Volume IX, Spring Issue

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HETS ONLINE JOURNAL

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Message from the Chairman

I am particularly happy to present the Spring Issue, Volume IX, of this publication. The HETS journal traditionally **addresses relevant topics impacting technology and Hispanic Students**; this issue is no exception. This is the third volume that we integrated new areas of interest, including student retention and assessment, and the very important topic of student access.

I hope you will share the link to this Journal with your colleagues. And if you have an innovative technique or would like to share your knowledge and experience in any of these areas impacting higher education, please **consider submitting an article** for the special edition of Volume X that will be published this Fall **on or before September 13, 2019**. Click **here** to **download the guidelines to submit your article.** Your submission should be an **original work either in English or Spanish**. Just send it to the HETS office via e-mail to: **info@hets.org**. Through publications such as the HETS Online Journal, which is included in **EBSCO Publishing's databases,** we can share the latest and best information with others in higher education and focus a wide spotlight on the exciting work being done by our colleagues.

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

I hope you find our Spring Issue both informative and interesting.

Dr. Carlos Vargas-Aburto
HETS Chair
President, Southeast Missouri State University

Message from the Chief Editor

It's finally spring, and nature is blooming with excitement! Spring at institutions of higher education means the end of one academic year, but it's also a time to plant the seeds for the next year. The HETS Online Journal, Volume IX, Spring Issue, is filled with ideas that you may choose to incorporate and grow upon at your own campuses. As always, the articles offer insight to help Hispanic students succeed. Many topics deal with the use of technology in student success, but all are geared towards increasing access, retention, and graduation.

On the first article presented in the issue, *Implementation of a Civic Engagement Community Change Model by a Community College through the Integration of Technology and Social Media as a Strategic Element*, civic engagement and community change are highlighted as pathways to providing educational opportunity in underserved and marginalized communities. This article also considers the need for the institution, particularly a community college, to be responsive to the needs of the community.

Hispanic Students and Online Learning: Factors of Success, presents the results of a study focused on understanding the perceptions of Hispanic post-traditional college student perceptions of the factors that determine success in an online learning are presented. The study consisted of survey, interview, and focus group data.

Teaching Online at a South Bronx Community College focuses on the college's experiences with education technology and online learning. The article offers evidence to dispel the belief that community college students are frequently not successful in online courses. It also explores faculty perceptions of online teaching and suggests things that higher education administrators can do to support faculty who teach online courses.

Article *The Practice of Peer Observation* examines existing literature on peer observation and presents results from a committee convened is presented as a faculty development opportunity that can improve teaching.

Tendencias en la Evaluación de Cursos en Línea identifies trends in the evaluation of online courses and concludes that there is a clear tendency to evaluate the effectiveness and quality of

online courses. It recommends that evaluation of online courses be systematic, rather than limited to the study of achievement and student satisfaction.

To Blend or not to Blend: A Case Study of On-line Learning in General Biology suggests that the most compelling motivation for community college students to take online courses is often the need to juggle work and family obligations in addition to their studies. It also notes that these students are the very ones who tend to underperform in online courses. This case study compares the performance of students taking a hybrid general Biology 1 course to students in the classic lecture sections of the course.

Last, but not least *Zoom: An Innovative Solution for the Live-online Virtual Classroom* is a case study of a courseware experience that used Zoom to create live-online virtual classrooms. The article describes setting up the Zoom account and the live-online virtual classroom. It shares virtual classroom and live-online evaluation experiences and provides recommendations for best practices for hosting and studying in a live-online virtual classroom.

We hope you enjoy this edition of the HETS Online Journal, and also encourage you to **share your own experiences and best practices** for future issues of the Journal. You can **submit your article** for the Fall Issue of our Volume X **on or before September 13, 2019**. We wish you a happy spring and summer!

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Article 1: Implementation of a Civic Engagement Community Change Model by a Community College through the Integration of Technology and Social Media as a Strategic Element.

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ABSTRACT

Historically, the role of the community college has been to serve the non-traditional student. Today's community college is confronted with the challenge that it is failing to attract and graduate in appropriate numbers that non-traditional student, commonly referred to as coming from an underserved or marginalized community, usually referencing poor communities of color. In spite of a general diminution of law and policies providing a remedy for past exclusionary practices, higher education understands that as a matter of equity it has an obligation to provide educational opportunity to the marginalized community. This obligation traditionally has also required the college to be responsive to the needs of the community. The purpose of this paper is threefold: to propose that a college's responsiveness to community now needs to include addressing the conditions that contribute to its marginalization; to posit the civic engagement community change model as the vehicle for the college to develop the kind of collaborative and mutually beneficial relationship with the community that will catalyze curative change; and to underscore the necessity of integrating the use of technology as a strategic element in the development and implementation of the college's civic engagement initiative. Successful implementation of a civic engagement community change model will result in a greater number of graduates from that community, as well as spur the development of a more cohesive, stable and civically engaged community.

KEY WORDS

Community college and civic engagement, community college and community change, civic engagement community change model, community college-marginalized community collaboration, technology and civic engagement, technology and community change, equity and the underserved student, equity and community change, marginalized community development, technology and community development, community college responsiveness to community needs.

Implementation of a Civic Engagement Community Change Model by a Community College through the Integration of Technology and Social Media as a Strategic Element.

INTRODUCTION

The historical mission of the community college has been to serve the non-traditional student; however, she/he may present himself/herself, with the objective of imparting to the student the knowledge and skills necessary to succeed in contemporary society. Today's community college is confronted with the reality that it is failing to attract, much less retain and graduate, in appropriate numbers that category of non-traditional students commonly referred to as coming from underserved or marginalized communities (Diem, 2015). More often than not this is a reference to poor communities of color, where the exclusion or marginalization has been primarily, but not exclusively, driven by racial or ethnic prejudice and/or discrimination (Diem, 2015). The situation with regard to accessing and admitting these students has been exacerbated by the waning influence of affirmative action as a matter of law and of policy, as there has been a general diminution of the federal effort to provide a remedy for past exclusionary practices or policies, especially as concerns higher education (Baber, 2015). Higher education, to its credit, notwithstanding the almost total demise of affirmation action, remains steadfast in its understanding and acceptance that as a matter of equity it continues to have an obligation to the nation's underserved and marginalized communities.

Indeed, higher education seems to understand that in order for these communities to maximize the realization of their potential and achieve socioeconomic "success," their challenges

regarding the development of human resource capital and the building of their collective community capacity must be addressed (Baber, 2015). Addressing those challenges is a task that remains squarely within the parameters of the traditional mission and role of the community college.

However, today the task of addressing those challenges goes beyond the college merely serving as an institution for the education of the underserved student. The college today, as a matter of equity, needs to go beyond the traditional methods of linkage with the community, for example, community-based practicums, and strive to serve as a focal point and engine for curative community change. The college needs to work collaboratively with the marginalized community to alleviate those conditions and circumstances that continue to plague it, and which make it more difficult for the college to attract and graduate its students (Baber, 2015). This college-community collaboration to mutually beneficial results for both parties should be founded on an enhanced pedagogy of service learning, with a focus on community change through civic engagement.

The community college, because of its history and mission, is the institution of higher education most suited for the development and implementation of the civic engagement community change model. Moreover, in keeping with its commitment to be responsive to the community and its history of innovation, the community college is best positioned to develop the kind of collaborative, comprehensive and mutually beneficial relationship with the community that will catalyze and sustain curative change. Technology and social media are strategic elements in the community college's development and implementation of the civic engagement community

change model.

The Suitability of the Community College

To accomplish its mission of reaching and educating the non-traditional student, the community college has traditionally focused on three different areas: access to higher education; equity; and responsiveness to community needs (Troyer, 2015).

Access to higher education and equity

Operating within this framework and its mission regarding the non-traditional student, the community college had been in the forefront of innovation and change. Consider, for example, open admissions. The contemporary community college honors that tradition even as it struggles to reach and offer its services to the residents of marginalized communities.

More specifically, today's community college understands and accepts that if it is to be effective over time in retaining and graduating the underserved community student, the college as a matter of equity must provide that student with academic and other supports, including, but not limited to, developmental and remedial courses, technical support and the tutoring services necessary to make them college ready (Jones, 2016). The college should also provide the student with the psycho-emotional supports necessary for him/her to successfully bridge the educational readiness gaps fostered by the community conditions that contributed to the student's past marginalization (Potts & Bierlein Palmer, 2014). Addressing these readiness gaps, although generally applicable to the customary non-traditional student served by the community college, is especially true for those students whose past marginalization was in whole or in part due to racial or ethnic discrimination (Jones, 2016).

When the latter is the case, equity imposes an additional mandate, one meant to minimize the possibility of the underserved student quickly separating from the college. Equity requires that the college become more institutionally sensitive and user friendly as concerns the specific historical issues of marginalization of this particular underserved student subset. The college will need to recognize that for the underserved student whose past marginalization was in whole or in part due to racial or ethnic prejudice and discrimination, there exists either consciously or subconsciously a sensitivity to again being victimized by such prejudices or discrimination. This sensitivity could easily morph into a hypersensitivity if the college is a majority population institution where the underserved students' presence is minimal or glaring. Operationally, achieving the institutional sensitivity translates to the college personnel, individually and collectively, going beyond simple recognition of the evident diversity presented by these students to embracing their inclusion through the creation of a welcoming, culturally sensitive and equitably participatory educational environment (Kisker, Weintraub, & Newell, 2016).

It will be necessary from the start of these students' college experience, that the college, by word and deed, during all bureaucratic processes and interactive junctures, demonstrate that its objective is full participatory integration of these students into the college community rather than their mere statistical representation. Failure of the college to do so, or perception by the students of tokenism or racially-ethnically based isolation on campus could easily lead to the early separation of these students from the college. Equitable participatory integration and inclusion of these marginalized students by the college is the groundwork for solidifying their

initial retention, which in turn lays the foundation for any civic engagement-community change model being considered by the college.

Responsiveness to community needs

The third component of the community college mission, responsiveness to community needs, is presently best exemplified by the programs and practices that the community college provides to promote the development of both individuals and the communities to be served (Troyer, 2015). Examples of these programs and practices are service-learning courses, community-based practicums, community-service projects or days inclusive of the current integration within these programs and practice of technology and social media, especially as a way to facilitate or promote engagement with the community (Watson-Thompson, 2015). However, within the context of a college-community collaboration to foster and promote changes in an underserved community, the responsiveness to individual and community development requires a more comprehensive and permanent linkage than the limited contact provided by a service learning course or practicum site.

The Civic Engagement Community Change Model

The Civic Engagement Community Change Model envisions the development of a mutually beneficial, collaborative relationship between a college and the underserved community or communities to which it has a connection. For each of the parties, a principle objective of the collaboration should be for the college to reimagine its self-identification from that of being primarily an insular institution of higher learning to an identification as community embedded asset in possession or control of a storehouse of knowledge, expertise and resources.

Moreover, an identification as a community asset which, if joined with other community assets, and harnessed for community change, could be the basis of a mutually beneficial relationship grounded in community improvement (Deggs & Miller, 2013). The community improvement goals and objectives would be toward curative changes to the conditions and circumstances that have contributed to the members of the community being underserved and marginalized particularly if those circumstances include race-ethnic based prejudice or discrimination.

The civic engagement community change model builds and expands on the already proven service-learning pedagogy (Barnhardt, 2015) in that it will require the active engagement of students, especially students who are members of the marginalized community to which the college is connected and directing its efforts, at community sites as course or project requirements. However, the model goes beyond the service-learning pedagogy in that the course or project will be part of a broader, more permanent community change initiative that has been jointly developed, and is being jointly implemented, by the college and the affected community as co-equal partners.

Commitment of the college administration and governance

This broader, long-term plan may require the commitment and involvement of the college administration and governance as well as its students. Entering into, as well as maintaining, the relationship with the connected marginalized community may require a purposeful and deliberate consideration by college leadership that may necessitate a re-interpretation of the college's mission and vision. The development and integration of community-civic engagement in connection with a program of community change under an expanded college mission

presents a complex and challenging task for a community college (Kisker, Weintraub & Newell, 2016). The college administration and governance may need to formally recognize that there are legitimate and compelling reasons to pursue both the successful substantive education of current students who come from marginalized communities while simultaneously serving as a committed partner with the community as a catalyst for long-term positive change (Finley, 2016).

The college administration and governance will need to have faith and perseverance, notwithstanding the college's immediate real-world pressures, that continued engagement in the aforementioned parallel processes will assure that a greater number of students from the community targeted for improvement will not only choose to attend the college in the future, but that these future students will also be better prepared and more committed to successful achievement of their individual educational objectives. This will be due in part to either the individual's or a partner's perception of a substantive beneficial relationship between successful completion of their studies at the college and the return of positive benefits to the community – a source of motivation for many potential students from underserved communities.

Presently enrolled students from marginalized communities, as well as future students, will be motivated to enroll and complete their degree programs of study because they share a bifurcated intent with regard to being in college. These students, like most students, want to succeed socially and financially as concerns their personal career objectives. However, these students also harbor a desire to contribute in the future to the amelioration of those negative

community factors and conditions that they either had to endure or that they perceived as obstacles to others from the community obtaining a college education, or to advance community progress and development. In short, these students harbor a motivation to "give back" to their community, which needs to be recognized. For today's students, this "give back" motivation is exemplified and fulfilled by their studying to be police officers, social workers, teachers, nurses or other professionals who they perceive as being able to work directly with the community to address the negative conditions that exist or the consequences of those conditions.

The civic engagement community change model recognizes and validates the "give back" motivation of present day and future students. The model is intended to address those circumstances that have contributed to the student's marginalization, especially if the circumstances included racial or ethnic discrimination or prejudice as a defining factor. The model provides a pathway for the student to "give back" in a direct and concrete way that will contribute over time to the development of a stronger community less affected by the circumstances and conditions that impacted negatively on his/her ability to access a college education. Within the framework of the model, the college will also provide the marginalized student with the general educational and major-specific skills, knowledge and aptitudes that the each will need to be personally successful in their future academic and career pursuits. In short, the civic engagement community change model institutionalizes the bifurcated approach to the marginalized student's motivation.

In addition, for the model to succeed, the college will also have to tailor its activities to meet

the socioeconomic needs of the students and the marginalized community being served (Chenneville, Toler & Gaskin-Butler, 2012) as well as customize its activities to the experiential learning level of the community (Freeland & Lieberman, 2010).

Yet for college to be most effective and efficient with regard to meeting its obligations under the bifurcated approach, if not regarding all of the efforts flowing from its civic engagement community change initiative, the college will have to incorporate technology and social media as part of its planning and implementation strategy.

Incorporation of Technology and Social Media Essential to the Development and Implementation of the Civic Engagement Community Change Model or Initiative

Today's student, and presumably tomorrow's student, as well as any younger member of a college's attendant underserved community, are very much attuned to the use of technology and social media. The age of the manually posted, hard-copy flier and time-encumbered telephone communication has given way to the age of real-time digital and visual communication. Use of the internet and social media has increased exponentially during these first twenty years of the 21st century (Delacruz, 2009), and there is no reason to believe that usage will decrease or that the variety and formats of technology and social media will diminish.

Social change and civic engagement activities have been enhanced and transformed through the application and utilization of digital technology and social media while simultaneously being freed from the previous limitations of resources, distance or geography. Social media has transformed the way in which individuals engage with political ideas and campaigns. Social

networks such as Facebook, Twitter, Instagram and You Tube, among many others, have been responsible for effective and powerful political campaigns (Brush & Saye, 2008), for communities claiming their respective rights and finding their voices (Cantor, Englot & Higgins, 2013), and the dissemination of information, perspectives and viewpoints, sometimes controversial or negative, concerning pressing or pending social issues (Delacruz, 2009). Indeed, technology and social media have reinvented how individuals and their corresponding communities respond to or engage with issues affecting the society in general or their sliver of society in particular.

The collaborative joint venture that is the civic engagement community change model presents a unique opportunity to utilize multiple forms of technology and social media at every stage of the model's planning, development and implementation. As the models will vary from college to college, the forms and technology that will be utilized will also vary. However, there will be some commonalities including the development and consensus by the parties regarding what technologies will be utilized, for what purposes, to what extent and for how long. The "baby steps" of the requited college-community collaboration regarding the civic engagement community change model could very well be decisions regarding the use of technology or social media to inform the community of the venture, to identify the factors contributing to the community's marginalization, or to determine its socioeconomic needs (Chenneville, Toler & Gaskin-Butler, 2012) or its level of experiential learning (Freeland & Lieberman, 2010).

A website dedicated to the college initiative, with links to the websites or Facebook pages of

the college, community partners or students, may be the best way to share up-to-date information about model-related activities and developments. It may also become the primary and most effective mode of disseminating information about the project, as well as facilitating communication among all the involved parties: the college, the students, the community partners and members. Twitter may become the best way for model participants to address in almost real time issues or events relevant to civic engagement or community change impacting on the community or the college.

Beyond the planning stage of the civic-engagement community change model, the use of technology and social media platforms as organizing tools in and of themselves, or in conjunction with on-the-ground organizing efforts concerning the factors that continue to contribute to a community's marginalization, is critical. Groups of all political stripes from the Black Lives Matter Movement to the White Nationalist Movement have strategically and successfully utilized technology and social media to educate, inform or motivate their members and/or to attract and inculcate new members regarding their respective causes and projects.

There is no limit to the type or modality of technology or social media that the college or the community can devise and utilize in the development of its civic engagement initiative, or as a part of the subsequent college-community campaigns to address the factors contributing to a community's marginalization. Some of the ideas that have been floated in conjunction with development of a community change model initiative or organizing campaign include:

- community mapping of various types

- asset-based community development analysis
- virtual community planning and development
- Issue-based computer programs for planning, research or assessment purposes
- blogs and/or podcasts and/or list-serves
- participatory electronic consensus building, nominations and voting
- app and game development concerning targeted issues
- digital participatory cell-phone based voter education
- community-based electronic interactive informational/news kiosks or bulletin boards
- participatory action research and feedback mechanisms
- customized software development
- video/film and animation production (various types for social media distribution:
  You Tube)
- website development
- text and instant messaging for alerts and real time activity coordination
- customized and/or focused use of digital platforms: Facebook, Twitter, Instagram, Tumble, Digg and other current or future platforms.
- smart board and smart classroom utilization for academic and community education or training

The quantity, quality and extent of the use of technology and social media will vary from college to college and it will be tailored to the goals, objectives and reality of the college and the needs of its attendant community or communities. The impact of technology and social media on an

initiative or campaign concerning community change cannot be underestimated.

