediately gauge the classes' understanding of concepts. It can be used to challenge perceptions or misconceptions (create cognitive dissonance). The polls can be simple multiple choice questions and students can text their answers or the polls can be open ended questions, asking students to describe an experience. The words that the students use to describe an experience will show up on the presentation slide. This is a way to share everyone's thoughts in class. Providing students an opportunity to move beyond passive learning into more active learning can refocus their attention and invigorate the learning process.

Conclusion

The purpose of this paper was to discuss how three different classes, taught by three different instructors were flipped, to demonstrate how some specific indicators of an engaged learning environment were incorporated into the flipped classes and to discuss how cost effective stand-alone technologies were utilized to support student engagement and learning. The flipped class model in this study incorporated the following five components:

1. **Student-centered content exploration** through the use of reading material, micro lectures, and videos.

2. **Instructor/peer support** administered through the learning management system's collaborative discussion feature.

3. **Mini-assessment/correction activities** that allow the instructor and the student to stay abreast of student progress.

4. **Topic alignment discussions** in which the instructor highlights important topic issues and guides students in creating a framework for knowledge exploration.

5. **Facilitated "head/hand" experiences** in the classroom which allow the students to put into practice what they have learned.

Flipping a class can be achieved in several different ways. No one size fits all. This study offers five broad-based components that instructors can use as a guideline for transitioning from a traditional class to a flipped class. The benefit of this flipping model is that it allows instructors to flip a class using a modularized approach by tackling component areas singularly or comprehensively.

This study demonstrates how a flipped class model can support and promote an engaged learning environment. As students are introduced to and explore content areas, they are simultaneously encouraged to become active learners who independently manage their interaction with online content to gain knowledge at their own pace. In the face-to-face sessions, the instructors observed that students were engaged in active and collaborative learning. Students were active participants in group work activities, exploration and integration of resources from beyond the boundaries of the classroom, and were focused on the completion of specific deliverables. Both students and faculty benefit from this level of student engagement. Student confidence and knowledge grows as "learning and producing" becomes the focus, instead of "lecture and presentation." Finally, this paper also discussed how technology can be used to effectively support flipped pedagogy and aid student engagement in an economical and manageable way. There are several applications that can be used to create engaging content,

maintain and deliver content efficiently, and interact remotely or face-to-face with technology driven students.

This paper is limited in that the instructors report their observation of what occurs in a flipped class with an engaged environment that is enhanced further with the use of technology. The paper does not incorporate a rigorous empirical study. It will be beneficial to conduct an empirical study that examines student attitudes towards the flipped pedagogy, the technologies and student content and course engagement, specifically exploring to see if student confidence, satisfaction, and outcomes are increased from the use of these technologies. In addition, future studies should also explore faculty experiences with flipped pedagogy technology and measure administrative and pedagogical efficiency factors.

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Exploring a Video Repository Solution for Education and Administration

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Exploring a Video Repository Solution for Education and Administration

Abstract

Online videos are used increasingly in higher education, both inside and outside of the classroom, to engage students and enhance the learning process (Sherer & Shea, 2011). Online screencasts are also frequently used, since new tools are readily available and easy to learn (Oud, 2009). Research shows that using technology to address a variety of learning styles improves learning, especially when introducing complex subject matter (Dunn & Griggs, 2000; Gardner, 2004; McLaughlan & Kirkpatrick, 2004). Research also shows that providing instruction in a hybrid modality demonstrates improved learning outcomes as compared to traditional face-to-face environments (CUNY, 2013). Finally, video accessibility for learners with disabilities has reduced the barriers students face for comprehending material (Rose, Hasselbring, Stahl, & Zabala, 2005). The College of Staten Island (CSI) has embraced the use of video technology; however, the technical challenges associated with streaming and storage have overshadowed its effectiveness in the teaching and learning environment. In order to address these challenges, CSI has researched video repository and streaming technologies. This paper will share CSI's strategy in determining the appropriate video technology to explore, as well as findings from a pilot study leveraging the video repository solution in various disciplines and administrative areas.

Introduction

Technology can create opportunities to engage students and provide interactive activities that effectively enhance the learning environment (Sherer & Shea, 2011). Challenges associated with video storage and streaming can sometimes become a monumental task as architectures and tools need to be in place to allow for concurrent usage (Dey, 2012). There are websites, such as YouTube and TeacherTube that provide an interface for video sharing; however, these services have limitations and may not provide for an adequate viewing experience (Crowell, 2011). Alternatively, pay for cloud services can be an option, as described by Dey (2012). However, these services are not without challenges, such as subscription prices, scalability, network implications, and branding.

Institutions of Higher Education are in a quandary, since the use of video technology to enhance the learning environment is grounded in research (Sherer & Shea, 2011; Oud, 2009; Frydenberg, 2008). Colleges and Universities need to arrive at a solution that provides the learning environment expected by today's digital-native learners (Dietz, 2010). Finding an appropriate solution that is affordable and scalable to foster this environment can be a challenge.

The College of Staten Island (CSI) has researched video repository solutions using a collaborative approach involving faculty, staff, and students. The objective was to find a solution that meets the following criteria: (a) easy to use, (b) secure location accessible using active directory credentials, (c) scalable, (d) ability to provide closed captioning, (e) integrates with Blackboard, (f) streaming, (g) robust searching and meta tagging functionality, and (h) flexibility with viewing permissions.

Based on this criteria, CSI focused on two commercial video repository solutions, Kaltura (http://www.kaltura.org/) and NJVID (http://www.njvid.net/) for their evaluation. Both of these solutions have similar functionalities and can support the requirements outlined by CSI. This paper will speak to the methodology CSI used to evaluate these solutions, which included the selection of a working group and technical staff, selection of the faculty and administration involved in the pilot, challenges involved in the execution of the pilot, survey results and next steps.

Technology Status at the College

The College of Staten Island (CSI) (http://www.csi.cuny.edu/aboutcsi) is a four-year, senior college of The City University of New York (CUNY) that offers exceptional opportunities to all of its students. Programs in the liberal arts and sciences and professional studies lead to bachelor's and associate's degrees. The master's degree is awarded in 16 professional and liberal arts and sciences fields of study. The College participates in doctoral programs of The City University Graduate School and University Center in Biology, Chemistry, Computer Science, Nursing, Physical Therapy, and Physics. There are 14,199 students enrolled, 13,155 of whom are undergraduates. Enrollment gender is 61 percent female, and 41 percent are classified as non-white ethnic background (http://colleges.findthebest.com/l/2757/CUNY-College-of-Staten-Island2014).

CSI has been on the forefront of providing quality education to a diverse student population (U.S. News & World Report, 2012; Washington Monthly, 2012). CSI's infrastructure provides the technology backbone that enables a variety of tools to be used in support of teaching and learning. The 10G network backbone and high speed wireless connection provides

for an environment conducive to creativity and flexibility in the learning environment. The Blackboard Learning Management System (LMS), which provides the foundation for course material in both synchronous and asynchronous modalities as well as numerous third party applications that integrate into the LMS, is among the technologies currently in use at CSI.

Despite CSI's advancements in state-of-the art technology, the selection of a video repository solution has not been the primary focus. Instead, alternative solutions are being used, such as YouTube and storing video content directly within the LMS course environment. These solutions are not considered to be ideal as they respectfully introduce challenges regarding security and storage costs. The College is, however, now ready to make investments in a video repository solution that will be used to enhance pedagogy and enhance productivity in administrative areas.

Technology Options for Consideration

There are quite a few video repository and streaming solution options available. To put this into perspective, over 400,000 results were displayed when performing a google search on the term "video repository and streaming solution." In order to assist with determining the appropriate video repository and streaming solutions to evaluate, the criteria outlined in Table 1 were considered, as well as prior relationships with vendors and familiarity with open source solutions. Based on this criteria, The College of Staten Island (CSI) focused on two commercial video repository solutions, Kaltura (http://www.kaltura.org/) and NJVID (http://www.njvid.net/), for evaluation.

Table 1

Video Repository and Streaming Solution Criteria

Feature	Description
Secure Streaming	Secure end-to-end encrypted streaming of videos and audio files from streaming servers to end users.
Visibility Options	Content visible to specifics users or groups based on role attributes
Collaborative Platform	Ability to collaborate with other higher educational institutions
Commercial Video Licensing	Support commercial licensed educational videos
LMS Integration	Allow for linking and embedding videos within Blackboard
Robust Searching Capabilities	Advanced full-text search capabilities
Archival Preservation	Original content preserved and can be retrieved any time
Closed Captioning	Users can create captions on video content
Robust Administrative Tools	Provide fine grained administrative controls to manage hierarchy and permissions.
Reporting and Analytics	Quick and easy reporting tools that provide detailed statistics on usage.
Support and Training	Extensive support
Ease of Use	Integrated easy to use solution

Methodology CSI used to evaluate these solutions

A working group was formed in order to assess the feasibility of Kaltura and NJVID. This group consisted of faculty from Education and Media Culture, as well as administrative staff from the Library and the Office of Technology Systems. The group received formal presentations from both vendors and provided anecdotal feedback as outlined in Table 2.