In the hands of today's, or tomorrow's tech-savvy students and community members, even in communities where accessibility may be limited because of hardware or software issues, the use of technology and social media may be the most important tool for catalyzing or supercharging community change through community activism or mobilization. The incorporation and use of technology and social media in the development and implementation of a college's civic-engagement community change model is not optional. Failure to do so, or to minimize its utilization, is to jeopardize the initiative's reach and effectiveness concerning both the impact on the underserved student from a marginalized community, and the changes sought to be accomplished with and within that community.

CONCLUSION

Today's community college may be the key to catalyzing the type of change in marginalized and underserved communities, primarily poor communities of color, that addresses the conditions and circumstances that continue to contribute to the community's marginalization. Building on its history of serving the non-traditional student and its penchant for innovation, the college, by becoming an equal partner with the community in a joint venture to stimulate community change through civic engagement and the integrative use of technology, should reap the benefit of more and better committed students attending and graduating from the college. Simultaneously, the community will reap the rewards of becoming a more cohesive and stable community able to define its own voice and development. This is a triple win situation as the college, the community and society in general will all be short-term and long-term beneficiaries of the civic engagement community change model.

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Article 2: Hispanic Students and Online Learning: Factors of Success.

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Abstract

This study focused on understanding Hispanic post traditional college students' perceptions of the factors of success in an online learning environment at a Hispanic Serving Institution in the United States. Survey, interview, and focus group data indicate that Hispanic post traditional students assert that hybrid learning, social interactions, faculty communication, and independent learning behaviors contribute to successful outcomes in online learning. Furthermore, Hispanic students learn best when engaged with peers and faculty, have access to a brick and mortar institution with support services, and consider face to face interaction important to their learning experiences.

Hispanic Students and Online Learning: Factors of Success.

Introduction

In the United States, Hispanic undergraduate enrollment is expected to increase 27% by 2022 (Hussar & Bailey, 2013), making it a growing population in colleges and universities when compared to a projected 7% increase among Caucasian enrollment during this same period (Hussar & Bailey, 2013). Hispanic college enrollment is expected to continue to increase, as Hispanics are the fastest growing population and possess the largest and youngest racial ethnic group in the United States, indicating that this group is a strong driver for the labor and economic markets (Patten, 2016; U.S. Census Bureau, 2017; U.S. Department of Labor, 2012). Despite Hispanic college enrollment rates, Hispanic college completion rates remain low at 16%, compared to the 40% completion rates of their Caucasian peers (McFarland et al., 2018). With the increase of Hispanic college enrollment and their high attrition rates, it is important to understand characteristics and experiences that lead to success among Hispanic college students, especially at Hispanic Serving Institutions (HSIs), those colleges and universities in the United States that possess over 25% of Hispanic student full-time enrollment (Johnson & Galy, 2013; Santiago, 2013). In the United States, HSIs serve almost 60% of the Hispanic college student population (Santiago, 2013); many are considered post-traditional students, those classified as being 18 years and older, commuter students, wage earners, and in many cases, first generation college students (Soares, 2013). Post-traditional students tend to choose a college that is accessible, close to home, and affordable; they seek alternative options for

learning and integrate online or hybrid courses into their degree seeking plans as a flexible strategy to complete college goals. Moreover, a large percentage of Hispanic post-traditional students attend HSIs (Santiago, 2013).

Concurrent with the increase of Hispanic college student enrollment is the proliferation of e-learning integration among the nation's colleges and universities in fully online, hybrid, and web-assisted courses. In fact, online education has become an integrated long-term strategy at many higher education institutions in fulfilling their enrollment and degree completion mandates, and upwards of 28% of college students enroll in at least one online course (Allen & Seaman, 2015). With the integration of online learning, many students choose to enroll in hybrid or fully online courses, which form a part of their campus-based degree programs. They do this for flexibility in scheduling and to advance degree completion (Johnson & Galy, 2013). Among higher education institutions, public colleges and universities enroll the most distance education students, but nonprofit private colleges have experienced a 33% growth in offering distance education courses in the last few years; this includes HSIs (Allen & Seaman, 2015). Yet, despite the increase in Hispanic student college enrollment and the development of diverse types of online learning options, there is little research on Hispanic students and online learning (Johnson & Galy, 2013; Lu & Cavazos Vela, 2015). Research also suggests that minority students, such as Hispanics, may lack the engagement skills in an online environment and experience some anxiety using technology in learning (Enoch & Soker, 2006; Johnson & Galy, 2013). This study provides insight on Hispanic student online learning trends and perceptions at one HSI.

Theoretical Framework

The purpose of this study was to explore post-traditional Hispanic college student perceptions of success factors in an online learning environment at one Hispanic Serving Institution, to understand the attitudes, ideas, and experiences this group of students has had with online learning in their campus-based degree programs. Using Tinto's (1987) theory of social interaction, which asserts that exchanges that occur between students and their peers, students with faculty, and that the overall social experiences in a college learning context influence the student's ability to persist academically, survey and interview questions were developed to explore student perceptions and experiences with online learning. Data collection was designed to inquire about student interactions with peers and faculty, student self-efficacy, and perceptions on successful outcomes in the context of an online course. In an online environment, interaction may be determined by many factors in course design, applications used to engage students, a student's online learning readiness, past experiences in online learning, experience with technology, and a student's ability to navigate the learning environment (Johnson & Galy, 2013; Kim, 2009; Lu & Cavazos Vela, 2014). Online learning requires students to be independent, self-regulated learners, and to possess a level of self-confidence in using technology in the learning process (Mannan, 2007). Student interaction with faculty and peers in an online environment may increase their self-efficacy and self-regulation, possibly increasing their ability to succeed online by helping them become independent learners, an important component to increasing success in an online environment (Johnson & Galy, 2013; Mannan, 2007). Online learning environments should nurture the

independent learner, provide social interaction, and help students develop self-efficacy (Schunk & Zimmerman, 2003). This study investigated the factors Hispanic college students attribute to their persistence and success in an online environment. Nora and Grisp (2012) asserted that research on Hispanic student achievement would benefit from a broadening concept of success to include the social experiences and interactions with faculty, staff, and peers.

Literature Review

Data indicates that Hispanics are enrolling at a lower rate than their counterparts in online courses (Koenhke, Kyger, Berg, & Stroud, 2013) and suggests that there are social integration, online readiness, and course design issues, among other factors, that may hinder their success in an online learning environment (Ali & Leeds, 2009; Johnson & Galy, 2013; Markle, 2015; Wozniak, Pizzica, & Mahony, 2012). Low levels of persistence in online courses include a student's external and internal factors, as well as the context of the learning environment. While internal factors revolve around a student's ability to motivate themselves to stay on task to complete coursework, there are also external factors such as the time constraints, family burdens, and even financial situations associated with an individual's ability to persist in an online learning environment (Croxton, 2014; Hart, 2012). Online student success is continuously measured by similar variables across studies; these include retention rate, course grade, and student level of satisfaction with the course (Croxton, 2014; Hart, 2012). Another indicator of success in online learning has been the student grade point average (GPA); research shows that a student with a high GPA who enrolls in an online course has been almost always found to do

well in an online course (Hart, 2012; Markle, 2015). Yet, some researchers argue that the reasoning behind the success may not be the individual's GPA, but rather the factors related to motivation, time-management and good study habits (Johnson & Galy, 2013; Markle, 2015; Wladis, Conway, & Hachey, 2015; Xu & Jaggars, 2014). Self-motivation has been linked to online learning persistence and a major aspect of self-motivation is linked to self-efficacy, or, a student's confidence to complete the course; this has been found to correlate with students' persistence, and, in turn, their success (Hart, 2012). Ethnicity and age are other factors that may be linked to online student success, as are a student's background, technology access, or levels of stress experienced during the college going years (Xu & Jaggars, 2014).

Other factors have been more controversial in their correlation to student success. Females are believed to perform better in online courses when compared to their male counterparts. Studies support this statement across all majors (Wladis et al., 2015; Xu & Jaggars, 2014), except for one study where data demonstrated that females are more vulnerable to failure in Science, Technology, Engineering and Math (STEM) online courses as compared to males (Wladis et al., 2015). Similarly, age is another disputed factor. Some research indicates that younger students are more adept at using technology and this puts them at an advantage, therefore allowing them to outperform older students in online coursework (Henson, 2014; Wladis et al., 2015). However, another study reported that older students had a better adaptability to online courses than younger students (Xu & Jaggars, 2014). While online learning has its benefits, there are several factors to consider when trying to understand success factors and address attrition in online courses.

Hispanic Students and Online Learning

By and large, higher education institutions may take for granted that Hispanic students would academically thrive in an online environment. With a few training modules on how to navigate the learning management system, most institutions have launched Hispanic college students into the world of e-learning and expect success. This population, however, has characteristics that may affect the effectiveness of online learning. Many are immigrants or first generation children of immigrants who have only experienced technology in a recreational context (i.e., cell phones, video games, web browsing). Skills developed and utilized during the use of recreational online media may not transfer effectively into the online learning environment. Learning for this population has been in the traditional classroom setting, which they prefer, where they can share their life experiences through lively discussions that connect course content to employment, participate in group projects, and complete assignments with peers (Van Doorn & Van Doorn, 2014). Findings from one study found that time management, self-confidence in technology skills, and independent learning were significantly linked to variables in Hispanic student online course success (Johnson & Galy, 2013). From a cultural perspective, Hispanic students seek out mentoring experiences with faculty; they develop relationships with people on campus that aid them in accessing resources and cultivate their funds of knowledge (Arbelo-Marrero & Milacci, 2016; Castellanos, Gloria, Besson, & Harvey, 2016; Schwartz, Kanchewa, Rhodes, Cutler, & Cunningham, 2016). Relationships are not easily transferable to an online environment; some students may experience isolation and discouragement (Mahoney, 2009). For first generation or immigrant college students, language barriers, lack of

English writing proficiency, and knowledge about the United States educational cultural norms may be a deterrent to their success in an online environment. Further, individuals in this population may struggle with managing family households and financial commitments. Learning how to navigate an online educational environment without face-to-face interaction or live mentoring opportunities may make seeking a degree in higher education their last priority (Beyrer, 2010).

Problem Statement

While online learning has emerged as an important aspect of higher education and enrollment in online education has increased by almost 30% over the past five years, attrition rates for online courses is on average about 35% in the United States (Allen & Seaman, 2015; Hachey, Wladis, & Conway, 2013; Xu & Jaggars, 2011). It is obvious that online learning will impact degree completion as colleges and universities add online learning to their curricular models. With Hispanic students lagging in degree completion, it is imperative to understand factors of success for online learning in order to adopt practices and models that work well for these students. The purpose of this study was to understand post-traditional Hispanic student perceptions about online learning and to what they attribute their success in an online learning context. Using survey and interviews, data was collected from a larger sample population *n* = 104 (survey), and *n* = 10 (interview and focus groups) to understand factors of success for post traditional Hispanic students in hybrid and online courses. With the dearth of literature on

Hispanic students and online learning, this research study adds to the literature on this topic.

Methodology

Research Questions:

To understand the experiences of Hispanic students in online learning and further explore their perceptions and attitudes toward online learning, the following research questions were developed:

How do Hispanic post-traditional students describe their experiences in an online learning environment?

What factors do Hispanic post-traditional students attribute to successful online learning experiences?

Sampling and Data Collection

A web-based Likert scale survey was administered using Questionmark Perception, sent from the student support services department of a small private not for profit HSI with over 75% Hispanic student population. The survey targeted student programs of the institution with fully online and hybrid course components; these included the undergraduate psychology, education, and criminal justice programs and graduate programs in education and industrial and organizational psychology. Students received a survey link by email with an explanation of the study and a consent form to review; no identifiable information was collected. Responses were sought from Hispanic students that had previously participated in either a hybrid or fully

online course at the institution, and who were over the age of 18. Of the 167 students who were sent the survey, 104 completed the survey (see Table 1). Researchers piloted the survey with a small student group of post-traditional students to determine item clarity and revised survey and interview questions based upon student feedback. The survey instrument collected demographic profiles, online learning experiences, accessibility to technology, technology readiness, and student preferences and attitudes towards online learning (see Table 2). Creswell and Poth (2018) asserted that quantitative data that is collected as scores on a survey instrument has the potential to establish trends on a large number of people which can prove very helpful when studying a phenomenon such as online learning. Once the survey closed, data was exported from Questionmark Perception to an Excel file and then to Statistical Package for the Social Sciences v.25. Tables 1 and 2 present the descriptive data; no hypotheses were developed because this was not a validated instrument. This instrument was developed to collect descriptive data on the attitudes of students toward online learning among this student population.

Table 1 - *Survey Population Descriptive Statistics*

Category	Frequency	Percentage
Gender		
Female	83	81
Male	20	19
Age		
18–24 age	27	26
25–29 age	41	39
≥ 30 age	36	35
Other Characteristics		
Undergraduate	57	54
Graduate	47	46
First Generation	52	50
English Language Learner	68	64

Table 2 -*Frequencies for each Statement Measured*

Category	Item	*N*	Mean	Standard Deviation	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Access	I have access to a computer at home.	104	4.82	0.51	1%	0%	3%	10%	86%
Access	I have access to the internet from my home.	104	4.76	0.67	0%	4%	3%	8%	85%
Social Technology	I use email to communicate regularly with friends and family.	104	3.8	1.35	7%	18%	13%	15%	47%
Social Technology	I feel confident in using technology for social purposes (i.e. email or texting friends, using Facebook/Instagram/Twitter).	104	4.62	0.8	1%	4%	3%	17%	75%
Academic Technology Use	I often use internet search engines, such as Google Scholar, to complete class assignments.	104	4.61	0.74	0%	4%	4%	20%	72%
Academic Technology Use	I use the university virtual library databases to help me complete my assignments.	104	4.21	1.17	5%	6%	13%	15%	60%
Online Learning Confidence	I feel confident enough to complete a fully online course	104	4.25	1.03	1%	10%	9%	25%	55%
Online Learning Confidence	I feel confident enough to complete a hybrid online course	104	4.36	0.97	1%	5%	9%	27%	58%
Online Learning Confidence	I feel confident participating in discussions in an online class (i.e. discussion boards, chat rooms, etc.)	104	4.2	1.1	5%	5%	10%	27%	53%
Online Teaching and Learning	I find the discussion boards in an online course helpful to the learning process.	104	3.97	1.21	5%	7%	18%	25%	45%

Face-to-Face Meetings	As long as I learn the class material, I do not need to meet with my professor face to face.	104	3.00	1.33	14%	28%	24%	14%	20%
Face-to-Face Meetings	I feel knowledgeable enough in the English language to complete an online class without face-to-face assistance.	104	4.29	0.91	2%	3%	11%	34%	50%
Degree Completion	Fully online courses allow me to complete a degree and not stop working	104	3.94	1.13	4%	7%	19%	31%	39%
Face-to-Face Meetings	I learn less in an online class than in a face-to-face class, because the professor is not present at all times.	104	3.09	1.27	15%	19%	18%	36%	12%
Face-to-Face Meetings	Face to face meetings with professors are important in my learning experiences	104	4.47	0.85	1%	4%	7%	24%	64%
Online and On Campus	Learning online is the same as learning in an on campus course.	104	2.55	1.49	31%	30%	13%	8%	18%

Survey items were grouped using construct clusters of access, technology use, online learning confidence, online teaching and learning, and face-to-face interaction. Data was self-reported; which limits validity (Creswell & Poth, 2018); all quantitative data is descriptive to allow us to gain a sense of the student population's experiences and attitudes about online learning. Table 2 displays the item mean, standard deviation, and Likert scale distribution. Data was collapsed by rank and averaged by the following categories: Access, Social Technology Use, Online Learning Confidence, and Online Teaching and Learning. Face-to-Face Meetings and Academic Technology Use were not collapsed due to the nature of the questions; we thought that it was worth reporting them individually to present truer data on these categories. For example, for the Access category, the statements "I have access to a computer at home" and "I have access to the internet at home," the *strongly agree* and *agree* survey items were collapsed to represent one percentage (94%). Ninety four percent of respondents reported they had access to computer and internet off campus, 77% reported they use social media and email to communicate with friends and family, and 92% of respondents reported that they use internet search engines to complete class assignments. Seventy-five percent of respondents reported using the university's virtual library, 81% of respondents reported having online learning confidence, and 70% reported discussion board activities helpful to the learning process. Only 34% of respondents expressed that face-to-face interaction was not important to learning and 71% agreed that online learning would help them complete their degree while working. Across respondents, only 26% reported that online and on campus learning is about the same.

Phenomenology

The second part of this study sought to understand Hispanic college student experiences with online learning to obtain a sense of "what works" for this group. Mainly interested in understanding Hispanic post-traditional student experiences online and understanding their preferences, the following research question guided the qualitative portion of this study:

RQ: What type of experiences do Hispanic post-traditional students understand as having contributed to their success in an online environment?

A qualitative phenomenological design was used to explore this phenomenon by reviewing descriptions of participant experiences and using the human experience as the main source of data (Creswell & Poth, 2018; Moustakas, 1994). Van Manen (1990) asserted that the lived experiences of individuals with a specific phenomenon can lead to a discovery of collective ideas that elucidate a phenomenon. Moustakas (1994) believed that there was a connection between the descriptions of experiences and underlying meaning of that experience. Using an in-depth interview process and focus group protocol, this research examined the ideas and experiences of Hispanic students with online learning. Using purposeful sampling techniques, we recruited 10 Hispanic students over the age of 18 who satisfied criteria as post-traditional Hispanic college students enrolled in a degree program at an HSI who had participated in a fully online or hybrid course (Patton, 2015). Post traditional students as mentioned above are those who are 18 years and older, commuter students, wage earners, and in many cases, first

generation college students (Soares, 2013). To recruit students, flyers were posted on various bulletin boards on campus, in the student services office, and an invitation was sent to all undergraduate and graduate master level students through the Office of the Dean of Student Affairs. Participants were recruited from the same HSI; 3 were males, 7 were females, and ages ranged from 23 to 49. All were Hispanic, two were born in the United States, and the others were born in Cuba, Peru, Spain, and the Dominican Republic (see Table 3). Purposeful sampling allowed us to recruit the individuals with online learning experiences that could elucidate this phenomenon among this specific population (Patton, 2015).

Table 3
Qualitative Participant Description

Category	Frequency
Gender	
Female	7
Male	3
Age	
18 - 24 age	2
25 - 29 age	4
≥ 30 age	4
Other Characteristics	
Undergraduate	10
Born in the United States	2
Born in Latin America	8
English Language Learner	8
Participated in Hybrid Course	9
Participated in Online Course	10

Data Collection

All participants completed a consent form and a demographic survey during the initial meeting with principal investigators. Time was spent building rapport with participants, explaining the interview protocol, and answering any questions that they had about the study (Creswell & Poth, 2018; Scott & Garner, 2013). The demographic survey recorded participant gender, age, program, level of study, country of birth, first language learned, and participation in online learning. In-depth interviews were digitally recorded and transcribed within 48 hours of the interview; these ranged in time from 40 minutes to 60 minutes. The transcriptions were de-identified as participants were each assigned a number, P1 (Participant 1), P2, P3, up to P10. The interview narratives were reviewed by participants for validity. Thematic units were presented to participants during a focus group for accuracy and confirmation. Creswell and Poth (2018) asserted that having a third type of data collection increases the reliability of the findings.

Data Analysis

Initial coding was the first layer of coding used to identify salient attributes of the interview transcriptions (Saldaña, 2016). Raw data was analyzed using open codes on a line-by-line approach; these were read and reread (van Manen, 1990). Some of the codes identified during this initial coding process were “independent learning,” “self-motivated,” “time-management,” “social interaction,” and “access to professor.” These initial codes were noted on the

transcription narratives and on the page margins (Saldaña, 2016). The next layer of coding was descriptive coding (Saldaña, 2016); this was used to summarize the topics in the transcriptions and narratives, such as "access to professors," "campus social networks in virtual setting," "visual course content," and "detailed feedback from professor." This layer of coding revealed emerging ideas in the transcriptions while also providing an understanding of the meanings of transcription content (van Manen, 1990). The third layer of coding was pattern coding (Saldaña, 2016); that is, identifying repetitive ideas and descriptions in the data transcriptions with notes, and highlighted content from prior layers; these were assessed for thematic patterns. This exercise helped to formulate explanations, identify connections between phrases, and further cluster ideas generated throughout the coding process. Examples of clustering patterns in this study would be "independent learning" and "successful online experiences." The cluster codes helped to form overarching codes such as "online learning experiences" and could then be reviewed again for further development (Creswell & Poth, 2018; Saldaña, 2016). This analytic process provides a means for an ongoing data-reduction process to accurately depict the phenomenon in themes (van Manen, 1990). After coding the data, it was organized into cluster patterns that were developed into thematic meaning units (Creswell & Poth, 2018).

Qualitative Findings

Data analysis revealed four themes that Hispanic students attribute to successful online learning experiences. These are independent learning, social interaction, faculty

communication, and hybrid preference (Figure 1).

Independent Learning

Hispanic post-traditional students assert that to succeed in an online learning environment, a student must know how to study independently. Participants believe that students must be self-motivated and resourceful in navigating the learning process on their own. One female participant voiced this assertion, “in online learning you have to teach yourself, have a willingness to learn on your own.” Another stated that there was a lack of human contact, and concern that the professor did not “see” the effort that students make to complete their assignments and only note the finished product. A male participant stated, “You are the person that sees your own efforts in an online class, the professor does not see this.” Participants aver that students should be focused on their learning outcomes, self-disciplined enough to overcome the opportunity to procrastinate, and manage time efficiently. Participants described online learning as time consuming while doing the actual reading, watching videos, and assignments, but flexible because you are not required to be physically on campus. One participant stated, “I had to study a lot more than having my professor answer my questions right away.” Another stated, “You take days of the week to work on your online class and set your own goals to meet deadlines.” When asked what helped her complete an online course, one participant stated, “my own self-motivation to really want to complete it.” Participants described a learning curve in online learning related to complicated initiations into an online learning environment, and not understanding how to navigate learning management systems

made it a challenge.

Social Interactions

All participants described in their interviews a need for a virtual social structure in the way of linkages and communities in online learning. They need to interact and engage with peers in a concrete manner beyond the discussion board. Synchronous chats, skype meetings with peers and faculty were activities they described that gave them a sense of a virtual community. One participant stated, “not hearing a professor’s voice can be challenging,” another stated, “peer interaction is sometimes missing.” The discussion board forum or group projects require some interaction but participants seek a deeper link to their peers and faculty in the online classroom. One participant stated, “this [online learning] is a very abstract way to learn,” “you don’t have the same interaction that you do on campus and that makes it challenging.” In online classroom activities learners obtain information, exchange documents, and collaborate to complete tasks, but much of their social capital is still campus based. “Being able to come to campus and meet with a professor that is teaching me online has helped clarify doubts about assignments and feel connected to something.” Another participant asserted, “seeing my faculty is important because I get to ask those questions and get clarification, a lot can be misinterpreted. But when you look at someone and they’re responsive it clears up any confusion…it opens doors for communication and knowledge.” For many, having campus friends in their courses has helped them succeed because there is a built-in social structure to support them, “having friends in the same class helps, we call each other, work together, talk

out our doubts about assignments." Social structure in online learning is supported through campus-based connections, cohort group learning both on campus and online, and access to faculty in a brick and mortar context.

Faculty Communication

Participants of this study made it very clear during the interviews that clear and consistent communication is imperative in an online learning environment. Many described situations where they were "stuck" with a problem or question and had difficulty moving on in an assignment if the question was not answered. Some described feelings of isolation, frustration by a lack of timely feedback from faculty, uncertainty in navigating the course shell, and in some instances, the desire to quit. "It was difficult to find like the places, the links, and the discussion boards; it was confusing." One participant described dropping an online course because the isolation was too much. They wanted to see a physical person to answer their questions. Another described a positive communication experience as "…if I had a question, I would hear back from my professor within 24 hours; that was very helpful for me." Phrases that participants used to describe the quality of the communication with faculty were "patient when I have questions," "quick turnaround on emails," "thorough feedback," and "attentive professor." There was a general perception of a lack of support in the online environment, at least as compared to their on campus environment. Participants stressed the role of faculty presence in communication. One participant stated, "there was no sense of 'here I [professor]

am' to answer your questions." Some participants mentioned the phone as an optional mediator that supported their connection to a professor; others mentioned text messaging. Being able to call a professor and hear their voice added a supportive aspect to the online learning environment. "…because verbally they understand better what you are trying to say and what you are asking."

Hybrid Preference

Eight of 10 participants stated that they preferred hybrid course learning experiences over fully online learning experiences. Many described face-to-face meetings as imperative to their learning process. One participant stated, "[I prefer] hybrid because it is good to have an online class if the class can meet from time to time, to see each other face to face; this is the best because you socialize more, discuss course concepts, and learn from each other." Another participant stated, "…if I don't understand instructions, or a concept of the course, I know I will be able to see professor and talk to him. That makes me feel more confident about online learning." Having access to a brick and mortar campus, to a professor that they can meet with, services and support staff, and peer support is important to Hispanic undergraduate students. Post traditional students describe their many obligations outside of school and the fact that situations often occur that may disjoint the learning process. Another participant stated, "Time is a big issue when you are working and studying…hybrid learning gives me the flexibility to complete courses while still having contact with my professor and peers on campus." Having

access to a classroom experience helps them stay focused, connect with peers, clarify doubts about course work, and promotes a sense of belonging. The flexibility of online learning allows students to have some contact with their professor but allows them the flexibility they need as commuter students who are employed and have families.

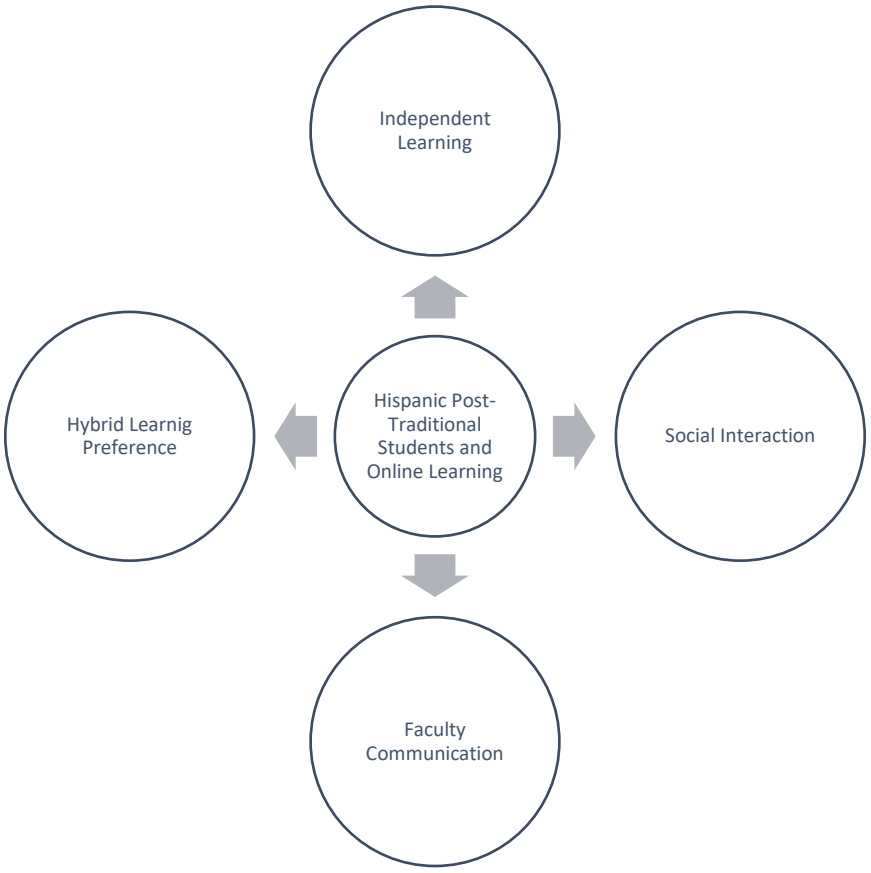

Figure 1. Emerging themes for Hispanic post-traditional college student online success factors.

Discussion and Conclusion

The primary objective of this research was to understand the perceptions of Hispanic post-traditional students about online learning and to understand the factors this group attributes to online learning success. Post-traditional students are often pressed for time and have obligations outside of their college course loads that require time and attention, which makes online learning a viable option to help them manage their time while fulfilling their degree aspirations. As institutions of higher education integrate online learning into their programmatic offerings to meet the needs of post-traditional students, it is imperative to understand their attitudes and perceptions of online learning to gain a better sense of how to best transition their students to this learning context. Just as institutions have developed targeted strategies for Hispanic college student success in a traditional campus environment, specific strategies should be developed to support Hispanic student success in an online environment. Understanding Hispanic student experiences and preferences in an online environment, how prepared or unprepared they are for the nuances and rigors of online learning, the types of interactions and instructional design methods that will best support online learning among this population, and how to keep students connected to the institution in a virtual environment assists in forming strategies to successfully serve this population.

This study's findings indicate that Hispanic post traditional students tend to use internet search engines to complete course assignments (x = 4.61) more than the university's virtual library (x

= 4.21). Prior studies found that college students often use the internet search engines with more frequency than their college's virtual library to identify sources and information to complete their coursework (Head & Eisenberg, 2010; Kolowich, 2011). Students may use internet search engines over the institutional virtual library because they are pressed for time, the ease of access of the internet, or because they are not knowledgeable about how to use library virtual databases. Yet this does not guarantee that they are using quality sources to complete their course assignments. Institutions may want to embed quick visual library tutorials and easy access resources within course shells to encourage students to use virtual libraries. Student respondents also report online learning confidence for fully online courses at $x = 4.25$ and a slightly higher average confidence in hybrid courses at $x = 4.36$. Prior research demonstrates that Hispanic students learn best when engaged and connected to peers and faculty; moreover, these connections motivate them to learn and complete courses (Barril, 2017). This type of engagement leans toward hybrid course design that provides both virtual and physical campus context for students, satisfying the preference to remain connected to peers and faculty. Yet, ethnic students will use online courses, whether hybrid or fully online, to attain their college degree goals, despite their personal learning preferences (Barril, 2017; Fontenot, Mathison, Carley, & Stuart, 2015; Watts, 2016). Interestingly, Hispanic post-traditional students reported neutrally ($x = 3.00$), about learning class material diminishing the need to meet with professors. This indicates an uncertainty about this and a leaning toward wanting to meet with or have access to professors, which was also confirmed in the qualitative component of this study. The neutrality of this response predicated upon "if they are learning

course content" in online courses, while reporting face-to-face meetings important to students' learning experiences at $x = 4.47$. This may indicate that if students believe they can learn the material without meeting with professor, they would do so, but need the meetings to clarify course content.

Findings also indicate that Hispanic post-traditional student online success is predicated upon independent learning, social interactions, and faculty communication (see Figure 1). Hispanic students understand that to succeed in online learning, a student must be self-motivated, an independent learner, and possess the ability to self-regulate; this finding is supported by past research (Kauffman, 2015). Social interactions and an online sense of community nurture student engagement and learning in a virtual environment; these findings are supported by past research (McInnerney & Roberts, 2004). Hispanic post-traditional students desire a common social space to exchange ideas, and explore and clarify course content; these interactions help to engage them in learning. Further, Hispanic students demonstrate a preference for hybrid course design because it allows them to remain linked to a physical campus, support services, develop relationships with peers and faculty; these are social interactions that support student academic success.

Hispanic serving institutions are the perfect laboratory to further research on Hispanic student online behaviors, preferences, and academic achievement. As noted in this article, as online learning becomes a permanent medium for education, studies on different ethnic groups, age groups, and educational programming deserve attention. Another recommendation for future

studies is to focus on the faculty at HSIs and their perceptions of online success for this population of students. Based upon the findings of this study, HSIs should focus on the following areas as they continue to develop their distance learning course offerings:

- Develop virtual engagement models to embed into online learning framework that promote enhanced social interactions for students who are enrolled in online courses. This may help reduce feelings of isolation for students.
- Include students in the online course design process, use feedback from student online experience surveys that are relevant to the online learning process. Students offer insights that course designers, faculty, and staff may not possess.
- Coach faculty on developing an enhanced communication method for online students that is timely, versatile, and meets their needs.
- Train faculty in online best practices for effective assignment feedback, virtual meetings, and supporting student learning in an online environment. Harnessing tools that increase engagement and effective teaching methods impact distance learning.
- Link help desks, support services, and on campus services to the online classroom so that students have options when seeking assistance.

Overall, HSIs should consider the type of support measures and engagement students will need when offering online courses. This study was exploratory and sought insight from participants on success factors linked to online learning.

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Article 4: Teaching Online at a South Bronx Community College.

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Hostos Community College

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Abstract

The focus of this article is to discuss how Hostos Community College of the City University of New York, located in an underserved community such as the South Bronx, is gaining mastery in education technology and online teaching. The article aims to provide an overview of how Hostos compares to the national trend of community colleges and how its students, who mostly start as remedial students, are dispelling held beliefs in higher education that community college students are not able to succeed in online courses. The article also gives insight to an area that is largely unexplored, which is faculty perceptions of online teaching and what higher education administrators can do to support faculty in online teaching.

Teaching Online at a South Bronx Community College.

Introduction

Since its establishment in 1968, Eugenio Maria de Hostos Community College (Hostos), has attended to the diverse needs of New York City's underserved population by offering full-time, part-time and evening college degree programs, as well as the provision of non-degree or certificate programs. As stated in its original proposal by the Board of Higher Education, Hostos, "will fulfill the functions of a comprehensive community college, serve the needs of a poverty area, and provide extensive and unique opportunities in education for health careers," (April, 1968). Since its inception, Hostos has been innovative in providing a broad range of health and social service academic programs that meet the growing demand for skilled health care workers in New York City. Currently, Hostos provides a wide array of online and hybrid courses in various disciplines, such as math, business, health science, humanities and social science, to support student retention, academic persistence and degree completion.

Hostos continues to fulfill its legacy of providing education as a tool for social mobility to diverse student populations that have been historically marginalized from higher education. This has enabled Hostos students who report being in the bottom 20 percent household income upon degree completion to achieve incomes in the top 20 percent (New York Times, 2017). These students represent low-income communities, communities of color, immigrants and the justice involved. As a community anchor, Hostos provides more than just academic programs. The college offers cultural events and countless community collaborative programs. Hostos is part of the City University of New York (CUNY), which is the largest public and urban university

system in the country. Moreover, within CUNY community colleges, Hostos reports having the highest "intergenerational social mobility rate" of students (New York Times, 2017). Therefore, as an academic institution educating underserved populations, Hostos is poised to promote education technology to address the digital gap that is pervasive in underserved communities.

Hostos Community College as a National Innovator

Among the ranks of community colleges, Hostos has become a national innovator using education technology to improve student learning. Such efforts have been acknowledged by the Center for Digital Education (CDE), which ranked Hostos as the top Digital Community College in 2016. In the most recent national survey conducted by the CDE, "Hostos placed second overall in the nation among mid-sized colleges," (Center for Digital Education, 2018). Notable to mention is Hostos' continuous top ten ranking eight times as a digital community college. Hostos continuously strives to use education technology to foster an engaging learning environment inside and outside the classroom that supports student retention, academic persistence and degree completion. Moreover, Hostos utilizes education technology to support faculty in adopting innovative teaching modalities that promote active learning and enhances pedagogy. Such strategies are crucial in establishing a strong academic foundation among community college students who mostly transfer to four-year colleges. Recent data shows community colleges having a pivotal role in shaping the academic and career trajectory of most students with a bachelor's degree. According to a report from the National Student Clearinghouse (NSC) Research Center, approximately half of all baccalaureate degree recipients

at a certain point were enrolled at a community college prior to transferring to a four-year college (NSC, 2017). Furthermore, the National Center for Public Policy and Higher Education estimates that forty percent of all enrollments in higher education in the United States are from community colleges (2011).

Community College Students

Community college students tend to be older than four-year college students, and often are enrolled part-time and employed full-time (Jaggars, 2014). The average age of a Hostos student is 25years (OIRSA, 2017). As of fall 2018, there were 7,237 students enrolled in the college. Although the majority (54.9%) of Hostos students are enrolled full-time, a substantial number (45.1%) are enrolled part-time (OIRSA, 2017). The Hostos Community College student demographic is mostly composed of Hispanics (59%), African Americans (22%) and females (66%) (OIRSA, 2017). The Hostos student demographic follows the national enrollment profile of community college students, where forty-four percent are Hispanic and thirty-five percent are Black undergraduate students (National Center for Education Statistics, 2018). Hostos, as a community college in the South Bronx, is a gateway to postsecondary education for students of low-socioeconomic status who are often first-generation college attendees. National data reports that forty-four percent of low-income students (those with family incomes of less than $25,000 per year) enroll in a community college after high school, compared to fifteen percent of high-income students (National Center for Public Policy and Higher Education, 2011). Comparably, thirty-eight percent of students whose parents did not graduate from college

report a community college as their first post-secondary enrollment institution, compared with twenty percent of students whose parents graduated from college (National Center for Public Policy and Higher Education, 2011).

Hostos' student population reflects the national student profile at community colleges, which experience high rates of poverty coupled with the need to take various remedial courses for several semesters before being able to take college courses. According to a study conducted by the Community College Research Center, among 250,000 students at 57 community colleges, it was reported that fifty-nine percent of new students were referred to remedial math and thirty-three percent were referred to remedial reading (Bailey, Jeong & Cho, 2010). Completion of remedial courses is usually correlated with a student's ability to stay in college and earn a bachelor's degree. Remediation assists students who are unprepared for college academic work by providing basic skills/knowledge. At Hostos, 27.9% of freshmen students are in a remedial math course and 22.7% are in an English remedial course. As freshmen students progress in their academic trajectory at Hostos, they enroll in online courses.