Table 2

Feedback from NJVID and Kaltura Presentations

NJVID	Kaltura
Simple and straight forward	More commercial
Anchored in our world	Has close captioning but additional price by a 3rd party
Not as commercial	
Price point	Doesn't handle digital rights management
Commercial video content	Overwhelming
Integration with LMS and AD	Very robust
Consortium	Has all bells and whistles
Hotspots disappearing	
Assistive technology supported but not literal	

Based on these results, the group decided to move forward on piloting NJVID and proceeded to set up the pilot environment. Project leads from the Library and the Office of Technology Systems were assigned administrative roles in order to develop the site, working closely with NJVID. In addition, using a "train-the-trainer" model, these individuals provided a hands-on workshop for the team who would be using the technology for teaching, learning, and

administrative purposes. Ample documentation and video tutorials were provided by NJVID, created specifically for this project, and made accessible through the CSI website. (see Figure 1).

Figure 1. CSI webpage created for NJVID pilot.

From "College of Staten Island website," 2015. Retrieved July 16, 2015 from

http://www.csi.cuny.edu/technologysystems/njvid/.

NJVID was piloted from March through May among faculty and administrators. Key users were from the School of Education, Media Culture, Library/Media Services, and the Office of Technology Systems. The following details how each of the areas used the repository and describes opportunities and challenges.

School of Education

NJVID was piloted in two small courses, one undergraduate and one graduate, each with five students. In the undergraduate course, students were learning about science curriculum and standards for secondary schools. Video assignments required students to collaborate and develop a video explaining the standards documents, how to find information in the standards documents, and how to use these documents to align lesson topics with grade levels of K – 12 students. The NJVID repository was used by the students to upload video and by the instructor to review video and provide feedback.

In the graduate course, all students were middle school mathematics teachers. The key assignment of the course was the development and teaching of a lesson plan that addressed student misconception. Students had to videotape the whole lesson and upload their videos to NJVID. Students were asked to select a 10-15 min clip of their lesson video that demonstrated the activity that specifically focused on the misconception being addressed in the lesson and used the NJVID option to develop clips with annotation. The annotation explained what was happening in the classroom and whether the activity met the objectives they setup for their lessons. At the end of the semester, each student prepared a presentation for the class about the lesson which included the video clip they selected from the lesson video.

Media Culture

The department of Media Culture found the search feature in NJVID particularly useful. The ability to add detailed metadata about the film genre provided a search functionality that was similar to library cataloguing. It is not uncommon for faculty in Media Culture to show obscure films. These films are not easily found on YouTube, which lacks the ability to add detailed information. NJVID addressed this challenge by providing a robust environment to provide metadata information that facilitated browsing and searching for video content. One other advantage was the affiliation NJVID had with diverse group of commercial videos, providing easy access to a plethora of films used by Media Culture.

Library/Media Services

From the Library/Media Services perspective, NJVID offers solutions and opportunities on several fronts. NJVID allows the Library to service a growing number of faculty who create video content but do not have a simple way to store and stream their videos. Oftentimes, in the past, faculty would simply upload their videos to the University LMS; however, that would use up their entire course space allocation and violate the use policy. In an attempt to serve the needs of these instructors, we set-up a file server that permitted the streaming of Flash based videos. This was both arcane and difficult to manage—beyond a small cadre of faculty who were willing to endure its limitations. On the other hand, our group of pilot faculty easily mastered NJVID's user friendly interface. In addition to allowing faculty to upload self-created content, NJVID offers another benefit in that it works cooperatively with many commercial streaming video vendors, such as the Films Media Group (Films on Demand), Ambrose Videos, Alexander Street Press, etc. (https://www.njvid.net/commercial-vendors.php?id=1). As a result of these agreements, we

would be able, in the future, to use NJVID to host videos that were purchased from these vendors. Finally, it should be noted that Media Services videotapes many of the activities and events around campus and then stores them on tape, which makes access difficult. With the acquisition of NJVID, we hope to begin the process of uploading this wealth of video material, thereby making it available to our entire user community.

Office of Technology Systems

The Office Technology Systems (OTS) played a major role in the NJVID pilot. OTS was the project lead and was responsible for the administration of the portal, which involved setting up the interface and account creation. In addition, OTS leveraged NJVID for training tutorials related to technology topics. These tutorials also utilized NJVID's closed caption functionality. Finally, OTS provided end user support and training to the individuals who participated in the pilot.

The administration of the NJVID was relatively simple. Minor challenges associated with assigning permissions needed to be addressed. In addition, end user support was minimal as the individuals were self-sufficient, found the tool relatively simple to use, and relied on documentation provided to function.

Survey Results

A survey was distributed to 25 users, encompassing faculty, IT administrators, and students, with a response rate of 19 participants, including 3 faculty, 11 staff, and 5 students. 72% of these users had experience with posting video content in the past using other services, such as YouTube, Google, and Blackboard. Overwhelmingly, 100% of survey participants found the use of a video repository solution useful, with 66% finding NJVID either extremely or very useful. Over 92% of the users found NJVID easy to use.

In addition to surveying overall usage, specific features of the NJVID video repository were also surveyed. The ability to manage video collections seemed to be the most popular, with 65% of the users finding this feature very useful. The ability to create playlists and clips, as well as the ability to upload captions, was also found to be useful. Uploading captions and accessibility on mobile devices received favorable reviews. Finally, when asked whether NJVID should be recommended to others, 33.33% of the participants were extremely likely to recommend it to others, 44.44% very likely, and 22.22% moderately likely. These results were consistent with the satisfaction of the users experience using NJVID, where over 80% of the participants were quite satisfied.

Anecdotal survey results were also favorable, including such comments as "ease of use," "easy to upload content," "user friendly," and "excellent service," just to name a few. Responses to the question, "What changes would you make to improve NJVID?" included such comments as "make it easier to caption clips," "difficulty uploading supplementary content to the video," and the ability to have automatic closed captioning of content.

Next Steps

Based on the positive results from the pilot and the need to have a video repository solution, CSI will be expanding the pilot during the fall semester to include additional faculty and students. Many faculty from a variety of disciplines have already requested accounts and training for their fall semester classes. For example, the Modern Languages Media Center is planning to implement to facilitate access for students to video tutorials about the technologies in use in foreign language courses. The video tutorials are currently available through YouTube and the center's website, and they illustrate step-by-step processes and demonstrate sample projects.

The implementation of NJVID into foreign languages courses will enable access to foreign films through the NJVID commercially-licensed video collections and the CSI domain. Currently, the media center hosts the physical film collection of the Department of World Languages and Literatures. Faculty are required to pick up and return the desired DVD or VHS at the media center during opening hours. Students can only access the resources within the media center and its hours. The purchase of films is subject to budget availability, which often limits the number of films that can be purchased. Access to the NJVID online collections will enhance the ability to integrate authentic cultural content in the language activities in and outside the classroom, and will increase the number of titles accessible to language faculty and students.

Additionally, the NJVID online video portal could be beneficial for implementation into American Sign Language courses, where students are required to submit video assignments, or for all oral language courses that require exit interviews and oral final presentations. The ability for students to review, on-demand, their own videos will allow them and their professors to monitor their progress throughout the language sequence and create language proficiency portfolios.

In conjunction with expanding the use of NJVID with faculty and administration, CSI is working with CUNY to integrate the technology with the Blackboard (Bb) Learning Management System, as well as implementing a single sign on solution that will authenticate using Active Directory credentials. Currently, videos are either embedded in a course or accessed by clicking on a link. However, functionality allows for a seamless integration that will allow for videos to be directly uploaded from Bb. Finally, we will continue to expand the use of NJVID's closed captioning tool by working closely with the Center for Student Accessibility.

Summary

The ability to leverage technology by creating opportunities to engage students and provide interactive activities that effectively enhance the learning environment is paramount to the success of education (Sherer & Shea, 2011; Oud, 2009; Frydenberg, 2008). Despite the fact that a video repository solution supports this objective, institutions of higher education struggle to find an appropriate solution this affordable and scalable.

A plethora of video repository solutions are available; however, some of these solutions may not be ideal because of challenges associated with security and storage costs. Alternative solutions such as NJVID need to be explored in order to meet the pedagogical and administrative demands faced by institutions.