Two studies analyzing the performance of community college students in online courses demonstrated the students' decrease in academic performance in fully online courses (CCRC, 2013; Xu & Jaggars, 2014). However, it is noted that such poor academic performance in online courses was mainly noted among lower performing students who also experienced poor academic performance in face-to-face courses. Xu and Jaggars noted that students with a GPA less than 3.02 are two percent more likely to drop out of an in person course than a student

with a GPA greater than 3.02 (2014). By comparison, in online courses, students with poor academic performance are four percent more likely to drop out of the course (Xu & Jaggars, 2014). In contrast to national data that shows a decrease in the academic performance of community college students in online courses (CCRC, 2013; Xu & Jaggars, 2014), Hostos students tend to show similar academic performance in online and face-to-face courses. In a comparison of online courses with face-to-face courses of a health science course (nutrition) at Hostos, the grade distribution was similar between the online sections and face-to-face sections of the nutrition course (OIRSA, 2018). This nutrition course is perceived by students in the college to be difficult, as it requires prior knowledge of biology and basic chemistry. Hostos uses education technology as a social equalizer that enables students to be computer and software literate. The Hostos Office of Education Technology (Ed Tech) provides all enrolled students free access to various software (e.g. e-portfolios, MATLAB, SPSS), as well as tablets and computers, to practice using of the software. The Ed Tech office provides awards to students who demonstrate knowledge of the software and its educational applicability. This allows students to become involved with the Hostos Ed Tech office and learn about education technology in an engaging manner. Additionally, this prompts students to become better prepared for the technology driven work force, particularly in the health sector, where technology is central to health care.

The Increased Demand for Online Learning at Community Colleges

Nationwide there has been an increase in the enrollment of online courses at public

two-year institutions (Jaggars, 2014). Community colleges offer an open admissions policy, which attracts a diverse student population that is non-traditional in demographic make-up (Jaggars, 2014). Online courses offer community college students a flexible and convenient schedule that allows them to fulfill multiple responsibilities (i.e. work and family). In a survey conducted at Hostos Community College, approximately one-fourth of the student respondents reported taking online courses due to their flexibility and convenience, which allows them to fulfill their work or family commitments (Wolfe, DiSanto, Poma & Rodriguez, 2018). The literature notes that another factor influencing student enrollment in online courses is their perceived ease of learning the subject (Jaggars, 2014; XU & Jaggars, 2014). According to Jaggars, most students prefer online courses in subject areas they identify as easy and prefer to take face-to-face courses in subjects they consider to be challenging, such as math and science (2014). A third factor influencing student enrollment in online courses is the student's regard for the subject. Jaggars noted that students were averse to taking online courses in subjects they held in high regard, such as courses in their major, interesting subjects or courses perceived as difficult to learn (2014). In contrast, the Health Education Unit at Hostos Community College offers the highest amount of online courses (asynchronous and hybrid) to students majoring in community health. Students in this unit select online courses in their major regardless of their perceived ease or difficulty, due to the flexibility that online courses (hybrid and asynchronous) provide. Jaggars notes that a consistent level of interaction technology that facilitates student-instructor interactions is needed (2014). Xu and Jaggars note that such technology is particularly important for community college students, who tend

to perform poorly in online math courses (2014). At Hostos Community College, a lecture capture initiative is taking place with various course subjects, some of which are perceived to be difficult by students (e.g. health science, biology, business). The software Panopto is used to record lectures, in the form of videos, which allows students to review previous course materials to improve their understanding of course content.

Theoretical Frameworks to Create an Engaging Online Teaching Environment

1. Using Constructs from Pedagogy of the Oppressed to Teach Online at Hostos

Due to Hostos being a product of the American civil rights movement and the women's liberation movement, its foundation is composed of social activism, which facilitates the utilization of a social justice lens to teach curricula at the college. Through this lens, students are prompted to become social change agents. By Hostos utilizing Paulos Freire's pedagogy of the oppressed to integrate education technology in courses, students lose the fear of technology and discover an appreciation for newly acquired skills. One of the focus areas of pedagogy of the oppressed is to identify systems of oppression that perpetuate the subjugation of the people (Freire, 1970/2018). Following Freire's pedagogy of the oppressed, professors and students are prompted to see each other as co-facilitators of learning, where the instructor prompts students to see their personal plight as a source of knowledge, rather than a deficiency. This viewpoint enables students to increase their self-confidence and self-efficacy, prompting them to embrace academic challenges. By seeing instructors as a learning partner, a system of mentoring and support is created for students who often lack the knowledge of how

to build social capital. It is through these achievements that students and instructor begin to make groundbreaking discoveries in and outside the classroom. Students gain an appreciation for learning and self-discovery and connect thoughts with concrete actions.

Although technology offers innumerable possibilities, these benefits are not equally distributed in society. This creates a digital gap that exacerbates the problems of oppression and exploitation, as information is only being created and accessed by a partial number of people in society who are usually in positions of power. Through the utilization of constructs from the pedagogy of the oppressed, education technology is integrated into courses, allowing students broad accessibility to computer literacy and preparing them for the workforce. However, what is most significant, is that underserved students who become computer literate have the ability co-create society's norms for technology. Consequently, Hostos students who represent a historically marginalized and underserved population will embark in careers where they are underrepresented and create a paradigm shift that impels social change. The career fields of technology and health care are highly underrepresented by minorities. Hostos academic degree programs aim to increase the representation of highly skilled minorities in professional fields where they are underrepresented. One of the largest degree bearing programs at Hostos is the Allied Health Program, which provides associate degrees in nursing, dental hygiene and radiology technology.

2. Communal Constructivism for Online Teaching at Hostos

As Hostos continues to fulfill its mission of providing access to higher education to historically

marginalized populations, it also aims to empower this population. As a faculty teaching online courses in public health, teaching students to access current and accurate health information is crucial. By utilizing communal constructivism as an approach, where learning is seen as a social and collaborative effort that is facilitated by the instructor, students are actively engaged in the learning process (Tangney, FitzGibbon, Savage, Mehan & Holmes, 2001). Communal constructivism as a learning theory asserts that students can construct their own knowledge (constructivism) as an outcome of interacting with their environment (social constructivism) and therefore become co-creators of knowledge for their learning community (Tangney et al., 2001). Leask and Younie note that the theory of social constructivism accounts for the different forms of community building, whether virtual or physical, and the various forms that knowledge are created, shared and recreated by both student and instructor (2001). I therefore utilized components of this theory to enlist the participation of students in my online health courses to create and share knowledge in a virtual classroom that builds a virtual community of learners.

Continuous discoveries in the health field lead to the constant updating of health information. Learning in the information age requires interaction with computers, which allows students to interface with various sources of information. Students must develop the skill of discernment, where they can distinguish reliable health information and sources from unreliable ones. Students in my online health courses are required to search for current health information and document their search methodology. For example, they must annotate the search engines utilized and the websites visited. They must then provide a presentation of their

findings to the virtual class. This process is iterative and enables students to build confidence in developing a sound methodology for inquiry. Using a communal constructivist approach requires courses to be dynamic and adaptive to the students' need. Since peer support and group learning are promoted in this approach, students are provided with continual learning support from the instructor and their peers. Students also see themselves as co-creators of knowledge rather than just consumers of information (Tangney et al., 2001). The students at Hostos represent marginalized groups that society has ignored and rendered as unimportant, but, through communal constructivism, they become important learners who create knowledge. Moreover, their work and contributions in the classroom are acknowledged.

As a faculty member teaching public health courses at Hostos, the utilization of Panopto has enabled students to become co-creators of knowledge. Although Panopto is mainly used as lecture capture software, I provide students in my asynchronous nutrition courses the opportunity to make presentations on topics that they want to further explore. During this process, students are required to learn the usage of the Panopto software. This provides them with an additional skill that they can utilize beyond the course. Furthermore, peer learning takes place as each student creates and shares a video presentation virtually with the class. After the presentation, over a period of a week, students are required to engage in virtual class discussions that focus on the content of the presentation. In these virtual class discussions, students discuss and deconstruct concepts. My role in these virtual discussions is that of a facilitator of learning, where I provide feedback and guidance on the content and allow the students to make real world connections to the course content. This allows the students to gain

a more in depth and broader understanding of the root causes of obesity in the United States. Moreover, students develop a robust understanding of the diseases that are connected to dietary behavior. Such information is often difficult to grasp in an online teaching environment where there is limited exposure to real world experiences. However, when a virtual space for student dialogue is opened, the learning possibilities are endless. Students engage in intrinsic learning, which allows the course content to resonate with their life experiences. Noteworthy to mention is that prompting adult learner's to utilize prior life experiences when learning new content is supported by the experiential learning theory (ELT), which asserts that holistic learning takes place when individuals interact with their environment (Kolb & Kolb, 2009). Experiential learning theory enables students to develop confidence and autonomy and the ability to reflect and learn. By providing my students with a virtual and interactive space to dialogue and explore concepts that are abstract or new, students are able to actively engage in the learning process and see themselves as contributors to knowledge.

Diffusion of Innovation for Online Teaching at Hostos

History has taught us that the adoption of innovations is staggered among populations. The Diffusion of Innovation model is utilized to comprehend the necessary methodology to accomplish a broader dissemination and diffusion of innovations. Diffusion and dissemination are two distinct concepts. According to Rogers, diffusion is the process by which an innovation is conveyed through certain outlets over time among members of a social system (2003). In contrast, dissemination is a deliberate and systematic effort to enable the wide distribution and

availability of an innovation (i.e. online courses) to an intended audience or members of a social system (Oldenburg & Glanz, 2008). In examining the diffusion and dissemination of online courses, it is important to understand the faculty and student perceptions. Studies analyzing faculty perceptions of online courses report that computer self-efficacy, which is the self-confidence that individuals have in using computers and the perceived ease of use of education technology, impact faculty involvement and satisfaction with teaching online (Wingo, Ivankova & Moss, 2017). By comparison, studies analyzing students' perceptions of online courses demonstrate that the reasons why students enroll in online courses are flexibility, convenience and perceived ease of learning the subject (Jaggars, 2014; Wolfe et.al, 2018). Noteworthy to mention is that the majority of student respondents in a survey at Hostos Community College reported online courses to be equally as challenging as face-to-face courses (Wolfe et. al, 2018). This finding challenges data from other studies that report students' perceptions of online courses as easier than face-to-face (Jaggars, 2014; Kauffman, 2015). However, it important to acknowledge that the Hostos student population is heavily composed of students who initially enroll with remedial needs (freshmen math remedial course 52% and English remedial course 28.1%) and English language learners (16%) and this may influence their perception of online courses (OIRSA, 2017).

Allen and Seaman observe that, in the United States, there is an increased demand for faculty to teach online courses (2015). A key success of online courses is their ability to provide millions of students with access to higher education, which they might be otherwise denied because of time or geographic challenges (Allen & Seaman, 2015). However, it is noted that one

of the persistent failures of online education has been its inability to win the full support of faculty (Allen & Seaman, 2015). Over the past decade, faculty have shown a paltry level of acceptance for online education as a valuable and legitimate mode of instruction (Allen & Seaman, 2015). According to Allen & Seaman, only 28% of chief academic officers reported that their faculty accepted the value and legitimacy of online education (2015). Based on the model of diffusion of innovation, the more presence online teaching has at an institution, the more likely faculty will accept it.

At Hostos, the Office of Educational Technology offers faculty the opportunity for professional development by participating in the online course development initiative. This initiative is held in high regard by the Hostos college administrators and viewed by the college committees granting faculty tenure and promotion as part of faculty improving their pedagogy and professional development. Studies have shown that more faculty are motivated to teach online when they see the achievement of teaching online recognized and rewarded by their academic institution (Bacow et al., 2012; Gautreau, 2011). Furthermore, student surveys at Hostos reinforce the importance that online courses have in supporting the strategic plan of the college. The Hostos Community College Strategic Plan focuses on increasing student academic persistence and the reduced time to degree completion. Due to their flexible schedule and accessibility, online courses at Hostos have the potential of supporting students in completing their degree in a shorter time. Hostos data showing the three-year graduation rate for first-time, full-time freshman shows an increase in graduation rates from 12.6% in academic year 2013 - 2014 to 22.1% in academic year 2015 -2016 (OIRSA, 2018b). During this period there

was an expansion of the online course development initiative which trains and supports faculty in the development of online courses. Although there is no evidence of a causal relationship between the increase of graduation rates and the expansion of online courses at Hostos, online courses have allowed students more options in completing their degrees. As such, online teaching can become an integral component of the college strategic plan. These factors may further promote online teaching among Hostos faculty and administrators as they realize the potential value of online teaching.

Academic leadership at Hostos has started to recognize the time consuming effort that it takes for faculty to teach an online course as oppose to a face-to-face course. This recognition has translated into the Office of Educational Technology offering continued technical support through workshops, one-on-one trainings and continuously enhancing the software used for teaching as a way to improve the online teaching experience among faculty. A recent satisfaction survey of the Hostos Ed Tech Office demonstrated that, among 22 rating faculty, there was a high level of satisfaction (97.29%) with the professional development workshops offered by Ed Tech, and, among 31 faculty ratings, there was also a high level (99.40%) of satisfaction with one-on-one support (Ed Tech Annual Report, 2018). Due to the faculty-teaching load at Hostos being 24 credit hours per academic year, which translates to faculty teaching 4 classes each semester, online teaching has become a life line for most tenure track faculty who must meet the rigorous demands of teaching, producing scholarship, and providing service to the institution. Online courses offer faculty at community colleges the latitude to engage in scholarly activities while also fulfilling their teaching responsibilities. Whereas the

majority of students express interest in online courses due to their flexible schedule and accessibility, faculty express interest in teaching online courses due to their flexible schedule, perceived usefulness (PU), meaning the level to which one believes a technology will enhance his or her job performance, and perceived ease of use (PEU), which is the amount of effort an individual deems he or she will need to spend to master that technology (Wingo, Ivankova & Moss, 2017). Allen and Seaman note that a growing number of faculty are realizing the benefits that online teaching offers, such as a flexible teaching schedule, as well as opportunities for personal and professional development (2015).

Challenges and strengths in Teaching Online

There is a substantial amount of research focusing on quality in college-level teaching. Such research asserts that students deem teachers to be effective when they are responsive, passionate, student-centered, professional, and content experts (Onwuegbuzie, Witcher, Collins, Filer, Wiedmaier, & Moore, 2007). Kester, Kirschner, & Corbalan assert that interaction is a key element in the learning environment (2006). Chen & Shaw also note that for students to have mastery over new and difficult course content, the information must be clearly presented and instructor feedback should be timely (2006). Chickering and Gamson offer over fifty years of research on college pedagogy, and through their research, they recognized seven dimensions of practice that are considered fundamental elements of quality college instruction (1987). These seven dimensions entail faculty who promote: active learning, student-faculty interactions; collaborations among students; timely feedback to students; emphasizes time on

task; clearly convey high expectations; and embrace diverse learning styles and talents (1987). These dimensions are influenced by the skills of the instructor as well as the modality through which the instruction is delivered (e.g. online or face-to-face).

Opponents of online teaching raise concerns about the quality of student and instructor interactions, course design and the ability of online courses to address the dimensions of instructional effectiveness offered by Chickering and Gamson. Omrod notes that students who are learning new and complex materials usually are not organized in their cognitive process and therefore are unable to prioritize and focus on crucial information in order to gain mastery (2004). Oh and Jonassen affirm that self-regulation of learning is difficult for most students and that students learning in online courses have challenges with understanding information and its application (2007). Providing information to students or ensuring that students have access to information resources is not sufficient for the learning process. These strategies do not correlate with the intricacies of learning that require full understanding of complex course content and its application. Currently, there is limited research discussing the capacities of online instruction in attending to the dimensions of effective college learning and the systems utilized to teach online.

Proponents for online teaching praise the limitless potential that online media offers in the learning process. It is noted that online media offers boundless possibilities in enhancing interaction and student engagement. When deliberately designed, threaded discussions, e-mail, short video clips and two-way audio offer innumerable opportunities to enrich the

learning environment of students. At Hostos, faculty are partaking in an initiative to utilize Panopto, a lecture capture software that allows faculty to record their lectures as well as other teaching conten,t which students can access via the college learning management system (Blackboard). In addition to faculty creating content in Panopto, students are granted access by the course instructor to upload recordings of presentation projects, which are shared with the entire class via Blackboard. At Hostos, over the span of two consecutive semesters, 265 students enrolled in a course participating in the Panopto initiative were surveyed. Of these students, 82% reported that the Panopto videos helped improved their understanding of the course materials and 71% reported the top reason for using Panopto was for exam preparation (Ed Tech Annual Report, 2018). In this manner students, contribute to course content and are actively engaged in their learning as they exchange information with their peers and the instructor. Failing grade analysis data for fall of 2017 for courses using Panopto and non-Panopto sections demonstrated a lower failing percentage of students in two courses with Panopto. Failure percentage for a 200 level business course utilizing Panopto was 0%, whereas the non-Panopto section reported 5.3% (Ed Tech Annual Report, 2018). Failure percentage of an education course was 10% for the Panopto section, in comparison to 21.3% for the non-Panopto section (Ed Tech Annual Report, 2018). Noteworthy to mention is that the passing percentage for Panopto and non-Panopto sections of the 200 level business course was similar. The passing percentage for the Panopto section of the 200 level business course was 91.7%, and 94.7% for the non-Panopto section (Ed Tech Annual Report, 2018). However, for the education course, the passing percentage for the Panopto section was 90.0%, and 78.7% for the

non-Panopto section. These differences may partly be due to the aforementioned seven teaching dimensions that Chickering and Gamson offer for instructional effectiveness, where teaching is influenced by the skills of the instructor as well as the modality through which the instruction is delivered (e.g. online or face-to-face).

Hostos faculty feedback has been positive and demonstrates their perceived ease of use of the Panopto technology. One Hostos faculty responded by stating, “Panopto still remains relatively easy” (Ed Tech Annual Report, 2018). As part of expanding the diffusion of Panopto on campus, the Office of Educational Technology at Hostos has fully integrated Panopto into Blackboard, the learning management system of the college. This strategy allows any faculty interested in using Panopto easy access. It is fundamentally clear that until educators can provide a fully interactive online learning environment that attends to the various learning dimensions noted by Chickering and Gamson, online teaching will continually have to explore interactive modalities that intrinsically motivate students and provide opportunities for them to apply new information.