The collaborative approach CSI used to explore and pilot a solution is one that can be duplicated at other institutions. It is important that all users have a voice in order to select the optimal solution that meets the needs of the institution as a whole. In addition, clear objectives and selection criteria need to be outlined in order to streamline the selection process. Finally, training, documentation, and support is key to any successful pilot.

The continued expansion of this video repository and streaming service solution will provide opportunities to engage students and enhance the learning process. Currently, different CSI departments and tutoring centers implement different platforms to publish and distribute to students their discipline-related materials. The integration of a unified system will enable the College to combine the resources provided by the various divisions into one portal, and to create an online environment that students can refer to for on-demand technical assistance in the

varied software implemented campus-wide, creating a one-stop shopping environment that

eliminates the need to use multiple sites for assistance.

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Las Universidades y el Acceso a los Recursos Educativos Abiertos

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Resumen

No hay duda de la cantidad y diversidad de materiales educativos existentes en Internet. Los recursos educativos de libre licenciamiento y acceso gratuito se han convertido en una tendencia relevante en el sector educativo. Sin embargo, varios estudios indican que el nivel de adopción y uso de los Recursos Educativos Abiertos (REA) es baja. También indican que la principal dificultad que enfrentan los profesores para utilizar estos recursos es el tiempo y esfuerzo que les toma buscarlos y evaluarlos. Factores culturales, tecnológicos y económicos han motivado a instituciones, universidades y gobiernos a generar proyectos que buscan la creación y distribución de estos materiales. Este artículo busca mostrar las iniciativas institucionales que las universidades están llevando a cabo para promover la adopción y uso de los Recursos Educativos Abiertos dentro de sus respectivas comunidades. Estas iniciativas han tomado forma de enlaces o páginas web institucionales especializadas en REA. Algunas universidades han clasificado los REA por el tipo de usuario, por área de conocimiento o por tipo de material educativo. En la mayoría de las páginas web universitarias evaluadas, los REA estaban clasificados de varias maneras. Este enfoque permite acceder más rápido a los REA ya que el usuario puede identificar su necesidad más fácilmente.

Introducción

Actualmente, las universidades en Estados Unidos y Puerto Rico están sujetas a intensas presiones. Las mismas obligan a las instituciones de educación superior a realizar cambios importantes. Cambios en la estructura de costos, en las estrategias de admisión, de retención y en la forma de educar, son la orden del día.

Una de las presiones más importantes que enfrentan las universidades es la de la tecnología (Shank, 2014). Tanto en términos de dispositivos y aplicaciones como de *softwares* para la computadora, los cambios tecnológicos permiten que las universidades puedan alterar sus prácticas administrativas y la forma en que ofrecen sus servicios.

Recientemente, un artículo sobre las principales tendencias para el 2015 relacionadas con las tecnologías educativas colocaba a los Recursos Educativos Abiertos (REA) en la posición número uno (Gallagher, 2015). La proliferación de contenido de alta calidad, de libre licenciamiento y acceso gratuito en Internet está transformando el material que tienen los educadores universitarios para los procesos enseñanza-aprendizaje. Esta transformación forma parte del debate relacionado con los altos costos de los libros y recursos educativos para los estudiantes (Straumsheim, 2015; Feiner, 2015; Douglas-Gabriel, 2015). Lo costoso de los créditos universitarios y la reducción de recursos gubernamentales han propiciado que muchas universidades busquen aliviarles la carga económica a los estudiantes proveyéndoles recursos educativos libre de costo (Plotkin, 2012).

Sin embargo, el bajo costo de los REA no es la única justificación para que las administraciones universitarias les provean a los profesores y a los estudiantes, medios y

educación para manejar estos recursos. Debido al acceso que tienen a computadoras personales, tabletas, teléfonos inteligentes y laboratorios de computadoras, los estudiantes pueden conseguir fácilmente el material que usan los profesores para enseñar los cursos (Shank, 2014). Además, a las generaciones más recientes de estudiantes se les hace más fácil y divertido acceder al recurso mediante Internet, lo que les permite integrarse mejor a los procesos de enseñanza-aprendizaje (Shank, 2014).

Una significativa cantidad de universidades, organizaciones sin fines de lucro e instituciones gubernamentales ya han tomado diversas iniciativas. Sin embargo, las acciones que tienen un efecto directo, al menos a corto plazo, sobre los procesos de enseñanza-aprendizaje son las que las instituciones de educación superior están llevando a cabo por los beneficios de los diferentes REA existentes.

Tipos de REA

El crecimiento de los REA ha sido exponencial. El interés de diversas organizaciones e instituciones para que cada vez más personas tengan acceso al conocimiento crece diariamente. Este crecimiento no es uno aislado. Es parte de una tendencia mundial para generar recursos gratuitos y de libre acceso que incluye los programas de computadoras y las revistas de investigación científica. Los REA pueden ser la manera eficiente para promover un aprendizaje continuo, tanto para las personas, las organizaciones como los gobiernos, y pueden ayudar a cerrar la brecha entre los tipos de aprendizaje formales e informales (OECD, 2007).

Existen distintos tipos de REA. La organización sin fines de lucro Creative Commons clasifica los REA de la siguiente manera: Recursos de Aprendizaje (Learning objects), Recursos Semi-estructurados y Recursos Altamente Estructurados.

Recursos de Aprendizaje son cualquier recurso digital que puede ser reusado para apoyar los procesos de enseñanza-aprendizaje (Wiley y Edward, 2002). Sosteric y Hesemeier, (2002) proveen una definición que enfatiza más en el objetivo del recurso que en la estructura. Ellos definen recursos de aprendizaje como un archivo digital (texto, video o imagen, etc.) que fue creado para usarse con objetivos pedagógicos. Estos recursos incluyen de alguna manera una sugerencia sobre el contexto apropiado en el cual la persona debe utilizarlo. Pueden ser considerados como un conjunto de materiales educativos crudos que pueden emplearse de diferentes maneras.

Los profesores podrían integrar estos materiales en el prontuario o currículo, agruparlos dentro de un curso o combinarlos con otros materiales para incrementar la cantidad de recursos educativos disponibles (Creative Commons, 2011). Su gran diversidad les provee, tanto al profesor como al estudiante, nuevas maneras de obtener información. Los distintos formatos, además, permiten la selección del recurso dependiendo del estilo de enseñanza o de aprendizaje. Algunos ejemplos de Learning objects son: MERLOT (Multimedia Educational Resources for Learning and Online Teaching), OER Commons y Open Learning Initiatives en Carnegie Mellon University.

Los recursos educativos semi-estructurados se encuentran en páginas web que contienen materiales agrupados por temas o áreas de conocimiento. Las colecciones de bibliotecas

digitalizadas, las enciclopedias y los archivos digitales son los mejores ejemplos de este tipo de

recurso (Creative Commons, 2011). En estos enlaces encuentras los recursos que se hallarían en

una biblioteca. Por lo tanto, su principal uso es proveer materiales de referencia.

Las colecciones de bibliotecas digitalizadas constituyen un conjunto de documentos

organizados de forma electrónica, disponible en el internet (Cass, 2005). Contienen materiales

de temas específicos y de referencia. Las fotografías, libros, documentos, sonidos, videos y

revistas contenidas en estas colecciones son apropiados para que los profesores y los estudiantes

las integren en los cursos y en las investigaciones. Hoy, muchas universidades ya cuentan con

colecciones digitalizadas para que los estudiantes y los profesores puedan accederlas desde

cualquier lugar.

Las enciclopedias digitales proveen material de referencia. En ellas se encuentran

definiciones y descripciones de diversos temas y facilitan, a su vez, la corroboración de la

información. Destaca, entre todas, Wikipedia aunque existen muchas otras con excelente

reputación, como: Webopedia, Netlingo y Natural Science.

Los archivos digitales son colecciones de materiales educativos almacenados

electrónicamente. Los profesores y los estudiantes utilizan estos recursos principalmente para

la investigación. Ejemplos importantes son: La Biblioteca del Congreso, Internet Archive,

National Archive y World Wide Science.

Finalmente, existen REA que, por su alto nivel de estructura y especificidad, podrían ser

útiles para adaptarlas a necesidades educativas particulares, tanto del educador como del

estudiante. Los recursos educativos altamente estructurados (libros de texto, materiales para

cursos específicos, cursos y otras herramientas educativas que proveen mayor interactividad al usuario) tienen una mayor probabilidad de sustituir recursos o herramientas educativas tradicionales (Creative Commons, 2011). Son excelentes medios para las personas que desean educarse a través de instituciones universitarias.

Cada vez más intelectuales y profesores están escribiendo libros de texto en formato digital, con licenciamiento abierto, para que cualquier persona pueda leerlo, almacenarlos, imprimirlos o compartirlos. Por otro lado, ya existen varios proyectos importantes sin fines de lucro cuyo enfoque es proveer materiales educativos por materia (prontuarios, listados de lecturas, presentaciones, videos, documentos de evaluación, etc.). MIT Courseware es el proyecto de este tipo más notable. Sin embargo, son los proyectos interuniversitarios organizados con el fin de ofrecer cursos en línea libre de costos, los que más notoriedad han tomado recientemente. Proyectos como Coursera, Edx, y OpenCulture están ofreciendo valiosos cursos que las personas no solo están utilizando para educarse, sino que también los educadores emplean para complementar sus materiales de enseñanza.

La gran riqueza de materiales educativos en formato digital, libre de costo, con licenciamiento abierto, y con diversos niveles de complejidad y estructura, está llevando a las universidades alrededor del mundo a dedicar recursos humanos y tecnológicos al desarrollo de iniciativas propias y colaborativas que pongan estos materiales a disposición de sus comunidades.

Uso en las Universidades de los Recursos Educativos Abiertos

Sería muy sencillo concluir que la única razón que tiene una institución de educación superior para involucrarse en iniciativas relacionadas con REA es proveer materiales educativos adicionales a la facultad y a los estudiantes. Sin embargo no es así. Las universidades mencionan 7 razones para vincularse en proyectos de uso, creación y distribución de REA (Centre for Educational Research and Innovation, 2007):

1. El argumento altruista de que compartir el conocimiento es congruente con sus tradiciones académicas.

2. Las instituciones educativas, principalmente las públicas, deberían compensar a los contribuyentes permitiendo que las comunidades utilicen y compartan recursos educativos.

3. Al permitir que el público use y comparta los recursos, su calidad puede ser mejorada y el costo del desarrollo de contenidos puede ser reducido.

4. Es bueno para las relaciones públicas de la institución tener proyectos de REA como un atractivo para atraer nuevos estudiantes.

5. Existe una necesidad de buscar alternativas o modelos para reducir los costos en la medida que aumenta la competencia.

6. La apertura para compartir contenido acelerará el desarrollo de nuevos materiales educativos, estimulará la reutilización, la innovación y la calidad, y ayudará a las instituciones a mantener registros de los recursos que posee.

7. El ambiente educativo está cambiando tan rápidamente que no hacer nada representa un alto riesgo.

Aunque ciertamente hay razones suficientes para que las instituciones de educación superior adopten los REA, falta mucho camino por recorrer. Ya Contreras (2010) advertía que los REA enfrentan problemas para lograr su aceptación. Uno de ellos es el anonimato de la información aportada y la especificidad de esos recursos educativos (Contreras, 2010). Además, la producción de estos recursos educativos aún no logra mostrarse de forma que el estudiante pueda encontrarlos rápidamente (Contreras, 2010). Los estudios recientes han confirmado estas dificultades que enfrentan los REA en términos de su adopción y uso en las universidades.

En el 2014, I. Elaine Allen y Jeff Seaman, Directores del Babson Survey Research Group, llevaron a cabo una investigación relacionada con el conocimiento y el nivel de adopción que tienen los profesores universitarios sobre los REA. Dos mil ciento cuarenta y cuatro (2,144) profesores de universidades públicas y privadas respondieron a la encuesta. Las conclusiones más relevantes del estudio son las siguientes:

- La gran mayoría de la facultad no conoce de los REA. El 65 por ciento de los encuestados indicó no tener conocimiento sobre ello. De hecho, el estudio revela que el nivel de conocimiento es mayor en los profesores de mayor edad. Por otro lado, las instituciones universitarias con programas académicos de 4 años tienen un nivel de conocimiento menor que las instituciones que ofrecen programas de 2 años (Allen y Seaman, 2014)

- A la facultad le gusta el concepto de REA y está dispuesta a probarlo. El 49 por ciento de los profesores encuestados indicó que usa los REA como recurso primario o secundario

para sus cursos. El 79 por ciento de los profesores que conoce los REA, los utilizan de alguna manera.

- La facultad opina que la calidad de los REA es similar a la de los recursos educativos tradicionales. La mayoría de los profesores indicó no tener conocimiento suficiente sobre los REA como para emitir una opinión sobre calidad. Sin embargo, el 75 por ciento de los profesores que estaba en posición para emitir una opinión al respecto, señaló que la calidad de los REA es similar o mejor que la de los recursos educativos tradicionales.

- La facultad es quien, principalmente, toma la decisión relacionada con la adopción de REA. El 91.8 por ciento de los profesores encuestados informó que son ellos los que toman la decisión. Esta proporción se reduce a 80.5 por ciento cuando se toman en consideración los profesores que laboran en instituciones que ofrecen programas de dos años.

- La principal barrera para una mayor adopción de los REA es la percepción de la facultad del tiempo y esfuerzo que conlleva hallar y evaluar los recursos. Los profesores que participaron en el estudio indicaron que los tres principales obstáculos para una mayor adopción de REA son los siguientes: no existe un catálogo amplio de REA, existe una alta dificultad para hallar lo que necesitan y no existen materiales suficientes sobre su área de conocimiento.

Los hallazgos de este estudio indican que, aunque los REA son de buena calidad a un costo mucho más bajo que los recursos tradicionales, la mayoría de la facultad no los conoce o los utiliza muy poco. La divulgación, organización y clasificación de los REA dentro de la comunidad

académica ha sido pobre. Al parecer, existe dificultad para acceder a estos, a pesar de la riqueza en conocimiento que poseen.

La empresa de productos y soluciones tecnológicas Extreme Networks llevó a cabo una encuesta en el 2015, en la que educadores universitarios y K-12 de todo el mundo expresaron su percepción sobre los REA. El estudio reveló que, aunque el 62 por ciento de los encuestados está consciente de la existencia de los REA, solo el 23 por ciento de las instituciones educativas que los profesores representan los están utilizando en estos momentos (Nilson, 2015). De los profesores que han utilizado los REA, el 94 por ciento indicó estar satisfecho con la experiencia. Los educadores encuestados indicaron que el principal beneficio de los REA es el bajo o ningún costo. El 84 por ciento de los profesores indicó que los REA tienen una calidad similar o mayor a los recursos educativos tradicionales. Finalmente, cuando se les preguntó cuáles eran las desventajas de adoptar y usar los REA, los profesores encuestados indicaron que tenían dificultad de obtener la aprobación de la institución, que era muy difícil evaluar los materiales y que adquirirlos era una tarea muy compleja (Nilson, 2015).

Es importante resaltar las conclusiones similares a las que llegan ambos estudios:

- Los REA son de una calidad similar o mejor a la de los recursos tradicionales y los profesores que los utilizan está satisfechos con la experiencia.

- El nivel de adopción y uso de los REA es bajo.

- La dificultad para acceder y evaluar los REA es la principal desventaja. Este aspecto podría explicar, en parte, el bajo nivel de adopción y uso.

¿Qué están haciendo las universidades?

Por la pasada década, las instituciones de educación superior se han estado vinculando con la tendencia de los REA de diferentes maneras. Las universidades con mayores recursos económicos han estado creando y compartiendo contenido en forma de cursos o materiales para cursos específicos. Ejemplos de esta dinámica son: MIT Open Courseware, Open Yale Courses, OpenStax CNX, Open Learning Initiative y webcast.berkeley. Otras universidades han formado organizaciones, consorcios, y centros de investigación con el objetivo de promover la idea de impactar la educación global mediante el desarrollo y distribución de recursos educativos digitales de libre acceso. Open Education Consortium, OER Africa, OER Universitas y OERu.org son algunas organizaciones formadas por universidades con el fin de promover los REA.

Sin embargo, existen universidades que están atendiendo directamente la dificultad que tienen sus profesores y sus estudiantes para acceder a los REA. Existen universidades que utilizan herramientas tecnológicas para crear espacios donde sus comunidades pueden conocer más sobre los REA y accederlos fácilmente. Algunas emplean estos espacios para promover y facilitar que los profesores desarrollen y publiquen sus propios materiales educativos. Estos espacios han tomado la forma de bibliotecas virtuales con REA específicamente.

Para evaluar las características de estas iniciativas, se seleccionaron 26 páginas web de universidades que tenían una sección específica para REA (Ver Tabla 1). La mayoría de los enlaces se encuentran en las páginas web de las Bibliotecas de las universidades y utilizan la plataforma web para publicar recursos bibliográficos LibGuides.

Las páginas de REA no se especializan en un tipo de recurso educativo en particular. Al contrario, se caracterizan por la diversidad de los mismos. Tampoco se concentran en un área de conocimiento en particular, a menos que la universidad sea una especializada (eg., Kwame Nkrumah University of Science and Technology).