Supporting Education Technology and Online Teaching in a Community College Hostos’ Office of Educational Technology offers faculty and student support in the form of trainings to utilize educational technology software such as Blackboard and Panopto, as well as tech support for faculty and students involved in asynchronous and hybrid courses. In 2015, the Office of Educational Technology developed an award winning online readiness course entitled “Are you Ready.” This online course offers students the opportunity to assess their readiness to enroll in

online courses and to learn the fundamental skills required to be an online learner. Enrollment in this online readiness course is voluntary, yet strongly recommended by faculty, particularly by faculty who teach asynchronous and hybrid courses.

Through a committee of experts on campus that is composed of faculty and staff who are innovators and experienced online course developers, the Office of Educational Technology provides faculty with trainings and mentoring in the development of asynchronous and hybrid courses. This ensures the integrity and uniformity of the design of online courses. The guidelines set for the design of online courses are based on national standards and faculty receive training and mentoring over the period of one full semester before becoming certified to teach an online course. Once the course is designed on Blackboard, a panel of faculty experts who have extensive experience teaching and designing online courses evaluate the proposed online course and provide constructive and meaningful feedback to the course designer. Such feedback adheres to the established principles of online course design set in the Quality Matters Rubric Standards and CSU Chico Rubrics for Online Instruction. Throughout the mentoring and training process of online course design, it is emphasized to faculty that online courses are expected to be equivalent to a regular face-to-face course and should cover all the learning goals and objectives that a regular course does in a semester based on the college curriculum. The Hostos online course development guidelines highlight that what distinguishes an online course from a face-to-face course is the "mode of delivery, not the content of the class" (Ed Tech, 2015). Moreover, the Office of Educational Technology at Hostos holds an open door policy for faculty and students, which proves to be beneficial for online students and

faculty teaching online courses. This open door policy provides faculty and students continued support throughout the teaching and learning process of an online course. It is noted that when institutions provide continued mentoring, training, support, and recognition for teaching online, faculty are more receptive of online teaching. By academic institutions understanding faculty and student perceptions of online education, informed decisions about faculty trainings, student support and educational technology selection are successfully made. Other important factors that institutions must consider to strengthen their online teaching programs include integrating online teaching as part of the college strategic plan and faculty involvement in the planning and implementation process of online teaching.

The mission of Hostos Community College is to educate and promote social mobility among diverse student populations that have been historically marginalized from higher education. The use of education technology is an example of the college fulfilling its mission of utilizing education as a vehicle for social mobility and addressing longstanding injustices by narrowing the digital divide that is pervasive in underserved populations in the South Bronx and New York City.

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Article 4: The Practice of Peer Observation.

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Abstract

This paper discusses existing literature on peer observation. It also focuses on work done by an investigative, information-sharing committee at an urban community college in the South Bronx that was created to communicate best practices for conducting peer observations. The Peer Observation Improvement Network for Teaching (POINT) committee views peer observations as faculty-development opportunities that can lead to improved teaching. Using pre- and post-observation conversations to share pedagogy and resources, writing recommendations for growth, and conducting faculty observations in an online environment are examples of topics addressed by POINT.

Key words: collegial conversations, faculty development, online learning, peer observation, professional growth.

The Practice of Peer Observation.

The practice of peer faculty observations is intended specifically to improve teaching. Keig and Waggoner (1994) emphasized that the practice of faculty being assessed by a peer should be a "component of formative evaluation of teaching" based on the shared experiences, bodies of knowledge, and professional practices that are specific to their academic departments.

Additionally, Adams' (2009) support of inquiry-based teaching development can be applied to the use of peer observation as a vehicle for improving teaching, which creates an atmosphere conducive to individualized professional development for faculty based on their personal teaching areas and career trajectories.

Adams (2009, p. 17) included the following points illustrating specific assumptions of inquiry-based faculty development:

- A process of developing increasing sophistication of teaching process through sensing, examining, collecting evidence, and taking action.
- Directions of exploration and determinants of success reside predominantly with the participant.
- Explicit attention is paid to collaboration, interpersonal interactions, trust, and community building.
- Collaborative action research, generative goal setting based on continuing iterations of involvement and exploration of teaching practices.

- Peer dialogue, mentorships, and partnerships that are reciprocally exploratory.

Each institution defines the professional responsibilities for faculty based on its unique requirements. Faculty at institutions of higher education offering baccalaureate, graduate, and doctoral degrees typically are expected to teach, conduct research, publish, present, and write successful grants; community-college faculty may see less emphasis on scholarly work. The common denominator is teaching. The practice of peer observations is a method of assessing teaching skills. A committee was formed at one community college in the South Bronx to serve as an investigative, information-sharing body that would communicate best practices for conducting peer observations.

POINT

The Peer Observation Improvement Network for Teaching (POINT) was convened in 2011 under the Office of Academic Affairs at Hostos Community College of The City University of New York (CUNY), to research and communicate the intricacies involved in peer observation. The committee is for the most part advisory but did revise the peer-observation report based on its research, which included focus groups and was approved by the Hostos Senate. According to the Provost and Vice President for Academic Affairs, "POINT was developed to support the peer observation process by providing support to the faculty who are conducting the observation. The intention was to make the process more meaningful by providing constructive feedback and collegial guidance to the faculty being observed" (DiSanto, personal communication, November 12, 2015).

The POINT Committee consists of six members comprised of faculty and staff; it meets twice monthly. POINT is housed under the advisory council for the college's Center for Teaching and Learning (CTL) and provides seminars on peer observation for faculty as part of CTL's professional-development program. CTL's mission states:

> This cross-divisional faculty-driven committee . . . concentrates on meeting the professional needs of faculty from across the disciplines. A priority of this committee is to encourage faculty to rethink and put into practice innovative pedagogical methods that answer the basic and advanced needs of students to increase overall retention and graduation rates. The Council models innovation through unconventional programming intended to inspire faculty to consistently recreate curriculum to enhance the learning environment throughout the course of the student's academic careers. The Council exists to refresh and invigorate all faculty including adjuncts, and push them to excel professionally" (HCC/OAA, 2018a).

Workshops provided by the POINT committee recently addressed conducting observations in online sections, writing intentional and effective recommendations, and holding collegial pre- and post-observation conversations.

Defining Peer Observation

A peer observation is conducted by a colleague who attends another instructor's class for one full period, at a pre-arranged date and time, in order to observe what takes place during that time. What is observed during the time spent in the class is used to write responses to various points addressed in a post-observation report and to provide recommendations for professional growth. According to Chism (1999, 2007), "peer review of teaching is informed colleague judgment about faculty teaching for either fostering improvement or making personnel decisions." As a committee that falls under the auspices of this college's CTL, POINT's on-going charge has been to facilitate the use of peer observations as professional-development opportunities.

To start, the two colleagues involved in the observation determine a mutually convenient date and time for the observation to take place. This is indicated on the notice of observation form, which must be received by the observee at least 24 hours before the observation takes place. It is recommended that a conversation should occur so that the topic and intent of the lesson can be shared as well as anything the observee would like to bring to the observer's attention, such as a new teaching strategy or activity. This discussion offers a point of focus that should lead to opportunities for growth.

The observer must arrive at the classroom before the start of class and remain until the end of the period. Notes should be taken during the class. The observer should not participate in activities. Although the observer must be aware of all aspects of the lesson, particular focus

should be given to points raised during the pre-observation conversation, if taken place. A post-observation form must be completed and shared with the observee no later than two weeks from the observation.

Professional Development through Conversation

To foster a climate of dialogue and collegiality among faculty, POINT members strongly consider communication between the two faculty members involved in the observation to be of paramount importance. The POINT committee recommends that the two faculty members meet prior to the observation to discuss the student-learning objective(s) of the lesson and any particular aspect of the lesson that the observee wants the observer to notice. Research illustrates "the importance of the relationship between observer and teacher, with the relationship needing to be based on confidentiality and the creation of a non-judgmental environment" (Donnelly, 2007). Interactions between the observer and observee that are focused, positive and respectful, exhibiting a mutual commitment to collaboration, create sincere opportunities for growth. In fact, collegial conversations focused on improvement can support "fruitful discussions in which we learn from each other about ways to transform the climate in our classes" (Ammons & Lane, 2012).

Additionally, there is an overarching theme at Hostos of conversation as professional development, which has been supported by the CTL. The Hostos Teaching Institute and Mindful Conversations are two of the workshop series offered. Topics address "teaching pedagogy; classroom experiences and student outcomes; and scholarship of teaching and disciplinary

research" (HCC/OAA, 2018b). Presenters cross rank, tenure, and all academic content areas. These workshops are designed to help faculty further develop their teaching strategies; each is inclusive of all faculty regardless of rank or academic specialty. This benefits those involved in peer observation because it can serve to minimize any bias or trepidation based on friendship, as peer observation and the desire to continue to grow as a teacher are inherent in the campus culture (Muchinsky, 1995).

The concept of peer observations as professional-development opportunities is introduced to new faculty during a year-long series of workshops. In the initial session, POINT members introduce their colleagues to the different components of the peer-observation process from completing or receiving the notice that the observation will take place on a specified date and time, through the prompts addressed in the report. Special attention is paid to participating in a pre- and post-observation conversation. Although the observer will write a recommendation for the observee, both peers have an opportunity to learn about new instructional techniques and resources during their discussions.

During the second workshop, time is spent discussing the new faculty's first experiences being observed and observing a colleague. Role play and videotape is used to practice completing an observation form. It is here where faculty, especially those in their first year at the college, are counseled on how to conduct an observation in an online environment and write effective recommendations. They also are informed of the role peer observations have in annual evaluations, reappointment, tenure and promotion.

Besides providing training for new faculty on how to conduct peer observations, POINT also works with colleagues who develop asynchronous and/or hybrid courses for the first time. There are specific and unique guidelines that must be considered when observing someone in an online-learning environment.

Conducting Peer Observations in Online Courses

What happens when the observation takes place in a virtual environment? With limited research available on conducting observations in online areas, the POINT committee raised a series of questions:

Asynchronous

1. When observing a faculty member teaching an asynchronous course, what is the observer to report in the observation form?
2. Since there is so much to view in the asynchronous course, where does the observer begin?
3. What should be the focus of the observation report in an asynchronous course?

Hybrid or Blended

1. If a faculty member teaches a hybrid course, should the observer concentrate on the online portion?
2. Will the observer report on the face-to-face classroom and skip the online portion?

3. How different is the observation for a face-to-face class than for an online course? This became the epicenter of future discussions.

Conducting an observation online. The POINT committee was faced with the challenge of looking at observations and online teaching. Colleges and universities may have contractual obligations that mandate a specific schedule of observations. At Hostos, an urban community college within one of the largest public universities in the United States, non-tenured faculty are required to be observed once a semester during a single class session. Tenured faculty may be observed. The guidelines implemented at this institution for observations conducted in asynchronous courses address the uniqueness of having a classroom environment that only exists in cyberspace without any scheduled face-to-face contact (HCC/OAA, 2019a); an asynchronous class-session is defined by learning outcome(s) contained within one single unit addressed rather than a traditional bell schedule.

The hybrid or blended course posed the greater challenge because an observer might be inclined to instinctively opt for the face-to-face session. Another observer may mistakenly choose to observe the in-person period as well as the online session.

A series of guidelines for observing the hybrid course (HCC/OAA, 2019b) was created based on those for the asynchronous courses. These guidelines include having the learning objective shared by the online and in-person components clearly stated and the scope of the learning unit to be observed be specified for the observer. The guidelines for the hybrid course state that only faculty with special training or experience with online teaching may conduct

observations of hybrid courses. The committee members felt that only those trained could aptly observe another faculty teaching a hybrid course, which is also emphasized in the guidelines.

It was determined that the observation time should span a complete unit of learning and approximate the time allocated for a standard classroom observation. A learning unit was defined as a distinct group of learning activities and course content that includes in-class and online activities centered on shared objectives. Faculty skilled in teaching a hybrid course have the ability and knowledge to recognize the scope of a hybrid unit, and, therefore, would be able to conduct an observation that would be equivalent to an in-person class conducted in a physical classroom.

Discussing the learning unit. According to the guidelines for the observation of asynchronous or hybrid courses, observers require a clear understanding of the course design and learning unit structure. The committee stresses that the observer discusses the context under which the learning unit was designed during both the pre- and post-observation conversations. The observee should share pertinent information about the course design, structure of the learning unit (location; scope and sequence; and discussion, assignment, and test components), use of external resources, and technologies used (e.g. discussion boards, blogs, wikis, lecture captures, etc.).

Additionally, the observer should be familiar with the development guidelines for asynchronous and hybrid courses. These guidelines were created to establish a baseline and to

standardize design and development of these courses; therefore, it is very important that the observer uses them as parameters for what to expect in the learning unit of the online course being observed (HCC Online Learning, 2019).

Writing an Effective Recommendation

Throughout the POINT committee's numerous presentations, one thing is consistent: Platitudes such as "Keep up the good work!" and "Great job!" are to be avoided at all times. The purpose of a peer observation is to generate a narrative of what that instructor brings to the classroom; provide support to the observee as they move forward in their professional progress, and address areas that need improvement. In an online course, the report must be worded so as to give a clear understanding of pedagogy, student engagement, and faculty presence in the online environment, so that an administrator who may not have experience teaching in hybrid or asynchronous courses can consider the information in the observation report.

The observer's recommendation must be based on the performance that was directly witnessed and must not include information learned at any other time. The colleague's reputation, contributions to the college, and personality cannot be considered during a peer observation. Differences between the teaching style of the observer and the observee should only be discussed in the recommendations if there is a strong reason for doing so that has been discussed under the prompts on the observation form.

The committee strongly urges that these suggestions for growth and/or change be the

final item the observer addresses and should include supporting evidence from the narrative. For example, if the answers to the questions or prompts are all highly positive, the recommendations should also be positive. If the observer indicates that improvement is required, then the recommendations should include specific strategies for growth. This feedback should be purposeful, descriptive, and context-specific. If the lesson observed was superb, consider recommending that the person share their instructional method, content expertise, or classroom-management strategies with peers through an article, presentation, or peer mentoring. A recommendation can also be an alternative to what was used in the lesson. At the heart of a peer observation is mutual professional development, where both colleagues can share ideas, practices, and materials. Finally, the feedback meeting should be held as soon after the session as possible, while the nuances of the experience are still fresh in both participants' minds (Martin & Double, 1998).

Why is the recommendation important? Pedagogy is constantly evolving and changing. Constructive feedback can offer new ideas and strategies for effective teaching (O'Keefe, Lecouteur, Miller, & McGowan, 2009). Recommendations can draw attention to whether students react favorably to the strategies and resources used to meet the learning objectives. A recommendation is written to support the growth of a colleague as a teacher.

These recommendations, whether written in support of continued professional growth or as a plan for improvement, must be rooted in the shared goal of improving teaching effectiveness. Chism (2004) described this cultural attitude toward teaching as:

> . . . one in which it is desirable to seek to understand practice; admirable to be thorough and intentional in making judgments about teaching; and possible to learn from others about the behaviors, assumptions, and attitudes that have been found to be most productive in facilitating student learning. Such dialogue bridges the gap between definitional despair and certainty and turns it into an advantage (p. 20).

The recommendations offered in the observation are often considered during an annual evaluation; however, the observer has an obligation to be objective when conducting the observation and honest when writing the report. The recommendation must be rooted in what was witnessed during the observation and should offer specific suggestions for improvement and/or growth. If similar remarks are recorded during observations done in different semesters and the same recommendations are made, questions may arise as to whether or not the faculty member seriously considered them. Also, when writing statements for the annual portfolio, faculty should address the recommendations in their narratives, particularly those that discuss teaching philosophy and future plans for growth.

Assessing the Process

Although peer observations are a contractual requirement at this college and the process of conducting them is transparent and well communicated, it is important to take the time to assess the criteria and documents used (Chism, 1999, 2007). This becomes apparent

when faculty have difficulty interpreting prompts within online learning-environments, such as asynchronous or hybrid course sections.

As a direct result of discussions with colleagues at POINT events, the committee formed focus groups to investigate whether changes to the peer-observation form were warranted, specifically concerning the relevance of the prompts and the usability of the document. Based on research and input from their colleagues, a revised form was created, which has been approved through governance. This updated version includes specific prompts for online environments.

Conclusion

The objective of peer observations is to foster reflection on the primary purpose for the existence of any college--teaching and learning. When observations are conducted according to established and communicated guidelines in a nurturing environment they can "directly benefit the individual teacher, can enhance collegiality and can have a significant effect on changing departmental culture" (Martin & Double, 1998). Feedback is offered through peer observations, student evaluations, and grade reports; however, peer observation is the only one of those three that offers witnessed information that supports a recommendation for growth. Also, when both parties--the observed colleague and the observer--use pre- and post-observation conversations to share perspectives on best practices, trends, and issues, the peer-observation process becomes an opportunity for personal reflection and intentional professional development, all of which contribute to enhance student success.

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Article 5: Tendencias en la Evaluación de Cursos en Línea.

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Tendencias en la Evaluación de Cursos en Línea.

Resumen

El propósito del trabajo es identificar las tendencias en la evaluación de cursos en línea. Para ello se realizó una revisión de literatura y luego se clasificaron los estudios por el propósito en la evaluación. Además, se identificaron los modelos y enfoques de evaluación usados.

Se concluye que en la evaluación de cursos en línea, existe una clara tendencia a evaluar la efectividad y calidad de los cursos en línea, así como, al uso de cuestionarios. La evaluación de un curso en línea debe ser sistemática, no limitarse al estudio del aprovechamiento y de la satisfacción de los estudiantes.

Introducción

Los últimos reportes sobre aprendizaje en línea de Online Learning Consortium, muestran que, en los Estados Unidos de América, el número de instituciones de educación superior que han adoptado el aprendizaje en línea ha crecido considerablemente. Para el año 2013, aproximadamente el 60% de estas instituciones ofrecían cursos en línea como parte de su oferta académica (Allen y Seaman, 2014). En el año 2015, hubo 77%, aproximadamente (Allen y Seaman, 2016).

Este escenario muestra como el aprendizaje en línea se ha incorporado en la comunidad educativa. A tal punto que, la cantidad de estudiantes de educación superior, que al menos se han matriculado en un curso en línea ha superado los 7.1 millones en los Estados Unidos de

América (Allen y Seaman, 2014). Además, la proporción de los líderes académicos que declararon que el aprendizaje en línea es una estrategia fundamental a largo plazo de su institución, ha crecido del 48.8% en el año 2002 al 70.8% en el año 2015 (Allen y Seaman, 2015).

Con el crecimiento en la oferta de cursos en línea, un aspecto relevante en el desarrollo de esta modalidad de enseñanza es garantizar su calidad. Para ello es necesario identificar los elementos del curso que deben ser mejorados o modificados. Mediante la evaluación se puede recopilar información, para compararlo con ciertos criterios establecidos, de tal manera que nos ayude a emitir un juicio sobre su calidad (Medina Díaz y Verdejo Carrión, 2006).