Tabla 1

Enlaces de REA desarrolladas por Universidades (Instituciones Seleccionadas)

Páginas universitarias de Recursos Educativos Abiertos
1. University of the Witwatersrand, Johannesburg
2. Washington State University
3. University of South Africa
4. University of Massachusetts
5. University of Maryland University College
6. Institute of Education
7. Tidewater Community College
8. Southern Connecticut State University
9. Southern Illinois University Edwardsville
10. Montgomery College
11. Longwood University

12. [Indiana State University](#)

13. [Humboldt State University](#)

14. [Houston Community College](#)

15. [Georgia State University](#)

16. [Fort Hays State University](#)

17. [Franklin University](#)

18. [California State University, Chico](#)

19. [Brandon University](#)

20. [University of Cape Town](#)

21. [Prince George's Community College](#)

22. [Clover Park Technical College](#)

23. [Kwame Nkrumah University of Science and Technology](#)

24. [University of Oklahoma](#)

25. [University of Maryland](#)

26. [Blue Mountain Community College](#)

De la evaluación de los enlaces seleccionados se desprenden varios elementos en común. Primero, estos enlaces contienen una sección fundamental donde explican detalladamente que es un recurso educativo abierto. Aquí se explican sus características, información sobre la licencia que lo cubre (Creative Commons) y los usos que tiene. Segundo, contienen guías y tutoriales sobre el uso de los REA. Estas guías explican al usuario cómo hallar, usar y desarrollar y compartir

los REA. Tercero, los enlaces universitarios de REA presentan una sección sobre licenciamiento y derechos de autor. Esta sección es importante ya que explica lo que se puede hacer con los REA y las restricciones que les aplican (eg., Washington State University).

Existen diferencias entre las instituciones en cómo muestran y hacen accesible los REA a la comunidad universitaria. También difieren en los REA que cada una quieren resaltar. Algunas universidades (eg., University of Maryland, Georgia State University y University of Massachusetts) dividen los REA entre profesores y estudiantes. La razón es que, aunque la mayoría de los REA son útiles para toda persona que desee aprender, existen recursos que son más pertinentes para uno de los dos grupos. Otras instituciones de educación superior (eg., Indiana State University, Humboldt State Univesity y University of Cape Town) organizan los REA por área de conocimiento, materia o unidad académica. La ventaja de este enfoque es que, tanto los profesores como los estudiantes, pueden llegar fácilmente a los recursos que se adaptan a los temas o cursos que están manejando. También existen universidades (eg., Southern Connecticut State Univesity, Chico State University y Clover Park Technical College) que han organizado los REA en formato digital dependiendo del tipo de recurso o material educativo (libros, videos, sonidos, enciclopedias, buscadores de información, cursos o materiales diversos).

La mayoría de los enlaces universitarios dedicados a REA evaluados combinan varios de los formatos ya mencionados. Al incluir diversas maneras de acceder a los REA, estos enlaces pueden satisfacer más rápidamente las distintas necesidades de recursos que tengan los estudiantes y los profesores. En estos términos, University of the Witwatersrand, Johannesburg, Tidewater Community College, Prince George's Community College, Blue Mountain Community

College y University of Oklahoma tienen los enlaces más completos. Los enlaces de estas universidades muestran los REA dependiendo del área de conocimiento, del tipo de recurso y de usuario. También incluyen una sección donde se encuentran los repositorios de REA más importantes. Debido a que el nivel de organización de los REA es mayor, el usuario puede hallar el material educativo fácilmente. Iniciativas como esta permiten que más profesores y estudiantes accedan, adopten y evalúen los REA.

Retos y Recomendaciones

Aunque sobran razones para que una universidad entre en el desarrollo de espacios para divulgar los REA dentro de sus respectivas comunidades universitarias, existen factores que pudieran influir en las posibilidades de éxito de esta iniciativa. Primero, el desarrollo de páginas web con REA se debe dar mediante la colaboración entre los departamentos académicos, la biblioteca y la Oficina de Tecnología de la Información. Es importante que la instancia digital que se prepare cumpla con los requisitos y condiciones de los recursos bibliográficos, a la misma vez que satisface las necesidades educativas de los profesores y los estudiantes. Segundo, en el proceso de desarrollar los enlaces con REA, existe el riesgo de colocar recursos educativos que no posean licenciamiento abierto. Esto puede ser peligroso debido a que un usuario podría estar utilizando un material educativo de manera incorrecta o no autorizada (Hylen, J., y Antoni, S., 2012). Por lo tanto, es fundamental que las páginas universitarias de REA provean información sobre los derechos de autor y sobre las diferentes licencias que tiene Creative Commons y sus guías de uso. Además, si se incluyen recursos que no fueron publicados con licenciamiento

abierto, estos deben identificarse como tal. Tercero, la creación de un enlace institucional con REA no garantiza una significativa utilización de estos recursos por parte de los profesores y estudiantes. Las instituciones universitarias deben orientar a la facultad sobre las ventajas y desventajas de los REA (Centre for Educational Research and Innovation, 2007). Además, es recomendable que los profesores y los estudiantes sean adiestrados sobre el uso de los REA para viabilizar y facilitar su uso (Centre for Educational Research and Innovation, 2007). Finalmente, la mayoría de los REA existentes en Internet han sido creados en inglés. Sin embargo, recientemente ha habido un crecimiento significativo de REA desarrollados en otros idiomas (Hylen, J., y Antoni, S., 2012). En entornos multiculturales, es clave divulgar los REA en diversos idiomas. De esta manera se tiene disponible una mayor cantidad de recursos educativos a la misma vez que se satisfacen las necesidades intelectuales de diversos grupos étnicos.

Conclusión

No hay duda que existen factores económicos, culturales y tecnológicos que están provocando que las instituciones de educación superior modifiquen la forma en que operan. Los altos costos de la educación universitaria, incluyendo los libros y otros materiales educativos, están impulsando a las instituciones y a los estudiantes a buscar alternativas más costo-efectivas. Por otro lado, las generaciones de estudiantes más recientes se forman y desarrollan integrando la tecnología para buscar, reusar y compartir información. Utilizar un dispositivo e Internet para educarse o entretenerse es parte de su diario vivir. Finalmente, tanto en términos de softwares,

equipos y ancho de banda de la red cibernética, los adelantos tecnológicos están posibilitando que los profesores y estudiantes puedan acceder, almacenar y compartir grandes cantidades de información.

Por otra parte, la cantidad de REA disponibles es inmensa y sumamente variada. Los estudios recientes revelan que los REA no sólo son baratos, sino también de una calidad igual o mejor a los recursos educativos tradicionales. Indican también que la facultad, quien principalmente toma la decisión sobre adoptar estos materiales educativos, está satisfecha con los REA. Sin embargo, los estudios concluyen que el nivel de conocimiento y uso de los REA es bajo debido a la dificultad que enfrentan los profesores para acceder a los REA que se adapten a sus necesidades.

Este contexto ha llevado a varias instituciones universitarias a viabilizar el acceso de REA a la comunidad de diversas maneras. A pesar de la existencia de organizaciones importantes vinculadas al desarrollo y divulgación de REA, las universidades han tomado la iniciativa creando espacios virtuales que recopilan muchos de los enlaces donde se encuentran estos materiales educativos de libre acceso. Algunas de ellas han desarrollado enlaces especializados en REA con un nivel simple de organización (por tipo de estudiante, tipo de recurso o tipo de materia). Los enlaces universitarios dedicados a REA más completos tienen niveles de organización más complejos en términos de las diversas clasificaciones de REA que muestran. Esto permite que los profesores y los estudiantes puedan acceder a aquellos que satisfagan sus necesidades particulares más ágilmente. Iniciativas de este tipo deben incrementar el nivel de adopción y uso de los REA.

Sin embargo, las instituciones universitarias no se pueden conformar con la creación de una página web sobre REA. Deben desarrollar otras estrategias que contribuyan a una mayor y adecuada utilización de los REA que cumpla con las necesidades de los profesores y estudiantes.

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Reflexiones sobre las competencias y destrezas necesarias para enseñar cursos en línea

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Reflexiones sobre las competencias y destrezas necesarias para enseñar cursos en línea

Resumen

En la academia, existe la percepción de que los profesores que ofrecen cursos presenciales, pueden enseñar cursos en línea sin tener que realizar mayores ajustes en sus prácticas docentes. El mantra de que "la facultad se recluta por sus credenciales y no por la modalidad de enseñanza", no aplica totalmente en el ámbito de la educación a distancia. Este artículo describe los cambios en el rol de la facultad que han resultado de la modalidad de aprendizaje a distancia, así como los hallazgos de una investigación institucional que evidencia que los profesores que enseñan cursos en línea que poseen una certificación de diseño y docencia en aprendizaje en línea, obtienen mejores evaluaciones por parte de sus estudiantes que aquellos que no la poseen. Estos datos justifican el argumento de que al reclutar o asignar facultad para diseñar y enseñar cursos a distancia, se requiere que estos posean la combinación adecuada de credenciales académicas, así como la capacitación en el diseño y docencia en aprendizaje en línea.