El propósito de este trabajo es identificar las tendencias en la evaluación de cursos en línea. Se realizó una revisión de literatura, luego se clasificaron los estudios según el propósito de la evaluación. Además, se identificaron los modelos o enfoques de evaluación utilizados.

Propósitos en la evaluación de cursos en línea

De los estudios revisados, se observa que la mayor cantidad, se concentran en la evaluación de la efectividad y calidad de los cursos o programas en línea. Entre los estudios que evalúan la efectividad, se tiene, los que se basan en los objetivos para evaluar la efectividad del curso en línea (Feinstein, 2004; Fetaji y Fetaji, 2009; Galloway, 2005; Hallett y Essex, 2002), los que se basan en la retención y tasa de graduación para evaluar la efectividad de un programa en línea (Chapman, 2006; Tokmak, Baturay y Fadde, 2013) y los que evalúan la efectividad de los recursos en línea (Hassan, Hassan, Omar, Zakaria y Nor, 2012).

Respecto a la calidad, se evalúa la calidad de los cursos en línea (Sandia, Montilva y Barrios, 2005; Santoveña Casal, 2010; Tello Díaz-Maroto, 2010; Urbina Nájera, Pérez Camacho y Rodríguez Huesca, 2013) y la calidad de la experiencia de los estudiantes de cursos en línea (Ginns y Ellis, 2009). Además, se evalúa la satisfacción del aprendizaje de los estudiantes a través de un curso en línea (Ozkan y Koseler, 2009), la disponibilidad de los instructores durante el curso en línea (Schulte, 2009), la implementación y progreso del curso en línea (Mashhour y Saleh, 2010), las estrategias de aprendizaje de los estudiantes (Tsai, 2009), el curso en línea desde la perspectiva del estudiante (Rodríguez Hernández, Flores Guerrero y López de la Madrid, 2010), el enfoque constructivista en las prácticas de educación en línea (Gazi, 2011) y la implementación y resultados del curso en línea (Rodríguez y Miguel, 2005).

Para organizar la información, en la Tabla 1 se agrupan los estudios revisados, según el propósito de la evaluación. De esta manera, el lector podrá identificar con facilidad el propósito de cada evaluación, el modelo o enfoque utilizado y un resumen de cada estudio revisado.

Tabla 1
Estudios sobre evaluación de cursos en línea

Propósito	Estudios	Modelo o enfoque	Resumen
Evaluar la efectividad			
• de cursos en línea, basado en los objetivos	Fetaji y Fetaji (2009)	Modelo Multidimensional para el Planeamiento y Evaluación de cursos en línea	Construyen un modelo multidimensional basado en 18 indicadores del aprendizaje en línea, que permite la planificación, comparación y evaluación de diferentes proyectos de cursos en línea.
	Galloway (2005)	Modelo de Kirkpatrick y *Return On Investment* (ROI)	Muestra que el modelo más idóneo para la evaluación del aprendizaje basado en la tecnología es uno hibrido, formado de los modelos de Kirkpatrick y ROI, porque incluye como la persona aplica el conocimiento desarrollado, y especifica como es el retorno del dinero para la institución que invirtió en formación.
	Hallett y Essex (2002)	Modelo de Kirkpatrick	A base de los niveles del modelo de Kirkpatrick, construyen un método para la evaluación de cursos y programas en línea.
	Feinstein (2004)	Cuestionario	Construye un cuestionario dividido en seis grupos de cinco preguntas, cada grupo corresponde a la clasificación de la taxonomía de Bloom.
• del programa en línea basado en la	Chapman (2006)	Modelo CIPP	

Propósito	Estudios	Modelo o enfoque	Resumen
retención y tasa de graduación	Tokmak, Baturay y Fadde (2013)	Modelo CIPP	Desarrolla un plan de evaluación para un programa de postgrado, completamente en línea, usando el modelo CIPP. Identifica 18 elementos para la evaluación, distribuidos en la evaluación de contexto, insumo, proceso, producto, efectividad, sostenibilidad y transportabilidad.
• de los recursos en línea	Hassan, Hassan, Omar, Zakaria y Nor (2012)	Cuestionario	Crean un cuestionario basado en el modelo CIPP, con el propósito de evaluar y rediseñar un programa de maestría en línea, que tiene 12 cursos de Informática. La investigación consta de tres fases, en la fase 1 se construye y valida el cuestionario, en la fase 2 se analizan los resultados del cuestionario y se recoge información para modificar algunos aspectos del programa de maestría, en la fase 3 se hacen las modificaciones y se reevalúa.
			Evalúan los materiales de aprendizaje en línea de un curso de Cálculo, basados en las siguientes estrategias de motivación: atención, relevancia, confianza y satisfacción. Estudiantes y evaluadores, quienes tienen conocimiento en Cálculo, responden el cuestionario. Para los estudiantes, los materiales cumplen con las estrategias de motivación: atención, confianza y satisfacción. Mientras que, para los evaluadores cumplen solo con la relevancia.

Propósito	Estudios	Modelo o enfoque	Resumen
Evaluar la calidad			
• de cursos en línea	Sandia, Montilva y Barrios (2005)	Método de evaluación integral	Basado en un marco metodológico para la evaluación de productos instruccionales, elaboran un método de evaluación compuesto por tres elementos: un modelo conceptual de cursos en línea, un proceso de evaluación y un modelo de organización del grupo de evaluación. Este provee un marco general de evaluación que se adapta al curso en línea que se desee evaluar.
	Santoveña Casal (2010)	Cuestionario	Desarrolla un cuestionario para evaluar la calidad de cursos en línea, específicamente diseñados en la plataforma *WebCT.* El cuestionario tiene 36 ítems distribuidos en los siguientes aspectos: (1) calidad general del entorno y de la metodología didáctica, (2) navegación y diseño, y (3) recursos multimedia.
	Tello Díaz-Maroto (2010)	Modelo de Evaluación de Programas Formativos, impartidos a través del Internet (MEPFI)	Provee evidencia para la validación del MEPFI, usando cursos en línea de diferentes niveles educativos (bachillerato y postgrado) y de programas de formación continua para profesores. Este método es una combinación de los niveles de evaluación de Kirkpatrick y de los aspectos de evaluación de Pere Marqués.
	Urbina Nájera, Pérez Camacho y	Modelo *E-learning Quality* (ELQ)	Desarrollan un cuestionario basado en el modelo ELQ, para evaluar la calidad de los cursos en línea de un campus virtual universitario. El modelo ELQ surge de un

Propósito	Estudios	Modelo o enfoque	Resumen
	Rodríguez Huesca (2013)		análisis de las políticas y los proyectos europeos, así como de la investigación sobre la calidad en educación a distancia. El cuestionario consta de 18 preguntas, que respondieron 10 expertos en cursos en línea.
• de la experiencia de los estudiantes	Ginns y Ellis (2009)	Cuestionario	Desarrollan un cuestionario para determinar la calidad de la experiencia de aprendizaje de los estudiantes en actividades en línea, como complemento de cursos presenciales.
Evaluar la satisfacción del aprendizaje de los estudiantes a través del curso en línea	Ozkan y Koseler (2009)	Cuestionario	Desarrollan un cuestionario en línea, basados en el modelo de evaluación de e-learning hexagonal. Contiene 73 preguntas divididas en tres componentes: (1) información demográfica, (2) hábitos de uso del portal e-learning y la computadora, (3) actitudes hacia e-learning.
Evaluar la disponibilidad de los instructores en línea, durante su ejecutoria	Schulte (2009)	Implementación del programado *Quick Check*	Desarrolla un programado que registra las acciones del instructor y provee retroalimentación de la evaluación, permitiendo que ellos puedan mejorar su ejecutoria.
Evaluar la implementación y	Mashhour y Saleh (2010)	Cuestionario	Los estudiantes y los instructores de cursos en línea de universidades en Jordania muestran un alto

Propósito	Estudios	Modelo o enfoque	Resumen
progreso del curso en línea			grado de aceptación de esta modalidad de enseñanza. Además, encuentran que la inadecuada infraestructura y el poco respaldo del gobierno afectan el progreso de los cursos en línea.
Evaluar las estrategias de aprendizaje de los estudiantes	Tsai (2009)	Cuestionario	Basado en el modelo estratégico de e-learning, desarrolló el cuestionario *Online Learning Strategies Scale* (OLSS), para examinar y valorar las estrategias de aprendizaje de los estudiantes expuestos al aprendizaje en línea. Contiene 20 ítems con una escala de cinco categorías (1en nada se parece a mí a 5 muy parecido a mí) y recoge los datos desde una perspectiva metacognitiva de los estudiantes. El OLSS es un instrumento que ayuda a entender las ventajas y desventajas del aprendizaje en línea.
Evaluar cursos en línea desde la perspectiva del estudiante	Rodríguez Hernández, Flores Guerrero y López de la Madrid (2010)	Cuestionario	Evalúan si las dimensiones pedagógicas, tecnológica, diseño de interfaz, evaluación, gestión y apoyo de los recursos, influyen en la forma en que los estudiantes evalúan los cursos en línea. Concluye que todas las dimensiones evaluadas tienen una influencia significativa. Por tanto, se deben tener en cuenta al diseñar, implementar y trabajar el curso en línea.
Evaluar el enfoque constructivista	Gazi (2011)	Cuestionario	Desarrolla una escala para evaluar una práctica constructivista apropiada en los cursos en línea. Presenta el proceso de validación de los datos de la escala.

Propósito	Estudios	Modelo o enfoque	Resumen
en las prácticas de educación en línea			
Evaluar la implementación y resultados del curso en línea	Rodríguez y Miguel (2005)	Modelo CIPP	Utilizan la evaluación de proceso y producto del modelo CIPP, para la evaluación formativa de la implementación de un programa de adiestramiento en línea.

Modelos o enfoques de evaluación de cursos en línea

En los estudios revisados se observa la adaptación de modelos o enfoques de evaluación de programas para la evaluación de cursos en línea. Entre los cuales se ha encontrado el modelo de Kirkpatrick (Galloway, 2005; Hallett y Essex, 2002) y el de Contexto, Insumo, Proceso y Producto (CIPP) (Chapman, 2006; Rodríguez y Miguel, 2005; Tokmak et al., 2013).

El modelo propuesto por Donald Kirkpatrick es el que se aplica con mayor frecuencia para evaluar la efectividad de los programas de adiestramiento (Galloway, 2005), en el cual se identifican cuatro niveles: reacción, aprendizaje, comportamiento y resultados. Cada nivel es más amplio que el anterior, además, cada nivel depende de los logros obtenidos en el anterior para su éxito. Por lo tanto, es un modelo acumulativo que puede utilizarse para obtener información en profundidad sobre el valor de un curso o programa en línea (Hallett y Essex, 2002).

A pesar de estas características, el modelo de Kirkpatrick puede ser considerado simple para la evaluación de cursos en línea. Entre las debilidades que presenta se encuentra: (1) asume que las evaluaciones son definitivas, que pueden ser replicados y generalizados a grupos más grandes; y (2) la evaluación de la efectividad se centra en si el adiestramiento ha producido los resultados esperados (Aldrich, 2002 citado en Galloway, 2005). Para Galloway (2005), el modelo más idóneo para la evaluación del aprendizaje basado en la tecnología es uno hibrido, formado de los modelos de Kirkpatrick y *Return On Investment* (ROI) de Jack Phillips. Incluye información sobre cómo la persona aplica el conocimiento desarrollado, y especifica cómo es el retorno del dinero para la institución que invirtió en formación (Phillips, 2003).

El modelo CIPP, desarrollado por Daniel Stufflebeam ha sido adaptado para la

evaluación de cursos en línea (Chapman, 2006; Rodríguez & Miguel, 2005; Tokmak et al., 2013). Según las categorías de modelos de evaluación de Hew, Liu, Martinez, Bonk y Lee (2004), se considera como una evaluación a nivel macro, es decir que evalúa todo el programa educativo en línea. Por otro lado, el modelo de CIPP se considera apropiado para la evaluación de cursos en línea porque orienta los esfuerzos de la planificación, la programación y la ejecución. Siendo lo más importante el mejoramiento de lo que se evalúa (Chapman, 2006).

Además de la adaptación de los modelos antes mencionados, hay investigaciones que proponen otras alternativas para la evaluación de cursos en línea. Tal es el caso de *Quick Check*, el cual es un programado diseñado para evaluar de manera eficiente y objetiva a los instructores en línea dentro, de su ambiente de clases (Schulte, 2009). Este programado usa dos indicadores, que son extraídos de las políticas de participación del instructor en línea de *Park University*, a saber:

1. Mensajes del instructor en todas las discusiones semanales, no menos de tres días durante la semana.
2. El instructor entrega la calificación en un tiempo oportuno y proporciona retroalimentación de las asignaciones y calificaciones de los estudiantes.

Quick Ckeck, dentro de su diseño, ofrece una retroalimentación al instructor en línea, de tal manera que, si se encuentra que uno o ambos indicadores no lo están cumpliendo, recibe un correo electrónico del programado con un breve reporte de sus registros. De esta manera, el instructor puede conocer la evaluación de su práctica y así mejorarla.

También se encontraron otros modelos para la evaluación de cursos en línea, tales

como el Modelo Multidimensional para el Planeamiento y Evaluación de cursos en línea (Fetaji y Fetaji, 2009), Modelo de Evaluación de Programas Formativos impartidos a través del Internet (Tello Díaz-Maroto, 2010) y Modelo *E-learning* Quality (Urbina Nájera et al., 2013). El Modelo Multidimensional para el Planeamiento y Evaluación de cursos en línea se basa en los siguientes 18 indicadores del aprendizaje en línea (Fetaji y Fetaji, 2009):

1. Antecedentes educativos de los estudiantes con su trasfondo cultural
2. Nivel de competencias en informática de los estudiantes
3. Tipo de estudiantes
4. Estilo de aprendizaje e inteligencias múltiples
5. Obstáculos que se enfrentan en el aprendizaje en línea
6. Atención
7. Contenidos electrónicos (idoneidad, preferencias de formato), contenidos del aprendizaje en línea considerado como vehículo del proceso de aprendizaje en línea y construcción del conocimiento
8. Diseño instruccional
9. Detalles de organización
10. Preferencias de la logística del aprendizaje en línea
11. Preferencias del indicador de diseño de aprendizaje en línea
12. Capacidades técnicas disponibles para encuestas
13. Colaboración
14. Accesibilidad disponible para encuestas

15. Motivación

16. Actitudes e intereses

17. Rendimiento

18. Resultados del aprendizaje

Este modelo permite la planificación, comparación y evaluación de diferentes proyectos de los cursos en línea. Además, durante el estudio se hace un análisis comparativo de las plataformas *Ángel* y *Moodle*, centrado en la comparación y evaluación de los indicadores del aprendizaje en línea. Fetaji y Fetaji (2009) afirman que, con la aplicación de este método, en el desarrollo de cursos en línea sobre las plataformas antes indicadas, es más probable lograr mejores resultados y mayor eficiencia, así como un mayor retorno de la inversión.

El Modelo de Evaluación de Programas Formativos impartidos a través del Internet (Tello Diaz-Maroto, 2010) consta de los siguientes cinco niveles objeto de evaluación:

1. Diseño

   Incluye los siguientes aspectos: (a) de la plataforma, (b) funcionales, (c) técnicos y estéticos, y (d) pedagógicos.

2. Ejecución

3. Reacción

   Incluye los siguientes tipos de satisfacción: (a) aspectos generales del curso, (b) infraestructuras, (c) recursos (materiales y humanos), (d) aspectos técnicos y estéticos, (e) objetivos de aprendizaje, (f) contenidos de aprendizaje, (g) actividades de aprendizaje, (h) sistema de evaluación y (i) en general

4. Aprendizaje
5. Transferencia

Luego, durante la investigación se observó que no son suficientes estos aspectos, sino que la información obtenida de la evaluación se debe usar para mejorar continuamente el curso ofertado (Tello Díaz-Maroto, 2010). Además, "con el objeto de la mejora de los cursos evaluados, dicho modelo de evaluación de programas a través de Internet se incluyó en un ciclo sistémico de diseño, creación, aplicación, evaluación y modificación de la formación" (Tello Díaz-Maroto, 2010, p.215). Este modelo se aplicó a cursos de diferentes características, con el propósito de garantizar que el modelo responda a cualquier tipo de curso.

Según Urbina Nájera et al. (2013, p.157) "el Modelo *E-learning Quality* está basado en un análisis de las políticas y proyectos europeos, en las prácticas de organizaciones nacionales europeas y en un análisis de la investigación actual sobre la calidad en educación a distancia, desarrollado por la Agencia Nacional Sueca para la Educación Superior (HÔGSKOLEVERKET, Swedish National Agency for Higher Education, 2008)". Consta de 10 aspectos de la evaluación de la calidad de la educación a distancia:

1. Material/contenido
2. Estructura/entorno virtual
3. Comunicación, cooperación e interactividad
4. Evaluación de los estudiantes
5. Flexibilidad y adaptabilidad
6. Soporte (estudiantes y personal)

7. Clasificaciones y experiencias del personal
8. Visión y liderazgo institucional
9. Asignación de recursos
10. Holística y los aspectos del proceso

Cada uno de estos aspectos incluye la evaluación, actualización y mejora continua. “Dichos aspectos no están enumerados conforme a su importancia, pero guardan una secuencia aproximada de los elementos básicos del proceso enseñanza-aprendizaje, una panorámica de la organización de forma sistémica y holística” (Urbina Nájera et al., 2013, p.160).

Por otra parte, los estudios revisados revelan una tendencia a realizar evaluaciones de cursos en línea aplicando cuestionarios. Los mismos responden a ciertos factores que los investigadores consideran que el curso en línea debe contener. En la Tabla 2 se describe los cuestionarios encontrados en la revisión de la literatura y los factores que estos toman en consideración.

Tabla 2

Estudios que usan cuestionarios para evaluar cursos en línea

Estudio	Cuestionario	Factores que incluye el cuestionario
Feinstein (2004)	Cuestionario para evaluar la enseñanza en línea	No indica los factores, solo que las preguntas corresponden a los niveles de la taxonomía cognoscitiva de Bloom
Ginns y Ellis (2009)	*Student Course Experience Questionnaire* (SCEQ)	Enseñanza, objetivos y normas claras, evaluación adecuada, carga de trabajo adecuada, aprendizaje en línea y competencias genéricas
Ozkan y Koseler (2009)	Cuestionario para evaluar la satisfacción del aprendizaje de los estudiantes a través del curso en línea	Calidad del sistema, calidad del servicio, calidad del contenido, perspectiva del aprendiz, actitudes del instructor y problemas de apoyo
Tsai (2009)	*Online Learning Strategies Scale* (OLSS)	Flexibilidad en tiempo y espacio, interacción social indirecta, abundancia de recursos de información e interfaz dinámica de aprendizaje
Mashhour y Saleh (2010)	Cuestionario para evaluar la implementación y progreso del aprendizaje en línea	Material didáctico, tutorial de apoyo, ambiente, técnicas de evaluación, colaboración con pares, comunicación mutua y estilos de enseñanza
Rodríguez Hernández et al. (2010)	Cuestionario para evaluar un curso en línea desde la perspectiva del estudiante	Pedagógico, tecnológico, diseño de interfaz, evaluación, gestión y apoyo de recursos
Santoveña Casal (2010)	Cuestionario de evaluación de la calidad de cursos virtuales	Calidad general del entorno y de la metodología didáctica, calidad técnica (navegación, diseño y recursos multimedia)
Gazi (2011)	Cuestionario para evaluar si las prácticas de educación en línea, a nivel universitario, tienen nociones de enfoque	Proceso de aprendizaje en línea constructivista, aprendizaje y evaluación entre pares, resultado de aprendizaje colaborativo, desarrollo de habilidades,

	constructivista	diseño del curso en línea
Hassan et al. (2012)	Cuestionario para evaluar material para el aprendizaje en línea (*Power Point*, *Math Type*, *Articule Presente*r en *Moodle*)	Atención, relevancia, confianza y satisfacción

Conclusión

La revisión de literatura muestra que existe una clara tendencia a evaluar la efectividad y calidad de los cursos en línea. Además, entre los aspectos del curso en línea que comúnmente se consideran en la evaluación, se encuentran: el diseño instruccional y de la interface, el contenido, las estrategias de enseñanza y evaluación, así como, los recursos tecnológicos. La selección de los aspectos a incluir, depende del propósito de la evaluación y del modelo o enfoque de evaluación que usen.

Para realizar las evaluaciones se adaptan modelos de la evaluación de programas, como el modelo de Kirkpatrick o CIPP. Otros proponen nuevos enfoques de evaluación, pero se observa una tendencia al uso de cuestionarios. Considerando que la evaluación de un curso en línea debe ser sistemática, y no limitarse al estudio del aprovechamiento o la satisfacción de los estudiantes (Galloway, 2005; Hallett y Essex, 2002; Rodríguez Hernández et al., 2010; Tello Díaz-Maroto, 2010; Tokmak et al., 2013; Urbina Nájera et al., 2013), sería apropiado realizar una metaevaluación de los estudios que usan cuestionarios en la evaluación de cursos en línea. De esta manera, se podría establecer la rigurosidad del estudio y validar los resultados obtenidos.

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Article 6: To Blend or not to Blend: A Case Study of On-line Learning in General Biology.

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Abstract

The drive to increase on-line course offerings has many motivations. The most compelling for Community College students is often the need to juggle family demands and the need to work while attempting to earn their college degree. On-line education began with the for-profit educational industry and the experiences of students in the for -profit arena has much to teach us. A significant feature is the high drop -out rates associated with massive on-line courses (MOOCs). Bronx Community College is a Hispanic Serving Community College whose students could benefit from the flexibility on-line courses can provide. However, recent data suggests that these are the very students who tend to underperform in an on-line setting. The current work is a case study that compares the performance of students taking a hybrid General Biology I course to students in the classic lecture sections of the course. The results indicate that students in the hybrid course sections show lower performance on common final exam assessments, lower passing grades and rates compared to students enrolled in the classic lecture sections of the course.

Keywords: Hispanic Serving Community College, General Biology, On-line Education.

To Blend or not to Blend: A Case Study of On-line Learning in General Biology.

The implementation of on-line course content is revolutionizing education. On-line courses, first adopted by for profit institutions, are now also widely utilized by not-for-profit institutions. The increasing reliance on the use of on-line instruction is occurring for many reasons. Potential advantages include increasing accessibility for non-traditional students balancing the multiple responsibilities of family, job and education (Wingard, 2004) . It has also been suggested that on-line instruction increases the interaction between students and faculty with the use of on-line discussion groups and various web based resources (Waddoups & Howell, 2002). Students and faculty have related positives to include flexibility, convenience and ease of interaction (Dziuban, Hartman, & Moskal, 2004). Students have rated the quality of their on-line experience as high or higher than their face-to-face courses (Waddoups & Howell, 2002). These are only some of the forces that have driven expansion of the on-line course format.

Massive open on-line courses (MOOCs) have been a major driver in the evolution of on-line education. In theory, these courses can make educational opportunity available to all. However, some of the challenges observed in MOOC courses should be examined by not-for-profit institutions as they expand on line course offerings. In one report, of 35,000 students enrolled, only 12% completed all of the coursework. This trend is fairly typical across all MOOCs (Bernstein, 2013). While this level of attrition might be acceptable in the MOOC format, this is untenable in the classic educational format. Students who succeed in the on-line format tend to be self -motivated and are driven to complete the course based on strong interest. In a not-for-

profit setting where students must often enroll in courses not based on interest, but to satisfy graduation requirements, this presents an obvious hurdle.

In 2017, the Brookings Institute prepared a study titled “Promises and Pitfalls of On-line Education” in which it was concluded that “students in on-line courses perform substantially worse than students in traditional in-person courses” (Bettinger & Loeb, 2017). Despite the many publications that attest to the effectiveness of on-line course outcomes, the Brookings Institute Study suggests that there is cause to reevaluate the wide implementation of on-line courses. Specifically, the study indicated that these courses are especially difficult for students who are un-prepared for college level work in one or more subject areas. They determined that when these students take on-line courses, their persistence and outcomes are subpar compared to similar students taking traditional face-to-face courses. At urban community colleges, where students often begin their college careers with the need for academic remediation, the findings of the Brookings Institute study suggest that greater thought and analysis should precede implementation of on-line courses to ensure that students are spared the pitfalls revealed in the study. These challenges are especially relevant in Science, Technology, Engineering and Math (S.T.E. M) courses at minority serving institutions, where student preparation for college level courses is often deficient and is associated with low performance, increased dropout rates and low graduation rates.

Background

The student body of Bronx Community College (BCC) is a diverse group ethnically, consisting of 64% Hispanics, 32% blacks and 6% other groups, and by age and demographics. Over one hundred languages are spoken by our students. As an open enrollment institution, all New York State high school graduates or GED holders are given entry, with most students requiring remediation in at least one subject area. Students are required to complete courses outside of their major in areas such as writing, science, mathematics, communications, social science and history. These requirements are meant to ensure that all students who complete an associate's degree at BCC are prepared for the many paths our students choose to pursue. Some students go directly into the workforce through our professional programs such as the Nursing Program, Medical Laboratory Technician or Radiology programs, to name a few. Some students transfer to four-year colleges to complete the bachelor's degree.

The non-major requirements ensure that educational gaps, which may have occurred due to years away from college for career changers, or high school drop outs who completed the General Education Diploma (G.E.D) to qualify for entry or recent high school graduates still requiring remediation, are addressed. Successful completion of the science requirement can be challenging for our students. In the Department of Biological Sciences at BCC, the combined withdrawal and dropout rates for General Biology I (Biology 11) students can range between 30 - 40% each semester. Possible causes include, socioeconomic stressors, such as the time constraints experienced by students juggling school, family and work or lack of or loss of financial aid. Academic unpreparedness only adds to these difficult challenges.

The General Biology I course consists of two lecture hours per week and two, two - hour laboratory sessions per week. Students are given five lecture exams and four laboratory exams. The grades for laboratory and lecture are averaged and each contribute fifty percent (50%) to the final grade. Students are instructed regarding the structure, function and differences between prokaryotic and eukaryotic cells, and are introduced to the structure and function of the human organ systems. For most students, this course is their first and possibly only laboratory-based science course. They are taught how to prepare slides, use a microscope and perform dissections of the sheep eye, brain and fetal pig during the laboratory section of the course. While students are invigorated by the new experiences, they are also overwhelmed by the course content, often underestimating the study time required to succeed in the course. Poor study habits also precipitate the high withdrawal and dropout rates, and in part stem from the lack of previous exposure to a demanding laboratory-based science course before attending BCC.

The City University of New York, like many not-for-profit universities, has been expanding on-line course offerings. No difference in implementation has been suggested between community colleges and four- year colleges, while these student populations vary greatly in their preparedness for college level work. Students admitted to the four- year colleges must meet higher criteria of entry not set for community college students. Faculty instruction related to teaching on-line sections is that they teach the on-line version of the face-to- face lecture, using various media tools to replace face-to-face interaction. However, the 2017 Brookings study suggests that this will not be effective for the urban community college

students we teach. The aim of this study is to determine how students enrolled in a hybrid General Biology I course compare to those in a classic lecture section, using common assessment questions.

Research method

The on-line General Biology course sections are taught using a blended format. This means that a portion of the course is taught on-line, in this case the lecture section, and the laboratory section is fully face-to-face. Students who enroll for a hybrid section must have a minimum GPA of 2.5. They are required to review and complete the lecture content independently, using Blackboard. They are provided identical reading assignments, PowerPoint slides and homework. The on-line lecture section differs in that video links are included for each content area. Students are required to view the videos and complete on-line quizzes (face-to-face sections are given quizzes in-class) and participation in discussion boards (which replaces in-class discussions) is required. Hybrid students are instructed to attend office hours or use the discussion board or email to ask questions and to seek additional support. All students are referred to the departmental tutoring lab hours. The laboratory sections were taught identically.

Each semester all General Biology I students are required to answer common final questions, to assess student understanding of several core competencies. This is achieved using twenty- five (25) multiple choice questions which are scored by each instructor. For each course

section, a benchmark of 70% of students answering a specific question correctly is the goal. Eight of the twenty-five questions were common to all the sections analyzed in the current study (the questions are updated each semester). Student withdrawal rates and impression of instructor were compared between hybrid and classic sections. Finally, the grade distributions were also compared.

Results

Content areas covered by common final questions and comparison of percentage of incorrect answers for hybrid and classic lecture sections

Departmental assessments enable an objective comparison of student performance across all sections of the course taught in a given semester. These questions reflect content areas deemed most important by faculty teaching the course. These assessment questions are reviewed each semester, allowing instructors to identify the concepts students find most challenging and adjust instruction as needed. Eight of these assessment questions were selected for analysis of four General Biology I sections. Two were hybrid sections (asynchronous), meaning the lecture content was provided on-line and students could access the content and complete assignments using Blackboard at any time, and two of the sections were taught using the classical lecture format (two hours per week). Students in all four sections were required to attend in-class laboratory twice per week, for a total of four laboratory hours per week.

In figure 1, the number of students who incorrectly answered the selected questions was averaged for the two hybrid sections (n = 24) and the two lecture sections (n = 27). Of the eight questions selected for comparison (because they were identical for all the sections selected), over eighty percent of both hybrid and lecture students answered question 15 correctly (well above the departmental goal of seventy percent). On all other questions, the hybrid sections were ten (10%) percent points or more below lecture sections. The largest differences in performance were observed on questions related the concepts of homeostasis, plasma membrane structure and enzymes (questions 1, 6 and 8). In these areas, the difference between the hybrid and lecture sections was over twenty percent, with the hybrid sections failing to meet the department mean of thirty percent incorrect or less. On five of the eight questions, the hybrid sections failed to meet the department of goal of thirty percent incorrect or less, while for the lecture sections the average fell below department expectation on one of the eight questions (question 13, the graphing question). Quantitative analysis (question 13) was the one content area where both groups did not achieve the department mean.

Hybrid sections show lower withdrawal rates and higher perception of instructor compared to classic lecture sections

Students who register for a course only to find it very challenging often withdraw from the course. A comparison of withdrawal rates between groups might suggest how many students “feel” they are able to successfully complete the course after 7 weeks. In addition, students’ view of their instructor can be negatively impacted by instructional environments in

which they do not see the professor face to face and their interactions are limited to on-line discussion groups. Figure 2 shows that the classic lecture sections demonstrate higher withdrawal rates compared to the hybrid sections. The classic lecture sections show a withdrawal rate of 44% compared to 30% for the hybrid sections. On a scale of 0 – 4, both groups rated the instructor above 3.5 (3.9 in the hybrid groups and 3.6 in the classic lecture groups). The impression of the instructor indicates that the hybrid students report a higher impression of the instructor, which is coincident with lower withdrawal rates. On the other hand, the classic lecture sections report a somewhat lower impression of the instructor, which correlates with the higher withdrawal rates. These results indicate that more of the hybrid students were confident in their ability to complete the course successfully.

Classic lecture sections achieve higher grades and course pass rates

Figure 3 indicates that the classic lecture sections achieved a greater distribution of higher grades. The same percentage (3%) of students in the hybrid and classic lecture sections achieved the highest grade in the course (A). However, a greater number of the classic lecture students achieved a grade of B -11/27, compared to 5/24 of the hybrid students. More of the hybrid students passed the course at the lowest passing grade of D - 8/24, compared to only 5/27 of the classic lecture students. The passing rates demonstrate that a lower percentage - 54% of the hybrid students passed the course with a grade of C or above (13/24), while 74% of the classic lecture students passed the course with a C or above (24/27). These results indicate that a greater percentage of the hybrid students are achieving at the most basic level of

competence, while a greater percentage of the classic lecture students demonstrate above average mastery of the content.

Discussion

The current analysis demonstrates that using an objective measure – namely the comparison of student performance on common final assessment questions tested in the same way (in person final exam) - the students enrolled in the hybrid sections did not achieve the minimum departmental standard for most of the questions reviewed. This is despite lower course withdrawal rates and rating the instructor more highly than the classic lecture students. The data supports the findings of the 2017 Brookings Study, which indicate that on-line instruction needs to be modified to address the needs of community colleges students.

The fact that BCC students are required to have a 2.5 GPA to enroll in a hybrid course indicates that these students were performing at or above average in previous face-to-face classroom settings. For many students, the appeal of hybrid courses is having more free time to better juggle family demands and work while pursuing a college degree. However, no assessments have been done to determine how students manage the additional free time. Students should be assessed to evaluate whether there is a misperception regarding the time required to perform at or above average in a hybrid course. Thus, the assessment should evaluate the impact of the freed time on the performance of students by asking questions such as: How many hours of study are being dedicated to their course work? Are students working longer hours or taking up new jobs while enrolling in a hybrid course? Are students volunteering to help ailing family members or expecting/having newborn children?

Another area that the assessment may evaluate is the environment the students are immersed in while conducting the online assignments off campus. This is extremely important for students who live in urban settings such as the district of Bronx, New York. For example, are the students conducting online assignments in an environment conducive to learning, or are they distracted by domestic work? Are students conducting online assignments at home or at work? Are students able to access computers off campus, or are they relying on smartphones? The responses to these questions would direct the creation of student-centered solutions to improve performance. Interventions created to address the most pressing challenges could include the creation of structured on-campus recitation classes, however, this would be a poor fit for students with severe time constraints. Alternatively, recitation sessions for small groups could be organized using Blackboard Collaborate. Ultimately, the application of any intervention intended to improve student performance in hybrid courses must be predicated on a thorough evaluation of the needs of the students.

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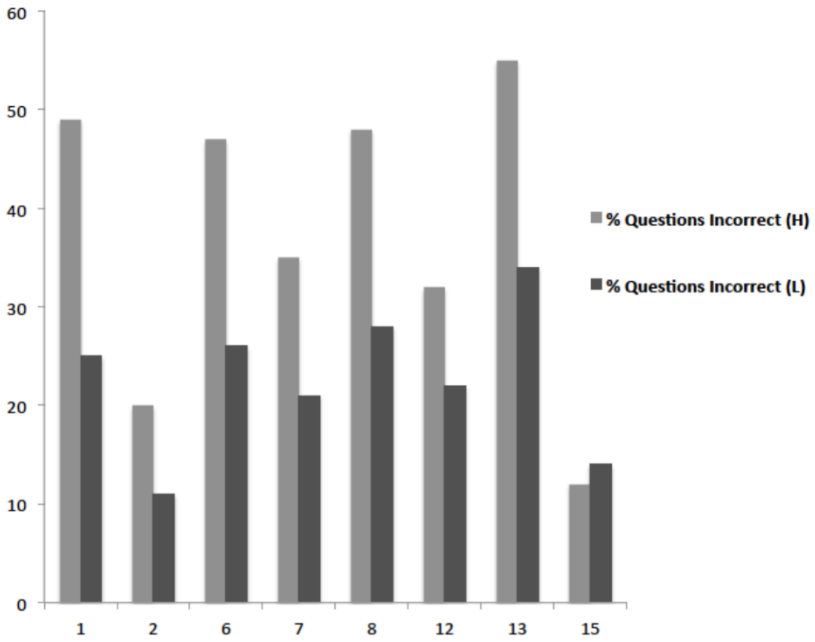
Figures



Question #	Concept Tested
1	Body temperature and homeostasis
2	Atomic structure and bonding
6	Plasma membrane structure
7	Adenosine Triphosphate as an energy shuttle
8	Enzymes as biological catalysts
12	Cellular Respiration
13	Quantitative analysis: graph interpretation
15	Digestive system (humans)

Figure 1: Comparison of student performance on assessment questions in both hybrid (H) (n = 24) and classic lecture (L) (n = 27) sections. The number of questions answered incorrectly is compared for eight common final questions. Two hybrid and two lecture course sections are compared.

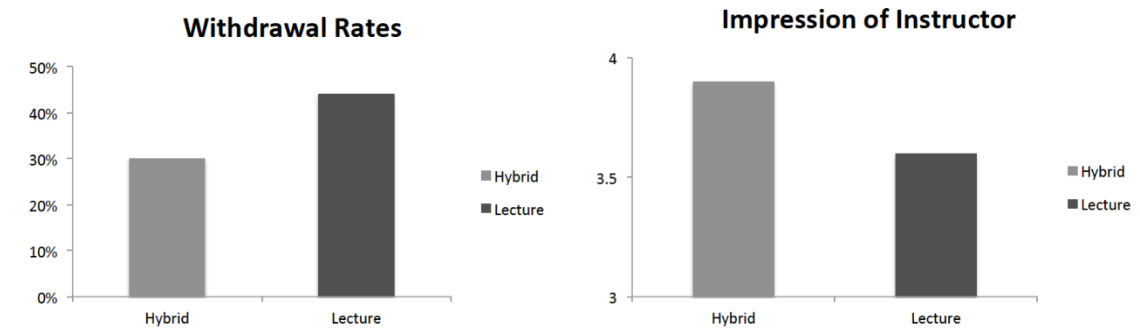


Figure 2: Higher withdrawal rates are observed in the classic lecture section compared to hybrid sections, commensurate with lower impression of instructor

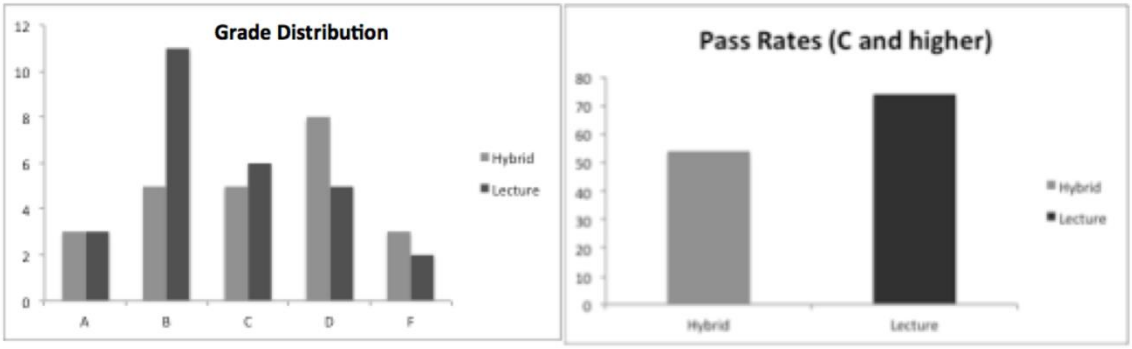


Figure 3: Classic lecture sections achieve higher grades and pass the course at higher rates.