Identificadores: docencia a distancia, capacitación docente en línea, certificación docentes a distancia

Introducción

En Puerto Rico, la matrícula de estudiantes con al menos un curso en línea para otoño 2013, era de 52,598 estudiantes tomaron al menos un curso a distancia. De estos, el 70% estaban en instituciones privadas sin fines de lucro (Torres-Nazario, 2015). Si a esto le añadimos que para la primavera de 2014, en el país había una oferta académica de 105 programas licenciados para ofrecerse por esta modalidad en 34 instituciones de educación superior del país (Torres-Nazario, 2014). Estos datos ilustran el crecimiento en la matrícula y en la oferta de programas a distancia en el país. Debido a esto, cada día vez es mayor el número de instituciones de educación superior de los Estados Unidos (y Puerto Rico) que están moviéndose de enseñar clases presenciales a cursos combinados o totalmente a distancia (Keengwe y Kidd, 2010). De hecho, esto está acorde con la proporción de instituciones de educación superior que creen que la educación a distancia es un componente crítico de su estrategia a largo plazo incrementó durante la década de 2003 al 2013 (Allen y Seaman, 2014).

Del mismo modo, la literatura destaca como "actor principal de este escenario educativo el docente, el cual debe cambiar su concepción del proceso enseñanza-aprendizaje, dejando de ser el profesor de clases magistrales para convertirse en facilitador del conocimiento, orientador y guía de los alumnos…"(Perdomo de Vázquez, 2008). Por esto, durante la última década se ha observado un aumento en el número de profesores que por primera vez ofrece cursos a distancia (Luck y McQuiggan, 2006). En la práctica, son muchos los instructores que comenzaron a ofrecer cursos a distancia que emprendieron esta tarea con poca o ninguna capacitación en esta modalidad de enseñanza (Crawford-Ferre & Wiest, 2012). En estos casos, cada profesor trabaja su curso sin un modelo o estructura particular, solamente

usando su buen juicio. Laird (2013) clasifica esta forma de trabajar los cursos en línea como el modelo del lobo solitario o "lone-wolf model". En este modelo, cada profesor tiene el control total del formato, del contenido y de la forma como se lleva a cabo la comunicación en el curso en línea. Este arreglo puede funcionar a corto plazo y a pequeña escala, pero puede convertirse rápidamente en un caos administrativo debido a que carece de la infraestructura y del apoyo administrativo necesario para su subsistencia a largo plazo.

Es por esto que Balking, Buckner, Swartz y Rao (2005, según citado por Crawford-Ferre & Wiest, 2012), advierten sobre la necesidad de que los profesores reciban la capacitación adecuada para que logren una mayor participación y colaboración de los estudiantes en sus cursos a distancia. Para cumplir con este nuevo rol y a la misma vez, ser exitoso en esta modalidad de enseñanza, la facultad que enseña cursos a distancia debe recibir capacitación, tanto en aspectos pedagógicos, sociales y tecnológicos. Por esto, es importante que los docentes se familiaricen con investigaciones relacionadas con métodos efectivos de enseñanza a distancia (Crawford-Ferre & Wiest, 2012). Las siguientes secciones contienen información sobre algunos modelos teóricos relacionados con la capacitación de profesores, las competencias y destrezas necesarias de un docente a distancia, los factores que los motivan para enseñar a distancia, entre otros.

¿Qué nos dice la literatura sobre la capacitación de facultad?

La literatura destaca que la aceptación de esta modalidad por parte de la facultad, definida por su disposición para enseñar cursos en línea, es el principal factor que inhibe el desarrollo de los programas en línea (Stewart, Bachman y Johnson, 2010). Para comprender cómo los individuos o grupos adoptan una innovación tecnológica, como la educación a

distancia, se utilizan varias teorías o modelos. Entre estas, se destacan: (1) la Teoría de la

Difusión de Innovaciones (TDI) postulada por Everett Rogers (1983) y (2) la Teoría de

Aceptación de Tecnología (Technology Aceptance Model-TAM) de Fred Davis and Richard

Bagozzi (Stewart, Bachman & Johnson, 2010). La primera, puede utilizarse para identificar el

recurso humano que es susceptible a adoptar una innovación. La segunda, para la

administración de las recompensas y estímulos asociados con esta modalidad.

La Teoría de Difusión de Innovaciones (TDI) de Rogers (1963), define el efecto de

difusión acumulado como el creciente grado de influencia sobre un individuo para adoptar o

rechazar una innovación (véase Figura 1). La categorización del grado de aceptación se

representa en cinco categorías ideales: Innovadores, primeros seguidores, mayoría temprana,
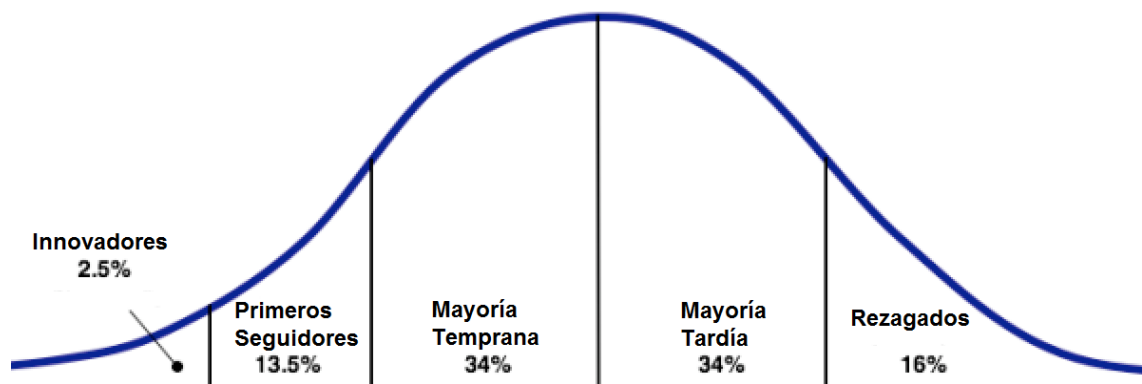
mayoría tardía y los rezagados.

Figura 1: Modelo de adopción tecnológica de Rogers (1983)

A continuación se describe cada una de esas categorías.

- **Innovadores** son los primeros en adoptar una nueva herramienta, idea o técnica. Son

  personas emprendedoras, con recursos, que comprenden y pueden emplear fácilmente

  la tecnología. Ellos se comunican con otras personas similares externas al sistema.

Aceptan incertidumbre y no se desaniman con problemas relacionados con la innovación. Ellos se auto motivan para seguir descubriendo nuevos usos. Pueden no ser muy respetados o comprendidos por los demás.

- **Primeros seguidores** se refiere a los miembros de un sistema social que adoptan una innovación en sus primeras etapas. En contraste con los Innovadores, ellos por lo general, sí son respetados por sus compañeros. Están más integrados al sistema social. Son los profesores a los que se les pide ayuda y consejos. Se les conoce porque utilizan en forma mesurada y exitosa nuevas herramientas, métodos e ideas y por lo tanto sirven de modelo para los demás.

- **Mayoría temprana** son aquellas personas que se les conoce por tener una interacción muy alta con sus compañeros. Ellos no ocupan posiciones de liderazgo dentro de su sistema social, ni oficial ni extraoficialmente. Su función principal es la de proveer conexiones entre las diferentes redes interpersonales del sistema. Ellos toman mucho más tiempo que los Innovadores o Adoptadores Tempranos en decidirse a usar una nueva herramienta, técnica o idea.

- **Mayoría tardía** se refiere a las personas que son mucho más cautelosas que las personas de los grupos vistos anteriormente, para probar cualquier innovación. Para que estas personas adopten innovaciones, deben de haberse eliminado casi todas las dudas relacionadas con su uso y las normas de conducta y creencias del sistema social ya deben de favorecer su adopción.

- **Los rezagados** son los más tradicionales de todo el sistema. Son excesivamente cautos para explorar nuevas ideas, técnicas y herramientas y generalmente tienen muy pocos

recursos para apoyarlos. Su punto de referencia es el pasado, lo que los hace

importantes para un sistema social ya que ellos recuerdan su historia y dan continuidad.

Son personas solitarias que adoptan una innovación mucho después de que saben de su

existencia y sólo cuando el cambio se vuelve absolutamente necesario dentro del

sistema.

De acuerdo con Rogers (1983), internamente a la tasa de adopción llega a un punto en el que

una innovación alcanza la masa crítica. Este punto en el tiempo dentro de la curva de adopción

de la innovación asegure la adopción continua de la innovación se sustenta por sí misma.

Por su parte, el Modelo de Aceptación de Tecnología (TAM), es un modelo más de tipo

psicológico, el cual postula que las creencias del individuo sobre la utilidad y la facilidad de uso

de la tecnología influencia sus actitudes, las que a su vez afecta sus intenciones y su conducta

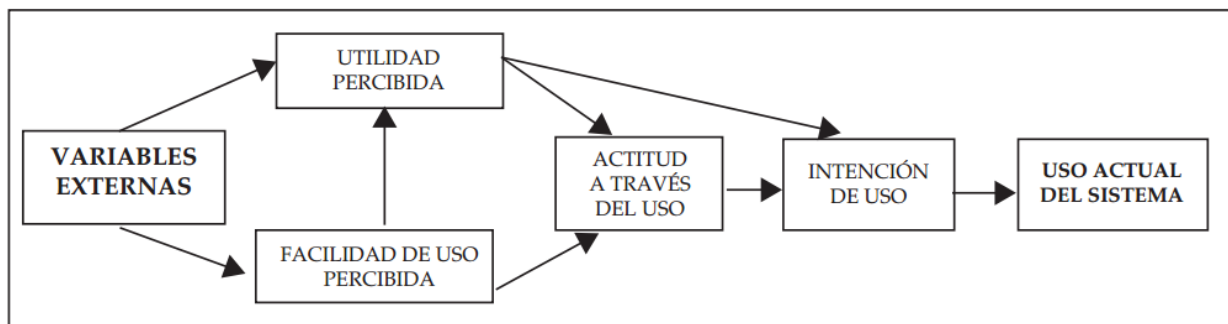relacionado con el uso de la misma (véase Figura 2).

Figura 2: *Modelo de Aceptación de Tecnología de Davis and Bagozzi*

Sobre el uso de este modelo, la literatura informa resultados mixtos. El estudio de

Gibson, Harris, & Colaric 2008) encontró que tanto la facilidad de uso como la utilidad percibida

son predictores adecuados, pero no concluyentes de la percepción de la facultad acerca del

valor y legitimidad de la educación en línea. Por su parte, Kim (2008) encontró que ambas

variables determinan el 80% de la varianza de la intención de enseñar cursos en línea. Otra

investigación realizada por Stewart, Bachman & Johnson (2010), encontró que el TAM predijo la

intención de los miembros de facultad para enseñar en línea, pero la variable de facilidad de

uso percibida no predice la intención de enseñar a distancia. Este hallazgo es inconsistente con

otras investigaciones (Gibson, Harris, & Colaric, 2008; Kim, 2008). Por otra parte, el estudio de

Huang, Deggs, Jabor y Machtmes (2011), encontró que la utilidad percibida, la facilidad de uso y

el apoyo administrativo juegan un rol importante en la intención de adopción de la educación a

distancia por parte de la facultad. Estas variables son susceptibles a intervención institucional.

¿Cuáles son las competencias que debe poseer un profesor que enseña a distancia?

A medida que aumenta la oferta de cursos y programas a distancia, también aumenta la

necesidad de programas de formación de profesores para que utilicen esta modalidad de

enseñanza. Según Beaudion (2005), esto contribuye a la evolución del rol de la facultad en el

contexto de un ambiente de enseñanza-aprendizaje cambiante. Como se mencionó

anteriormente, la facultad es uno de los elementos más importantes en el éxito de un

programa a distancia. En sintonía con este argumento, Campos Céspedes, Brenes Matarrita y

Solano Castro (2010), identifican cinco categorías o competencias que debe poseer un docente

para enseñar en la modalidad de cursos en línea. Estas son:

- **Competencias pedagógicas (40%)** – son las más importantes competencias en la
  educación a distancia. Requiere poseer dominio de teorías de enseñanza, de aprendizaje
  y de gestión curricular que le permitan el planteamiento, el desarrollo y la evaluación de
  propuestas pedagógicas efectivas, entendiendo como efectivas que sean pertinentes
  para las características de sus estudiantes.

- **Competencias sociales (25%)** - la facultad debe utilizar estrategias que faciliten la comunicación e interacción dentro de sus cursos. De esta manera promueve altos niveles de motivación en sus cursos.

- **Destrezas tecnológicas (15%)** – son competencias relacionadas al dominio de herramientas tecnológicas y las habilidades asociadas con el uso de las mismas.

- **Destrezas investigativas (15%)** – se refiere al conjunto de habilidades, conocimientos y actitudes que el personal docente debe poseer para problematizar la realidad educativa tanto de su experiencia práctica y la consecuente búsqueda sistemática y rigurosa de respuestas a los problemas de investigación generados a partir de su práctica pedagógica.

- **Competencias de liderazgo académico (5%)** - las competencias de liderazgo contempla saberes, actitudes y prácticas orientadas hacia la búsqueda permanente de la excelencia académica del docente, de sus estudiantes y de la institución.

Agrupando estas competencias, podemos establecer que el 95% de las competencias del docente a distancia están íntimamente relacionadas con el proceso de enseñanza-aprendizaje. Finalmente, Campos Céspedes, Brenes Matarrita y Solano Castro (2010) destacan que "el desarrollo de la educación en línea exige a las universidades un cambio sobre la concepción de lo que es ser docente; consecuentemente, se derivan cambios en cuanto a las funciones asignadas, políticas de formación y gestión de los recursos".

¿Cuáles son los factores que motivan a la facultad a enseñar cursos a distancia?

Maguire (2005) señala que para que un programa a distancia sea exitoso, es importante identificar y administrar los factores que motivan a los profesores a enseñar cursos en línea y

controlar o minimizar los factores inhibidores. Entre los factores que motivan a la facultad se identifican dos dimensiones: (1) los factores motivadores, intrínsecos o personales y (2) los factores inhibidores de carácter institucional. En el primer grupo se destacan los profesores que entienden que enseñar a distancia es un reto intelectual. También, están los que destacan que cuando enseñan cursos a distancia, se obtiene una mayor satisfacción con su trabajo. Estos profesores sienten placer o deleite de enseñar a distancia. Por otra parte, están los que señalan que la educación a distancia les provee condiciones de trabajo óptimas. También, se destaca la posibilidad de enseñar en cualquier momento y desde cualquier lugar (any-time and any-where).

De otra parte, esta autora también destaca que existen varios factores que pueden inhibir el que los profesores enseñen cursos a distancia. No obstante, aunque estos factores son menos comunes que los factores motivadores, esencialmente son de tipo extrínseco. De hecho, muchos de los factores que pueden motivar a un profesor a enseñar en línea, también los pueden inhibir de participar en esta modalidad. Por ejemplo, el primero tiene que ver con cambios en su rol y en la interacción con los estudiantes presenciales. Entre algunos profesores puede haber resistencia al cambio, especialmente si piensan que afecta el modo de interacción o contacto con los estudiantes, o si entienden que estos cambios pueden afectar su carrera y seguridad de empleo. Otro factor que intimida a algunos profesores se relaciona con las destrezas tecnológicas necesarias para trabajar en esta modalidad. Por esto, la disponibilidad de capacitación técnica para la facultad, es uno de los factores que puede facilitar o limitar el que un profesor participe en la educación a distancia. Sobre este aspecto, Boettcher (2013) menciona diez mejores prácticas que todo docente a distancia que está comenzando a enseñar

en los ambientes virtuales. Entre estas, se destacan la presencia en el curso, la creación de una comunidad de apoyo en línea, el uso de actividades sincrónicas y asincrónicas, preparar foros de discusión que estimulen la reflexión y la discusión de ideas, entre otras. Es por esto que la facultad que enseña cursos en línea, debe recibir capacitación constante en muchas de estas llamadas mejores prácticas. Para trabajar con estos aspectos, varias instituciones y/o universidades han desarrollado una variedad de certificaciones que promueven el desarrollo de las competencias y las mejores prácticas que debe poseer un docente para enseñar cursos en línea.

¿Cuál es el efecto de la capacitación en la evaluación de los profesores a distancia?