Article 7: Zoom: An Innovative Solution for the Live-online Virtual Classroom.

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Abstract

This article is a case study of a courseware experience with the creation of a live-online virtual classrooms using Zoom. Live-online virtual classrooms with two-way audio and HD video were created for seven different courses at the higher education level. This innovative technology allows all participants to see and hear every classmate using any device, including iPhones, tablets and computers. We describe how to set up the Zoom account and how to set up the live-online virtual classroom, including the parameters we use. We document how to set up a home or office studio and how to broadcast the classes. We explain our virtual classroom class experiences and how we evaluated students live-online. We also provide several best practices for hosting and studying in a live-online virtual classroom.

Zoom: An Innovative Solution for the Live-online Virtual Classroom.

Introduction

The Spring semester 2017 was stopped in its tracks by a massive student strike that lasted from March 28 until June 12, 2017. On May 5, 2017 Puerto Rico Supreme Court sent an order of mandamus and preliminary injunction to all university personnel instructing everyone to reestablish access to campus and continue its scheduled classes on May 11, by 6p.m. (Menéndez González et. al. vs UPR et. al., 2017).

Fearing contempt of court, we set out look for an alternative methodology to be able to comply with the Puerto Rico Supreme Court's order. It was well-known, within the University community, that the administration had no way to comply with the Court's order, as it conflicted with established university policies. Physical access to campus was restored on June 12, 2017, a month after the mandamus. As professors, we decided that our best option to comply with the mandate and reestablish access to our classes as the Court ordered was to create a Live-online Virtual Classroom.

Problem

The concept of the virtual classroom has been around for many decades. Starting with closed-circuit TV, public access TV, satellite communication with live two-way audio and video, and ending with the internet. One-way video and two-way audio with chat has been the standard for the last decade. Currently, webinars and virtual classrooms are becoming key professional development methods for business (Christopher, 2015; Robinson, 2018).

According to Rivera Serrano (2018), higher education organizations need to include in their curriculum distance education strategies that promote teaching and learning in virtual contexts. In addition, research shows that mediated video technology can match face to face communication on the amount of information transferred between people (Aritz, Walker, & Cardon, 2018). Handgraaf et.al. (2012), suggested that virtual classroom conferences can substitute for face to face communication as they found no significant difference in the results between face to face and virtual meetings.

According to Pentland (2012), Media Richness Theory (MRT) states that performance improves when communication media are richer. The MRT states that media are richer when they can: handle multiple cues simultaneously, facilitate rapid feedback, establish a personal focus, and use natural language. The MRT richness continuum starts with face-to-face communication, videoconferencing, telephone communication, chat, email and ends with print. Research suggests that the richer channels lead to higher educational attainment (Aritz, Walker, & Cardon, 2018; Handgraaf, et al., 2012; Omlion-Hodges & Sugg, 2019; Pentland, 2012; Webster & Hackey, 1997).

To comply with the Court's mandate, our challenge was to find a software solution that would allow us to recreate the physical classroom experience to restart our classes. Our virtual classroom requirements included the abilities to:

- present live-online face-to-face discussion classes where students would be able to speak with each other as well as the professor in real time,

- present live-online lecture classes, including sharing PowerPoint presentations, videos and documents,
- participate using any smartphone, tablet or computer, and
- participate from any location in the world.

Students need develop the skill to use technology to participate in virtual classrooms as it is an essential skill for the modern workplace (ATD Research, 2016; Parkinson, 2018; Smith, 2018).

Characteristics of Our Learners

The students at our university are mostly traditional-age college students (17-24). Professor-led internal surveys at the beginning of all classes showed that although not all students own a computer, one hundred percent own a smartphone. At all times, students had access to email, and the Learning Management System (LMS) Edmodo.

We taught 13 sections of seven courses. The courses were: Biology for Non-majors (2 sections), Biology Laboratory (4 sections), First-year English (4 sections), Introduction to Business Communication (1 section), Business Report Writing (1 section), and Business Writing & Document Analysis (1 section). A total of 89 students were first-year, 20 were sophomores, 26 were juniors and 55 were seniors for a total of 190 students.

Innovative Use of Technology, How We Did It—Choosing the Software

There are many commercial software solutions to create virtual classrooms. We considered using software such as Adobe Connect, Skype, and Big Blue Button, but none of

them could fulfill the main requirements we had for the virtual classroom to be able to see and be seen by all students at the same time, and for students to be able to see each other. In addition, we needed a software solution that would be affordable or even free, as we had no budget for the project.

Adobe Connect was rejected as it requires an expensive per-student fee and only the hosts can be seen by the students. Big Blue Button was rejected as it requires the use of the flash plug-in, so it does not work with iPhones or iPads. Skype was rejected as it has a limited number of participants per video call.

We used Zoom Meetings, from zoom.us, to create our virtual classroom. Zoom Meetings was the best solution to our problem as it fulfills all the requirements to create our live-online virtual classroom.

Zoom has many advantages over other software solutions and fixes the problem of lack of interactivity from participants who cannot be seen by the professor or the classmates (Parkinson, 2018). The software allows up to 49 participants and 1 host to interact with each other live in the virtual classroom, where everyone can see and speak with each other. Zoom can be used from any device or any computer by joining the virtual classroom with a link sent out by the professor. There is no need to login or create an account in order to participate. Even though students don't have to open an account, they must write their name when they click on the link to join the virtual classroom. Since we knew our students, and we could see every student in the gallery view, there was no need to verify the identity of the student taking the class. During the classes, most of our students did create their own Zoom account so they

could host their own meetings as part of their everyday university life.

Zoom allowed us to record the classes and all their interactions to our local drive. The Basic plan allowed us to teach 40-minutes classes for free. These 40-minutes segments worked well for uploading the recordings to the LMS without any major edits needed to speed-up the uploading time.

Zoom videoconferencing features HD video, VOIP audio and a gallery view where every student could see and interact with their classmates. As professors, we were able to conduct different types of classes, from lectures to discussion to breakout groups, simulating the interaction of a regular classroom. We even used a virtual background with an aerial view of campus which added to the feeling of "being there" broadcasting from a campus building.

Creating the Virtual Classroom Experience—Logistics

Creating a live-online virtual classroom experience with Zoom is quite easy. We sent out emails and posted on our LMS the requirements for the virtual classroom. All students were required to download the Zoom app to their preferred device. In addition, they were to find a quiet place to take the class during the scheduled time and it was suggested to use their headphones if they were going to join the class from their mobile devices.

Every day before class, we would send out emails with the link for the virtual classroom and we also posted the URL links for the virtual classes to the LMS. Regular classes were to meet live-online for an hour and twenty minutes and laboratory classes for two hours. Since Zoom only allows 40 minutes per meeting in their free account, we adjusted by meeting more

than once using the same link so we could meet for 80 or 120 minutes; or we met for 40 minutes and then gave students activities to perform on their own for the next 40 minutes. For laboratory courses, we also flipped the classroom and provided video demonstrations created by the professor, video resources in Khan academy and met to discuss the work and assignments in two 40 minutes sessions.

We scheduled the live-online virtual meetings at the same day and time the regular classroom courses had been during the regular semester of classes. Every student was aware that classes continued “as normal” even though our semester extended over the summer.

Once the classes were scheduled, we created the polls for each class. Polls were used as icebreakers, review checks, and comprehension checks to add interactivity to the lectures.

We allowed participants to “Join the class before host,” and started all the meetings with the audio and video enabled for all, so that students could interact if they entered the classroom before the professor.

Once the class would start, we would mute all participants from the Participant panel. Participants could unmute themselves, by clicking on a button, and participate in class to answer questions and make comments.

At the start of each class, we also made sure the class was being recorded by looking at the upper right corner of the screen since we had set the option to record the class in the account settings (Clay 2017).

How to Set Up Your Virtual Classroom in Zoom

Through a long process of trial and error we discovered the settings that best work for the college-level live-online virtual classroom. To set up the classroom the first time, we opened our Zoom account and established the settings we wanted to use. There are many settings that can be customized by the host. These settings included: scheduling of meetings, recordings and audio alternatives. Table 1 presents all the technical specifications and settings we used to create our virtual classrooms.

Table 1

Virtual Classroom Settings

Zoom Settings	**Virtual Classroom Settings**
Host Video	On
Participant Video	On
Join Before Host	On
Chat	On
Auto Saving Chats	On
Polling	On
Show Zoom Window During Screen Share	On
Breakout Rooms	On
Virtual Background	On
Screen Sharing	On
Join from Your Browser link	On
Mute Participants Upon Entry	Off
Private Chat	Off
Recording	
Local Recording	On
Record Active Speaker with Shared Screen	On
Display Participants' Names in The	On
Recording, Automatic Recording	On

When we created our classrooms, we customized our Profiles to include a professional photo of the instructors. This is important since anytime you pause the video, that image takes over the host video window; without it, only your name would be displayed in big white letters. We set all our virtual classrooms to Puerto Rico for the time zone, but we used different hosting languages for the classes—English and Business classes were set to English, while the Biology and Laboratory classes were set to Spanish.

For our virtual classrooms it became very important to let students "join before the host," otherwise students would be greeted by a white screen stating that they are "waiting for the host to start the class." We found this message to be unnerving as you wait for class to start. Just as in a regular classroom, students like to be early to the class and talk with their classmates. This setting helped create the atmosphere of a regular classroom (Clay 2017).

For us, automatic recording was the most important setting in the recording tab. This setting would start the recording as soon as the host joins the class so there was no need to remember to hit the record button. We used the recordings section to manage all the class recordings and export them as video files into our LMS, Edmodo (Christopher, 2015).

In the audio settings, we chose to allow the system to provide a phone number link on the invitation email so that students who did not have access to broadband or were out of the country could dial into the class. These students would be able to listen to the class and participate by audio even though they would not be able to see their classmates. This option was meant for extreme cases and was used only by one student in all the classes in the four weeks of the intervention.

The Meetings sections is where one schedules the virtual classroom. We scheduled all classes ahead of time and gave each class a descriptive name. It is important to note that polls can only be created after a meeting is scheduled. In the main screen of the "scheduled meeting," a poll area appears as a separate box under the meeting options. Here is where you can create the polls you will be using during class. This is one of the least intuitive settings of the program. Polls cannot be created in-vivo, so you must remember to create all your polls in advanced. Once inside the virtual classroom, polls are deployed by clicking a button on the interface at the bottom of the screen. In Zoom, everyone gets a Personal Meeting Room ID (PMR) that can be used for recurring meetings. We used this room to schedule our office hours. Since it was the same number each time, students could "drop by" our office just like in the regular campus. All students had to do was click on the join button in their mobile app and type the PMR number. We were always waiting for our students during our office hours.

The Studio Set Up

As we did not have access to our campus offices, we created a virtual studio in an air-conditioned home office. We had a desk with a laptop computer, and we sat on an office chair in front of a chroma key green screen. We used a portable 5' x 7' green screen and a photograph of campus, with an iconic location, so it seemed we were teaching from an actual campus building.

We set a couple of lamps in front of the desk, to provide lighting to the studio. Our lights had daylight setting which we used to mimic a natural source of light. We also set a cardboard box on the desk and propped the laptop on it so that the camera would be at eye-level. Looking

straight into the camera is crucial in the virtual classroom, to simulate the feeling of eye-contact and enhance visual engagement. In addition, we used a Yeti usb microphone to create clear audio for the broadcast.

The Class Experience

In the original academic calendar for the semester, classes were set to finish in May. Since most students had summer commitments such as jobs, internships, and planned vacations with their families, the virtual classroom allowed them to attend classes with just a few minor adjustments. Students were able to participate in class from home, their places or work, vacations and internships in other countries. All classes were scheduled during regular class hours and recordings were posted in the LMS for students who were absent due to prior commitments (Christopher, 2015).

After greetings, we started each class with a poll as an icebreaker and to check where students were mentally (on vacation, at work, at home). Then we followed with lectures that included PowerPoint presentations and discussion questions that promoted face-to-face interaction. We asked questions with polls and discussed the results immediately with the students. We also asked questions and students answered on camera, every ten to fifteen minutes. Although Zoom provides interaction such as Q& A, chat and hand raising icons, we increased engagement with the use of face-to-face live video rather than cumbersome presentations (Christopher, 2015).

For laboratory classes, the professors assigned videos that were discussed in the virtual

classroom. We also played videos from our hard drives and from different websites by using the "sharing the desktop" feature. We used the annotation tools on shared photos and diagrams. We also used the whiteboard feature to draw live diagrams on the virtual board since we were using Surface Pro computers with pens to teach.

Evaluation

Evaluations of both the students and the strategy were conducted. Students were evaluated using different tools. During the live-online class, poll questions were used as comprehension checks. Online quizzes in the LMS were used to assess the learning (Hale, 2018).

In all the courses, a final oral student presentation was required. Students were able to share their desktops with their PowerPoint presentations and answer questions from the professors. Students were evaluated with the same rubrics that had been distributed with the syllabi at the beginning of the semester.

The biology courses had a multiple-choice final exam. Table 2 presents the results of the exams. It is important to note that although the intervention first took place during an emergency—the strike—the second time the strategy was used after another emergency, Hurricane Maria. Final exam results were typical for the test, as in previous years. Results show a slight improvement in the final exam grades during the second iteration of the intervention.

Table 2

Final Exam Results After Using the Virtual Classroom for the Unit

Final Exam Grade	Spring 2017	Spring 2018
A	11%	13%
B	27%	36%
C	54%	33%
D	8%	26%
F	0%	2%

In addition, all the strategies used for the alternative modality courses, which is what the university administration called the adjustments, were evaluated qualitatively by students at the end of the semester. Most evaluations showed that students liked the live-online virtual classroom as they could participate in class from anywhere. Students liked the ability to review the classes in the LMS and the virtual office hours. Business students liked learning a new technology tool and developing new technology skills that would enhance their resumés.

Lessons Learned—Best Practices for The Live-Online Virtual Classroom Using Zoom

For this project, we were able to create virtual classrooms that could rival the on-site classroom experience. All our students were able to finish the semester and fulfill their previous summer commitments. We all learned how to use the tools of the virtual classroom and even had fun with some of the "growing pains," such as having pets barking or family members showing up behind a student to wave to the class.

Here are some of our recommendations for a successful virtual classroom:

1. Have a “practice” class where students learn to use the technology tools.
2. Make sure participants are in quiet environment without distractions—this means family member or roommates cooking, dogs barking, or people having conversations in the same space. The microphone picks up everything so students can not be in a crowded public place and participate in class.
3. Students must have good computer audio or use headphones with microphones in order to participate in class.
4. Schedule all the classes at least a week in advance.
5. Create and program polls before class. If you try to create a poll while in class, the system will take you back to the account area with the settings.
6. Organize all the materials you want to share before the class starts, so you can share the windows that are already open in your computer such as photos, videos and presentations.
7. Upload the virtual background photograph to every computer you may use as virtual backgrounds are not saved in your Zoom account.
8. Have a good light source in front of you, never behind.
9. Always look at the camera rather than your student faces or your content; the moment you lose sight of the camera is the moment your students lose the eye to eye connection with you.

10. Have a specified contingency plan. Tell students what to do if they lose the connection or if the professor losses the connection.
11. Have fun with the technical problems that may arise; if you don't stress and take the time with the technology—your students will relax and enjoy the "bugs" too.

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Meet the Authors

Article 1: Implementation of a Civic Engagement Community Change Model by a Community College through the Integration of Technology and Social Media as a Strategic Element.

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Hector W. Soto has been teaching courses regarding the U.S. legal system, criminal law, U.S. policing and police- community relations for more than 12 years. He is the founder of the Center for Neighborhood Leadership, a school for the training of community organizers and the promotion of community civic engagement. He is also a founding board member of Community Learning Partnership, a national organization that promotes the development of community change studies degree programs in community colleges. Professor Soto is a graduate of Queens College CUNY and the New York University School of Law.

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Article 2: Hispanic Students and Online Learning: Factors of Success.

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Article 3: Teaching Online at a South Bronx Community College.

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Article 4: The Practice of Peer Observation.

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Article 5: *Tendencias en la evaluación de cursos en línea*.

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Article 6: To Blend or not to Blend: A Case Study of On-line Learning in General Biology.

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Article 7: Zoom: An Innovative Solution for the Live-Online Virtual Classroom.

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Professor Mary Jo Barbosa spent over six decades teaching Biological Sciences. She was a pioneer integrating technology into the classroom. From audio-visual materials to Zoom. She began her career in 1960 as a high school Biology teacher. She worked at the Biological Sciences Department where she taught first-year Biology for 53 years. She created the first audio-visual course for the Biological Sciences department. In 2004, after 39 years of pencil and bubble testing, Prof. Barbosa changed to online assessment using the Blackboard LMS for all tests. She input her entire item pool that had been researched and fine-tuned in the previous 39 years with a base sample of over 42,000 first-year students. Prof. Barbosa was the first Director of Environmental Education at the Puerto Rico Department of Natural Resources, where she created the first high school biology research-based course about Puerto Rico. At the PRDNR, she created videotapes for the classroom and for teacher training. In 2012 she created videos for her YouTube channel (Induktiva), in the areas of Mendelian Genetics and Drosophila melanogaster culturing techniques. In 2017, she integrated Zoom to teach live-online. Prof. Barbosa holds an MS in Biology from Rutgers University and Doctoral Studies in Higher Education from New York University. In the Spring of 2018, Prof. Barbosa became a Distinguished Honorary Member of the National Society of Collegiate Scholars for her contributions to Leadership, Scholarship and Service.

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.