Una manera de evidenciar el efecto que tiene la capacitación de los docentes a distancia, se observa contrastando los resultados de la evaluación de facultad que ofrecen cursos a distancia que están certificados para ofrecer cursos por esta modalidad y los que no están certificados. A estos efectos, el Recinto de Ponce de la Universidad Interamericana de Puerto Rico (IAUPR-Ponce, 2013) realizó un estudio institucional en el que comparó las evaluaciones de facultad de los profesores por modalidad de enseñanza (OI vs F2F). Las versiones presencial (Instrumento I) y a distancia (Instrumento I-A) de la Evaluación de facultad por estudiante. Ambos instrumentos son institucionales y comparables. En uno y otro, las primeras dos partes recogen información del curso, uso del prontuario, asistencia, etc. Por su parte, la parte III consiste de 13 reactivos que utilizan una escala Likert de 4 puntos que están relacionados con el **desarrollo de la clase**. La parte IV, contiene 12 reactivos que utilizan una escala Likert de 5 puntos, los que recogen información de la **gerencia del proceso enseñanza-aprendizaje**.

Los hallazgos de esta investigación institucional se desglosan por modalidad de enseñanza (F2F vs OL) y por departamento académico se incluyen en la Tabla 1. Los datos iniciales revelaron diferencia estadística significativa ($p<.05$) entre las evaluaciones de los cursos presenciales y los cursos a distancia, siendo los profesores a distancia los que recibieron promedios levemente menores a los que ofrecían cursos presenciales.

Tabla 1: *Evaluaciones de facultad por estudiantes para el otoño 2011 vs otoño 2012.*

Departmento académico*	Otoño 2011				Otoño 2012			
	F2F		OL		F2F		OL	
	Parte III	Parte IV	Parte III	Parte IV	Parte III	Parte IV	Parte III	Parte IV
Administración de Empresas	3.47	4.58	3.33	4.34	3.60	4.71	3.25	4.28
Programa de Educación	3.70	4.76	3.51	4.47	3.76	4.84	3.37	4.70
Programa de Humanidades	3.48	4.55	3.41	4.51	3.49	4.60	3.39	4.39
Matemáticas y Ciencias Naturales	3.38	4.41	3.28	4.31	3.41	4.48	3.36	4.32
Ciencias de la conducta	3.68	4.79	3.39	4.33	3.59	4.64	3.44	4.42
Promedio general	3.49	4.56	3.36	4.39	3.52	4.63	3.34	4.35

*No incluye datos del Departamento de Ciencias de la Salud ya que no ofrece cursos en línea.

Por otra parte, para todos los cursos a distancia (OL) evaluados durante el año 2011-12 (Otoño 2011 y Primavera 2012), se desarrolló un archivo en el que se identificaron los profesores que estaban poseían la certificación de "*Diseño y docencia en aprendizaje en línea*" (Si=1) y los que no poseían esta certificación (No =0). La Tabla 2 desglosa los datos recopilados para cada grupo de profesores.

Tabla 2: *Facultad a distancia por departamento y la certificación de docente en línea*

	Empresas		Est. Hum/Ped		Cs. Sociales		Cs. Tecn.	
	No	Si	No	Si	No	Si	No	Si
Parte III	3.14	3.67	3.24	3.44	3.42	3.50	3.41	3.49
Parte IV	4.15	4.42	4.22	4.48	4.33	4.48	4.40	4.49

Para cada departamento académico se encontró diferencia estadística significativa (p <.05) en la evaluación de facultad por estudiante de cursos en línea, entre los profesores que poseen la certificación de *Diseño y docencia en aprendizaje en línea* y los que no la poseen. Las figura 3 ilustra de forma visual, estas diferencias entre los datos.

Figura 3: *Promedio de la evaluación de profesores certificados y no certificados para ofrecer cursos a distancia por departamento académico*

Por último, se realizó un análisis de los profesores por el tipo de contrato (tarea completa vs tarea parcial) de los profesores y si poseían o no la certificación de *Diseño y docencia en aprendizaje en línea*. En este caso, no se encontró diferencia estadística (p>.05) entre el tipo de contrato de la facultad y la evaluación de los estudiantes de los profesores que ofrecen cursos en línea (véase Figura 4).
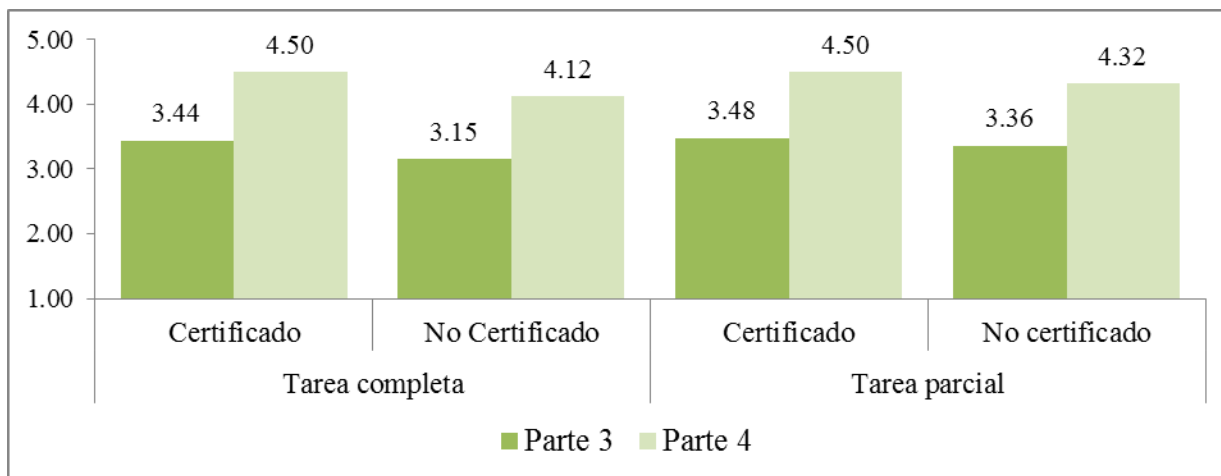
Figura 4: *Promedio de la evaluación de profesores certificados y no certificados según el tipo de contrato*

En resumen, los profesores de los cursos que poseían la certificación de diseño y docencia en aprendizaje en línea, recibieron mejores evaluaciones de los estudiantes, tanto en la dimensión de desarrollo de la clase (parte III), como en la de gerencia del proceso enseñanza-aprendizaje (parte IV).

Reflexión final

A lo largo de este artículo, hemos establecido que el mantra de que "la facultad se recluta por sus credenciales, no por la modalidad de enseñanza" no tiene sentido cuando de reclutar profesores para enseñar cursos a distancia. Aspectos asociados al rol tradicional de la facultad, como lo son: el horario de clases, los días de clase y las horas de oficina, entre otros, ya no son tan importantes en el contexto de la educación a distancia. Como hemos destacado en este ensayo, para enseñar a distancia, se requiere algo más que credenciales tradicionales, se requiere un nuevo set de destrezas. Los profesores que ofrecen cursos a distancia, necesitan desarrollar tanto competencias pedagógicas, como sociales y tecnológicas que le permitan ser exitoso en esta modalidad.

Por esto, las instituciones de educación superior que incursionen en esta modalidad, deben realizar esfuerzos adicionales para reclutar profesores con que posean estas destrezas o competencias. Si por el contrario, optan por la capacitación del recurso humano existente, deben brindar prioridad a profesores que se encuentren en las primeras tres categorías descritas por Rogers (1963). Debido a que de forma general, podemos estimar el grado de receptividad de la facultad al readiestramiento, las instituciones podrán tomar decisiones informadas al momento de reclutar o asignar facultad para diseñar y enseñar cursos a distancia. Concluyo esta reflexión con una frase de Sonja A. Irlbeck (2002), que destaca lo siguiente:

"A good online program does not develop by accident. It can only develop through careful and purposeful processes that include courseware design, technology selection, updating obsolete policies, promotion and acceptance of a paradigm shift, consideration of faculty workload, faculty and staff skills development, and removal of institutional barriers to the development of synergistic teamwork and interdisciplinary cooperation".

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About HETS

The **Hispanic Educational Technology Services** (**HETS**) started in 1993 as a group of institutions interested in sharing courses at a distance. Since its inception, the HETS Consortium has evolved from the use of telecommunications to the asynchronous modes of anywhere-anytime learning, using technology to reach greater collaboration among and within educational institutions. Headquartered in San Juan, PR, HETS networks Hispanic and Emerging Serving Institutions in the United States, Puerto Rico and Latin America in an effort to widen educational opportunities and access to post-secondary education through the use of the technological modalities of distance education. To HETS, and its more than 40 institutional members, technology can especially transform service delivery styles and open the doors to a larger spectrum of audiences. These technologies continuously facilitate the teaching-learning process and foster the expansion of a web of services that promote learner success. For more information about us and our services send an email to: info@hets.org or go to our website www.hets.org.